SCIENCE AND RESEARCH INTERNAL REPORT N0.32

GUIDELINES FOR CONDUCTING AN ON-SITE VISITOR QUESTIONAIRE SURVEY

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October 1988

PREFACE

These guidelines have been prepared as a Working document. While it is envisaged that they will be used immediately to fulfill a recognised need, the guidelines are subject to future amendment and improvement.

Constructive criticism of all or any part of the guidelines is encouraged.

Please address comments to:

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As a result of suggestions and criticisms a final version of Guidelines for Conducting an On-Site Visitor Questionnaire Survey will be prepared.

In anticipation, I thank you for your input.

Kay Booth

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GUIDELINES FOR CONDUCTING FOR AN ON-SITE VISITOR QUESTIONNAIRE SURVEY

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1. AIM OF THE GUIDELINES

These guidelines aim to provide a simple, introductory approach to visitor questionnaire surveys for the practitioner. They respond to a need expressed within the Department of Conservation (DOC). The intended audience is DOC managers, however students and other researchers may also find the guidelines a useful resource.

Discussion focuses upon on-site visitor questionnaire surveys, both self-completion and interviewer-administered questionnaires. Alternative survey methods and sources of information about visitors are discussed in Section 4 Choice of Method.

The guidelines draw upon literature already written on survey procedures, in essence highlighting and summarising the information available from other sources. A selected bibliography for further reading is given at the conclusion of the report.

These guidelines are part of a long-term goal of a standardised approach to recreational surveys in New Zealand.

2. PLANNING A VISITOR QUESTIONNAIRE SURVEY

2.1 Survey Planning Process

For a successful visitor survey, the following steps must be worked through:

(i) Statement of Objectives
- why is the information needed
- what information is required
- how will the information be used

(ii) Choice of Method
- what data collection methods are available and appropriate
- is an on-site visitor questionnaire survey the best method

(iii) Questionnaire Design
- how should each item of information be framed into a question
- how should the questionnaire be designed

(iv) Sample Design
- who should be surveyed
- how should they be selected
- when and where should they be surveyed

(v) Pre-tests
- how to test the questionnaire and sampling procedures

(vi) Department of Statistics Survey Approval (for Government Departments Only)
- what is required and why
- how to gain approval

(vii) Data Preparation
- how to check and code data for computer analysis

(viii) Data Analysis
- what analyses are relevant
- what does the computer printout mean

(ix) Report
- what should be included

2.2 Resources Required

Sufficient time must be allocated to each step in the process. Too often time allowed for steps i-v is inadequate.

Costs of a visitor questionnaire survey may include:

- printing questionnaires/interview schedules
- postage and stationary
- typing and clerical assistance
- field workers
- payment for interviews
- travelling expenses
- computing
- printing the final report.

The following sections discuss each step in the planning process in detail.

3. STATEMENT OF OBJECTIVES

Information needs must be clearly identified and defined. Questions to be considered include:

a) What is the information needed for - What is its priority?
b) What information is required? -numbers of visitors (where and when?); visitor characteristics (which?); preferences (about what?)....
c) How will the information be used -be specific
d) When and how often is the information required -on-going (daily, weekly, monthly, etc) or 'one-off'!

Responses to these questions should form a clear written statement describing the information requirement. Avoid vague statements such as 'visitor information to assist with park management'. The statement must be specific so that at later stages (questionnaire design, data analysis) it is clear what data is required -and what is not. Each item of information should be separately specified, e.g.

Demographics	- age of respondent
	- gender
	- home town
Facilities Used	- use of tracks
	- use of visitor centre
	- use of interpretive material

Beware of including a lot of unnecessary information. A lot of time and money will be wasted if the data is not required nor justified.

4. CHOICE OF METHOD

To obtain the information in the statement of objectives, the method of data collection needs to be considered. Points to consider:

1. Is the information already available? The information may be available in whole or in part or perhaps some closely related data can be used as a surrogate.

Check possible sources, including:

- internal reports
- other government departments and organisations
- local authorities
- universities
- interest groups and local associations

2. If the information is not available from these sources, then the most appropriate form of data collection must be decided. Data about visitors may be collected via:

- visitor monitoring techniques eg. counters, registers
- observation
- interviews
- off-site survey (telephone, postal, interviewer-administered, self-completion)
- on-site survey (interviewer-administered, self-completion)

An off-site survey may target visitors; obtaining their addresses, for example, from a visitors book. Alternatively the target population may be the public, which could include some visitors to a particular site. One option is to utilise already existing surveys (eg. NZ Tourist and Publicity Department).

Choice between the different options, should consider:

- type of information -simple descriptive factors or attitudes/ motivations
- amount of information required
- timing of data collection -periods of year when the information is required
- from whom is the information to be collected
- location(s) to which the data apply (local, regional, national)
- time, personnel and funds available

Be aware that it is deceptively simple to opt for a new visitor survey. The time and costs however are considerable and all alternatives should be carefully considered.

The following sections focus upon on-site questionnaire visitor surveys. If a different method of data collection is chosen, then refer to the Selected Bibliography for suitable reference material. (eg. Gardner 1978)

5. QUESTIONNAIRE DESIGN

5.1 Introduction

This section presents information on question formulation and design.

The type of questionnaire discussed here is used for on-site visitor surveys (self-completion or interviewer administered). Postal and telephone-administered questionnaires require specific types of design, for which the reader is referred to other literature (see Selected Bibliography).

5.2 Question Formulation

From the written statement of objectives (Section 3) each required item of information must be turned into a question. Examples of information items include visitor age, activities undertaken, facilities used.

Two steps are required:

(i) choice of question strategy
- open-ended or closed question
- single question or a sequence within a filter system;

(ii) formulation of the question wording.

5.2.1 Choice of Question Strategy

Open-ended and closed question strategies have different purposes, and each can be designed in different ways. The following summary should assist with the correct choice of question strategy and question design.

(a) Open-ended Question

Purpose:

- exploratory technique
- to discover what ideas people have on particular matters
- to provide insight into an issue
- to determine factors for later quantitative survey
- not for quantitative assessment of factors

Examples of open-ended designs:

(i) Simple open-ended question:

What do you like about the visitor centre?

FOR INTERVIEWER-ADMINISTERED QUESTIONNAIRES ONLY:-

(ii) Open-ended questions with clarification:

What do you like about the visitor centre?
What do you mean by 'the colour'?

(iii) Open-ended question with probing:

What do you like about the visitor centre?
Is there anything else you like about it?

(b) Closed Question

Purpose:

- quantitative 'head counting'
- use as a filter to clear the way for asking an open-ended question
- use when all possible responses are known

Examples of closed question designs:

(i) Yes/No: Did you travel to Mount Cook village by car

☐ Yes
☐ No

(ii) Check List: How did you travel to Mt Cook Village

☐ Car
☐ Bus
☐ Motorbike
☐ Other (Please specify) _____

(iii) Ranking Scale: What is your opinion about the following statement:

- More Campsites should be provided

☐ Strongly agree
☐ Agree
☐ Neither agree nor disagree
☐ Disagree
☐ Strongly disagree

(iv) Verbal Numbers Scale : Please mark on the line below your opinion of the condition of the road to Mount Cook Village.

VERY BAD 0 1 2 3 4 5 VERY GOOD

(v) Area Scale : If you had to pay $5.00 to enter the visitor centre, how likely are you to visit it?

(vi) Pictorial Scale: Which of the following faces best describes your satisfaction with the talk today?

Notes about Closed Question Designs:

(ii) Include a don't know category whenever it is relevant.
(iii) Provide an other category at the foot of a check list and provide space for a description.
(iv) For interviewer-administered questionnaire, use with the factors written/drawn on them, so the respondent can see all factors.

(c) Filter Systems

As the name suggests, questions should be designed wherever applicable to filter out out respondents who are not meant to answer following questions.

Example: Are you travelling alone?
IF YES go to Q4
IF NO how many people are there in your group including yourself:____

Care needs to be taken with filter systems to confusion to respondents.

5.2.2 Formulation of the question wording

Principles:

AVOID

- unfamiliar or difficult language
- negative words
- qualifying clauses at the end of questions
- a question that the respondent can start to answer before the question has been fully read
- two questions in one
- questions that invite replies in terms of what respondents 'usually do' e.g. When do you usually visit the park?
- leading questions eg. I think this picnic site is very nice -what do you think?
- questions that call for a lot of effort by the respondent e.g. memory dependant questions, questions involving calculations
- broad concepts eg. the government, children
- questions that give long alternatives as a choice of answer.

IN GENERAL - Keep Questions SHORT --- SIMPLE --- CONCRETE

5.3 Standardisation

Appendix 1 presents standard question designs for frequently asked questions. These questions have been designed to correspond with NZ census information as much as possible, to allow comparison with census data.

5.4 Notes about Interviewer-Administered Questions

(i) Use visual aids as much as possible e.g. showcards for closed questions.

(ii) Train interviewers in order to interviewer bias. Particularly beware of :

- deviations from question wording
- incorrect use of visual aids.

5.5 Questionnaire Design

Once the individual questions have been formulated, the question order and design of the questionnaire must be considered. The correct question order relies on commonsense and a few general principles:

- difficult questions towards the end
- demographic information last (or first)
- keep filter systems simple
- avoid lengthy questionnaires

Use explanatory sentences or paragraphs to link question sequences:

e.g. The following questions are about yourself and your group. This information will help us understand what sort of people use the park.

All questionnaires should have a covering letter or explanatory statement. This should explain:

- why the questionnaire is being conducted
- who is conducting it and for whom who should fill in a questionnaire
- where the questionnaire should be filled in
- how to return the questionnaire
- contact person for comments/enquiries
- confidentiality of information

The use of coloured paper, maps, pictures and other interest-catching presentations may encourage response. Prizes may also be offered.

The questionnaires themselves may be produced in booklet form or as stapled, photocopied sheets.

5.6 Conclusion

By considering the design options and following the principles presented in this section, the first draft of a questionnaire can be prepared. It is <u>always</u> advisable to then discuss the questionnaire with an expert in questionnaire design. A good questionnaire is crucial for the collection of high quality data.

The Department of Statistics provide advice on questionnaire design as part of their survey assessment procedures (see Section 8).

6. SAMPLE DESIGN

This section is largely taken from Recreation Site Survey Manual (Tourism and Recreation Research Unit (TRRU), 1983).

The sampling procedures discussed in this section relate to

(i) interviewer-administered surveys

and/or

(ii) personally distributed, self-completion surveys, ie. respondents approached and requested to take a questionnaire for later completion.

6.1 Definitions

An on-site visitor questionnaire survey is designed to provide information about the characteristics of the visits made to a site during a specified period of time -the survey period. The information about the visits is collected from the individuals making the visits. As it is not usually practicable to collect information from all individuals on every visit, a limited number of individuals (the sample) are selected to act as representatives of all those making visits during the survey period. An on-site visitor questionnaire survey is therefore a sample survey.

The selection of the sample is of paramount importance if the results of the survey are to be accurate and representative of visitors as a whole. Information is collected from a sample of persons who are the sampling units.

- the sampling unit is the visit, or more accurately the person-visit.

The sample provides information about the total survey population -the persons under investigation.

- the survey population is the sum total of visits made to a site during the survey period.

A visit, or person-visit, is a single attendance at a recreation site by an individual for purposes of recreation.

Each visit is treated as a separate occurrence, whether it is made by a single person visiting the site once during the survey period, or whether it is one of a number of visits made by the same person.

A visitor is an individual who makes a visit to a recreation site. The visitor provides the information collected in the survey. A visitor may make a single visit during the survey period or many such visits.

The visit, rather than the visitor, has been deliberately chosen, as it is assumed that the number and nature of all visits is the key information requirement, regardless of how often individuals are visiting. Frequency of visit can be investigated as part of the survey.

The survey population and sampling unit must be clearly stated, as it influences the sampling procedures selected.

6.2 Types of Sampling Method

Samples which give the most accurate and reliable methods are those which are selected using a probability sampling method. This means that every sampling unit which makes up the sample would have an equal, or calculable, chance of being selected, and would, therefore, be truly representative of the survey population. In order to use a probability sampling method it is necessary to have prior information about all the members of the survey population -a sampling - from which to select the sample.

Information about the number and characteristics of visits made to the site should therefore be collated. For example: numbers using different park access points, accommodation types, tracks. In many cases, only minimal (if any) information will be available. Indeed, often an objective of the proposed survey is to collect such information. In this situation, whatever information and local knowledge is available should be used to construct a sample, and once collected, the sample data adjusted to correct for bias.

To adjust the sample so that it is truly representative of the survey population, the sample data are subject to weighting and loading procedures:

(a) Weighting corrects for any variation between the characteristics of the individuals interviewed and the characteristics of the whole survey population. Thus, for example, if half of the visitors selected for interview on any one day were found to be travelling by car, but counts and observations of the visitors revealed that, in fact, three-quarters actually travelled by car, it would be necessary to adjust, or weight, the sample data so they reflected the true proportion of those travelling in this way. Weighting thus corrects for any differences which occur in the sampling fractions, that is the proportion of the survey population that is sampled. Differences in the sampling fraction may occur through time and at different locations as visitor flows vary.

(b) Loading is a process of grossing up the sample by a factor which takes account of the total number of visits made to the site during the survey period. In some cases it will not be possible to record the total number of visits made to a site, so the data cannot be loaded. Weighting, however, is essential to ensure the accuracy of the information.

Weighting and loading form part of the data preparation and analysis process and are described in Section 9 -Data Preparation briefly and in detail in TRRU (1983).

6.3 Selecting the Sampling Unit

Selecting the sampling unit ie., the person making a visit who is to be surveyed, involves three main decisions: when to contact the person for survey, who to and when and where to survey them.

Step 1: When to contact the person for survey -selecting the survey days.

To maximise the use of resources the survey may be conducted on a limited number of survey days during the survey period. The first step is to select these days.

The use of sites often varies over time and such variations should be taken into account. The survey days should therefore include:

- Weekdays
- Weekend days
- Days within and outside school holiday periods
- Days within the season of peak use
- Days selected from off-peak periods.

Days on which special events occur and 3-day weekends should usually be avoided, as these are most likely to produce results atypical of the pattern of site use over a longer period. Alternatively, treat such days as a special 'use period', eg. target a survey day at Labour Weekend as high use, the rest of October as low use.

The main objective in selecting the survey days is to divide up, or stratify, the sample over the survey period to ensure interviews are conducted on each of the different types of day listed above. It must be remembered that the results apply only to the survey period, survey results cannot be extrapolated outside this period with any degree of confidence. There are, for example, likely to be strong contrasts between those visiting recreation sites in the summer and in the winter. Individuals interviewed during the summer, therefore, could not be taken as being representatives of those visiting during the winter.

The number and character of the survey days will depend on the aims of the survey, and also on the resources available. Experience indicates, that to investigate adequately fluctuation in the levels and characteristics of use throughout the summer period, a minimum of 8 survey days are required, equally divided between weekdays and weekend days. If it rains heavily and persistently on one of the chosen days it may be impractical to conduct the survey and the survey may need to be cancelled. Whenever this occurs, an alternative day of the same type should be selected.

In addition to the date of the survey, the duration of the survey days must also be determined. The length of time spent in the field on any particular survey day should coincide with the period during which the majority of use takes place; very low levels of use do not justify the cost of keeping surveyors on-site.

The best means of obtaining an intuitive feeling for the patterns of visits is tapping local knowledge.

Step 2: Who to survey - selecting the respondents

The next stage is to select the individuals who are to be surveyed -the respondents. Only those individuals who are visiting the site for purposes of recreation are eligible. Anyone working at the site, visiting it for business purposes or living within the site is not part of the survey population and should not be surveyed. A record must be kept of people excluded from the survey on these grounds to establish what proportion of the total visits they account for (so they, in turn, can be excluded from the calculations of the total number of recreational visits). This information is recorded by the interviewers and a form has been designed for this purpose. (See Appendix 2).

The eligible age of respondents must be chosen. Unless survey objectives dictate otherwise, 15 years and over is recommended.

Some individuals may not wish to participate in the survey and their wishes must be respected. People who refuse to participate are termed non-respondents. A record must be kept of the non-respondents (Appendix 2 is also designed for this purpose) and the level of non-response

reported along with the survey findings. Non-response biases the sample data, but experience has shown that in recreation site surveys non-response rarely exceeds 10 percent and so any bias is insignificant. Anyone who has been surveyed on a previous survey day is eligible for survey again. If someone who has been previously surveyed is selected again, a request should be made for a second survey explaining that information is also required about their visit that day. If the sampling unit is the visitor rather than the visit, then each visitor should only be surveyed once.

Step 3: When and Where to survey the respondents.

As important as selecting who should participate in this survey is the choice of when and where they should be surveyed during their visit.

Logically, if respondents are to provide comprehensive answers to the questions about their visit then the optimal moment to interview them is as they leave the site, ie. when their visit is at an end. Often, however, the survey must be conducted during the respondents visit. In this case, it is important to remember that the information collected relates to visitors part-way through their visit.

Survey sights should be chosen based on local knowledge of visitor movements. Ideally all exits should be covered, however with multi-entry and exit points, high-use exits only may be chosen. Where it is impractical to cover exit-points (eg. remote backcountry parks) then the survey sites should be chosen within the park, based on a selection of types of user and areas used (eg. visitor centres, car parks, tracks). In such cases, the survey takes place during the visit.

It is recommended that the respondent is selected on a next-to-pass basis. That is, when one interview is complete the next person to pass the survey point is requested to take part in the survey.

This method the utilisation of surveyors and minimises interviewer bias in the choice of individuals for survey, ie the surveyor does not have to choose who to survey.

Any differential sampling rates which arise from the use of this procedure can be adjusted for in the weighting process to eliminate under-or over-representation for particular visitors.

Preventing interviewer bias in selecting the respondent is essential or the sample will not be representative. This can sometimes be difficult, for example, the leader of a group of visitors may often present herself or himself for interview thereby producing a self-selected sample. To avoid this the interviewer should always select the next person to pass the survey point and, if necessary, explain why they have chosen that particular person for the survey. If the next group of visitors to pass the survey point is travelling in a car, then the respondent should be selected on the basis of random procedure. Experience has shown that using the birthday rule in these circumstances (selecting the next person to have a birthday as the respondent) provides a simple and satisfactory method of selecting an unbiased sample.

Use of the next-to-pass method and the birthday rule, should result in the choice of one individual from each group who are visiting the park together. This is particularly important where individuals within the same group are likely to have similar responses, as it avoids over-representation of any one group. From discussion in this section, it should be clear that leaving questionnaires in a pile for visitors to pick up will result in a biased sample. This approach is not a satisfactory method of questionnaire distribution.

6.4 Sample Size

Selecting the size of sample is one of the most important questions relating to site surveys. All results from sample surveys are subject to sampling error, in other words, the difference between the values recorded in the sample and what the actual values would have been if everyone in the survey population had been surveyed. The larger the sample size the smaller will be the sampling error, as the closer the sample approximates the total survey population. In essence, the sample size is a compromise between what is statistically desirable and what is practical in terms of resources. There are statistical guidelines to help in this decision. The size of the sample should reflect the variability of the information being collected and the complexity of the analyses required.

In selecting the appropriate sample size it is usually best to work from the bottom upwards, that is, to identify the number of sub-groups, or sub-samples, for which reliable analyses are required. Once this is done the conventional wisdom of statistical texts is to recommend that each sub-sample should contain 50-100 members (Moser and Kalton, 197 1).

Thus, if the analysis requires information about visitors for three different factors, for example:

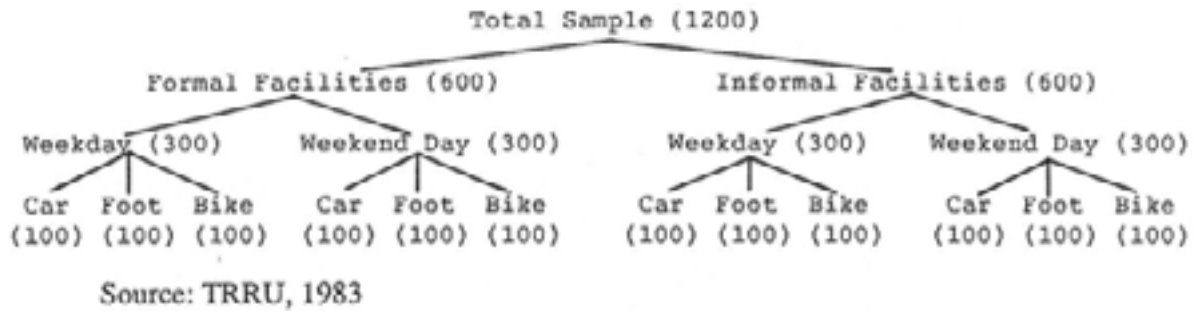
a) type of visitor (those using formal as against informal facilities);

b) day of the week (weekday as opposed to weekend visitors);

c) type of transport (whether car, bicycle or on foot);

Then the sample should ideally be constituted as in Figure 1.

Figure 1 : Determining Sample Size



Source: TRRU, 1983

In Figure 1, at the lowest level, a division into subgroups produces 12 classes, and, if each is to contain one hundred respondents, then (assuming these to be spread evenly across the various classes) a minimum sample size of 1200 would be required.

In practice this even spread is seldom achieved, and certainly in the example given here, previous studies would indicate that a smaller number of visitors would participate in formal, as opposed to informal, activities. Bearing this in mind, it would be necessary to adjust the size of the sample upwards to cope with this eventuality. Results of previous surveys usually provide the guidance required to the sample sue for the survey.

It is also possible, given a particular sample size, to determine the range of error which will surround the analytical results calculated. Further details on calculating sample error see 1983. The main points to note about sample error are:

(a) Small sub-sample means the range of sample error is large, therefore estimates should be made quite explicit in any interpretation and presentation of survey results.

(b) Sampling error decreases as sample size increases therefore a large sample will give more accurate estimates

(c) The desirability of obtaining greater accuracy of results by increasing sample size must always be balanced against the inevitable escalation in the cost of the survey that will result.

7. PRE-TESTS

Questionnaire design and sample design must be pre-tested and a pilot survey is recommended. A pilot survey involves a thorough testing on a relatively small number of people on-site.

Pre-testing of the questionnaire can be done by holding mock interviews with friends and workmates. Check for:

- question comprehensibility
- length of questionnaire/interview
- order of questions
- respondent burden
- clarity of instructions
- missed questions

Modify the questionnaire in light of results. The questionnaire can be tested thoroughly on the intended audience in the pilot survey. The sampling procedures can be tested by the pilot survey. Look for;

- workability of your sample selection plan
- response rate
- costs

Where no changes are made to the questionnaire or sample design (or only minor sampling adjustments) following the pilot survey, the data from the pilot survey can be used in later analyses. Otherwise it should be disregarded.

8. DEPARTMENT OF STATISTICS SURVEY APPROVAL (FOR GOVERNMENT DEPARTMENTS)

This section summarises information presented in the Department of Statistics Handbook on Survey Procedures. Copies are available from the Department of Statistics for $18.50 (at time of writing).

8.1 The Requirement

Under the Statistics Act 1975, approval of the Minister of Statistics must be sought and obtained before any government department carries out a new statistical survey or makes a substantial alteration to an already existing survey (Section 6, Statistics Act 1975). This requirement covers visitor surveys, whether they be conducted by the department or for the department on contract.

This section describes how to prepare a Survey Planning Proposal which is required to obtain approval.

The Survey Planning Proposal has three main purposes:

a) To formally report to the Government Statistician the intention to conduct a survey;

b) To provide information about the planned survey which may be disseminated to other departments;

c) To form the basis of the assessment needed to meet the objectives of the Statistics Act: avoiding duplication, minimising response burden, ensuring technical quality of the proposed methodology, and ensuring that the proposed survey will meet its intended objectives. This assessment is needed before the Government Statistician can make a recommendation on the survey to the Minister of Statistics.

Furthermore, the Survey Planning Proposal helps the department to clarify its own ideas and proposals. For this reason preparation of a Survey Planning Proposal will also be useful to non-governmental organisations (who do not require Minister of Statistics' approval).

8.2 Preparation and of the Survey Planning Proposal

1. The Survey Control Section, Department of Statistics appreciate notification in advance that a Survey Planning Proposal is in preparation and will be submitted to them. This assists with their planning and delays in processing proposals.

2. The proposal should be prepared using the schedule presented in Appendix 3.

3. The proposal should be sent to:

   Survey Control Section
   Department of Statistics
   Private Bag
   Wellington
   (Ph: (04) 729-119)

4. It should be accompanied by:

   (a) the questionnaire and/or form and any covering letter of introduction, etc, to be used in the survey. If the final draft of the questionnaire is not available the Minister of Statistics may be asked to approve the survey subject to the Govemment Statistician being satisfied with the statistical standards of the final questionnaire. In this situation, a draft questionnaire must be included with the Survey Planning Proposal and the final questionnaire submitted as soon as available.

   (b) a completed SC/00/07 form (see Appendix 4). This form is the sponsoring departments formal submission to the Minister of Statistics (through the Government Statistician). The SC/00/07 must be signed by a Deputy Director-General or the Director General. The SC/00/07 may be submitted to Statistics after the Survey Planning Proposal if desired.

5. The Survey-Planning Proposal must be submitted in sufficient time to allow modification (if necessary) before the intended field work. The Department of Statistics require about 3 weeks to vet a proposal, however, this is variable and it is advisable to check with Statistics if time is short. An urgency fee is payable for urgent jobs.

6. Submission of the Survey Planning Proposal and questionnaire is the responsibility of the sponsoring department. Where all or part of the project is undertaken on contract, the contract should provide the information needed to the sponsoring department.

7. The Government Statistician will forward the SC/00/07 in the same form as it is received, together with his/her report, to the Minister of Statistics.

8. The Department of Statistics will advise the sponsoring department of any matters that are unsatisfactory. Discussion can then take place with Statistics to rectify the problem(s).

9. On receipt of the Minister's decision the Government Statistician will immediately notify the Department.

8.3 General

1. The Survey Control Section may be contacted at any point in the approval procedure for advice or assistance. At the time of writing Statistics provided 6 hours of their time free of charge (this includes the time taken to assess the proposal) and thereafter charge. Advice gained early on may save time (and money) at a later stage.

2. One copy of the final report prepared from the survey must be submitted to the Survey Control Section.

3. Each government department has a Statistics Liaison Officer, who will keep departmental staff informed of any matters concerning the Department of Statistics survey approval process. Currently the officer is the Social Scientist, Science & Research Directorate.

9. DATA PREPARATION

This section summarises the equivalent chapter of Recreation Site Survey Manual (Tourism Recreation Research Unit, 1983).

9.1 Introduction

Most visitor questionnaire surveys justify computer analysis and this method of data analysis is discussed in the following sections. Holerith cards are not recommended.

Various types of computers and statistical packages are available for data manipulation. The sections in data preparation and data analysis present principles and leave the details to be worked out between analyst and machine.

9.2 Data Input

There are 4 steps to prepare the questionnaire data for input:

a) clerical editing
b) coding
c) computer entry
d) computer data check

a) Clerical Editing

As soon as possible following questionnaire completion, preferably while the respondent is still present, questionnaires should be checked for completeness, legibility and correct understanding of instructions. With interviewer-administered questionnaires, immediate follow-up with the interviewer can be fruitful.

b) Coding

Coding is the process whereby the written answers on questionnaires are converted into computer codes (numeric or alpha-numeric).

Coding closed questions is straight forward. Assign a unique code to each variable (or factor).

EXAMPLE: Question on of transport.

private car	1
hired car	2
tour bus	3
public transport (bus)	4
motorbike	5
other	6

Check through responses in the other category prior to coding, as it may be useful to break this variable down into separate codes for frequently mentioned variables.

EXAMPLE:	Instead of other	6
use	Bicycle	6 (if occurs frequently)
	Other	7

Some closed questions will be self-coding.

EXAMPLE: Number in group (Codes 01 -99)
Gender (Codes M -F).

Open-ended questions require some categorisation of responses. It is suggested that the coder reads through responses to get a 'feel' for categories and so an initial categorisation can be designed.

Categories will be self-generating as coding proceeds, as any new factor that does not fit an existing category will form its own category. Categories can then be assigned codes as for closed questions.

EXAMPLE: Question -What do you like about this site?

Responses	Possible Categories	Codes
It's nice and quiet	Peace and Quiet	01
It's peaceful	Peace and Quiet	01
It's in the middle of nowhere	Remoteness	02
Its remoteness	Remoteness	02

The degree of categorisation depends on the intended use of the data. In the first instance, avoid gross reduction to a small number of categories. Later amalgamation can take place as necessary; however once lost, detail cannot be regained without complete recoding.

Note any ambiguities or challengeable decisions so they can be discussed in the report.

Missing data should be assigned a code (eg. 99 or 999). This allows non-response to be differentiated from coding oversights.

Codes may be written straight onto questionnaires or else coding sheets may be used (like modified graph paper with one character to a box).

If more than one person is coding the questionnaires, initially they should both code the same questionnaires so discrepancies between them can be checked and overcome. This is particularly important where coding open-ended questions.

c) Computer

The form of data entry will depend on the computer and program used.

d) Computer Data Check

A second check of the data at this stage ensures data accuracy. This includes checks on:

- valid codes ie. check that codes do not fall outside the range set up for that variable;
EXAMPLE: 9 would be invalid for a variable with codes 1 - 6 (unless missing values had been assigned this code).

- filter checks ie. check that codes are allowable.
EXAMPLE: if Q1 code was '2' for NO which meant the respondent was to skip Q2, check that Q2 was coded missing.

Correct any errors. It may be necessary to refer back to the original questionnaire. For this reason, questionnaires should be numbered and stored in sequence.

9.3 Data Definition

This step identifies the variables by assigning names to the codes. How this is done will depend on the computer program used.

An initial frequency analysis can then be run (see Section 10 -Data Analysis for explanation). This serves to:

(i) check the data for unusual or unexpected frequencies
(ii) provide a guide for later analyses.

9.4 Weighting and Loading the Data

The precise nature of the weighting and loading processes will vary from one set of survey data to another to account for the specific characteristics of use at a site, but the overall approach described here is generally applicable.

9.4.1 Weighting the data

Weighting the data is essential and ensures that the results of analysis are representative of all those making visits during the survey period. The survey method recommended invariably results in different sampling fractions (the proportion of the population sampled) being obtained on different survey days and at different interview points within the site. For example, if more visitors visit the site on a day with good weather then more visitors will probably be interviewed on these days. Similarly, at exits used by very few visitors most of the visitors would probably be interviewed on a survey day, while at a very busy exit a much smaller proportion of visitors would be interviewed. Weighting corrects for these differences and ensures that analysis is undertaken to accurately represent the correct number and type of visits.

Weighting the data is carried out on the basis of the information collected on each survey day. It is recommended that the following factors are taken into account in the weighting process:

(a) the survey day;
(b) the interview point;
(c) the time of day;
(d) the type of transport used to reach the site.

The first steps in the weighting process are;

(a) to determine the number of questionnaires/interviews which fall into each of the categories above,
(b) to determine the actual number of visits in each category. These figures are derived from the counts and observation undertaken on the survey day.

9.4.2 Loading the data

Weighting ensures that the sampled visits are representative of all the visits made on a particular survey day; loading the data on the other hand ensures that the sampled visits are representative of the visits through the whole survey period. Again, the procedure involves the number and nature of the sampled visits and the number and nature of the actual visits. It is recommended that the data are loaded on the basis of:

(a) the type of day -weekday versus weekend day;
(b) the weather;
(c) the mode of travel used to reach the site;

Again a matrix is constructed to determine the number of visits of each type.

Further details are in TRRU 1983.

The weights and loading factors calculated for a survey are specific to the data from that survey and cannot be applied elsewhere.

10. DATA ANALYSIS

10.1 Types of Analysis

Only those analyses which are required to achieve the objectives of the survey should be out. Even if extra data has been collected, do not be tempted to waste more time and money by analysing unnecessary data.

Two types of analyses are commonly used:

- descriptive analysis
- analysis derived from complex statistical procedures.

Basic descriptive types of analysis are discussed in this section. The reader is referred to statistical texts for the more complex analyses (eg. Dixon and Massey 1983).

10.2 Types of Descriptive Analysis

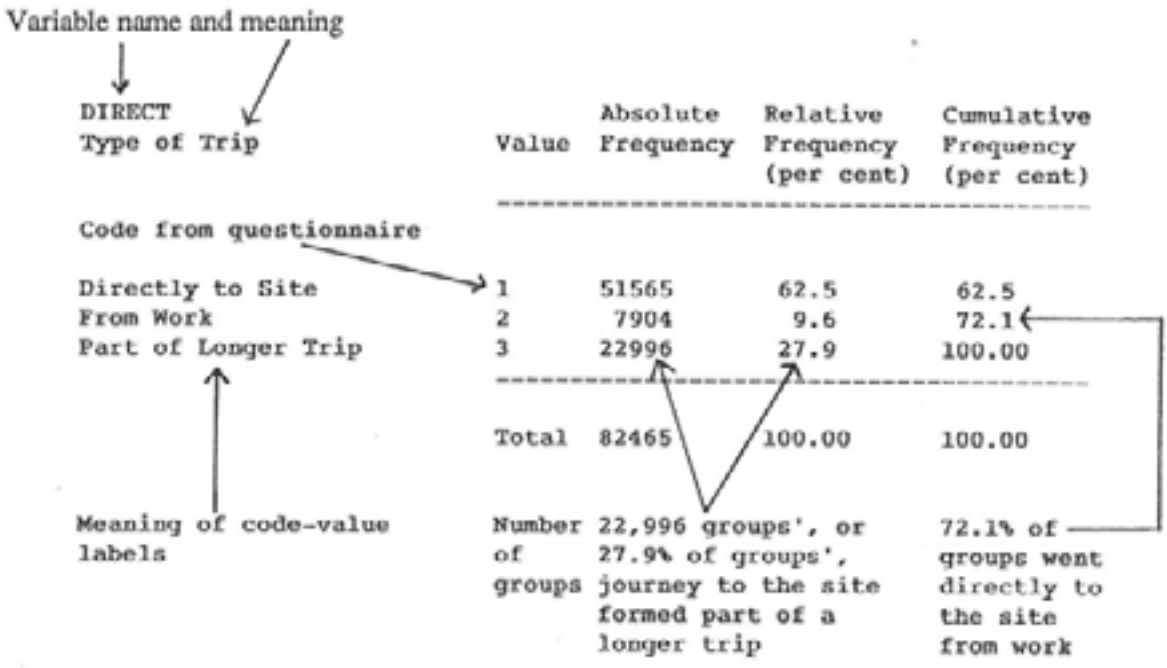
Descriptive statistics provide information about the distribution of variables. The type of calculation used depends on the form of the data. For example, means, medians and standard deviations can be calculated for interval and ratio data; frequency counts for categorised data.

10.2.1 Frequency Distribution

Frequency counts are commonly used for data from visitor surveys where responses are discrete categories. Figure 2 shows a typical computer output of a frequency distribution for a question on the type of trip to a site.

Figure 2: Example of a one-way table

Frequency Distribution of Direct (Type of Trip to Site)



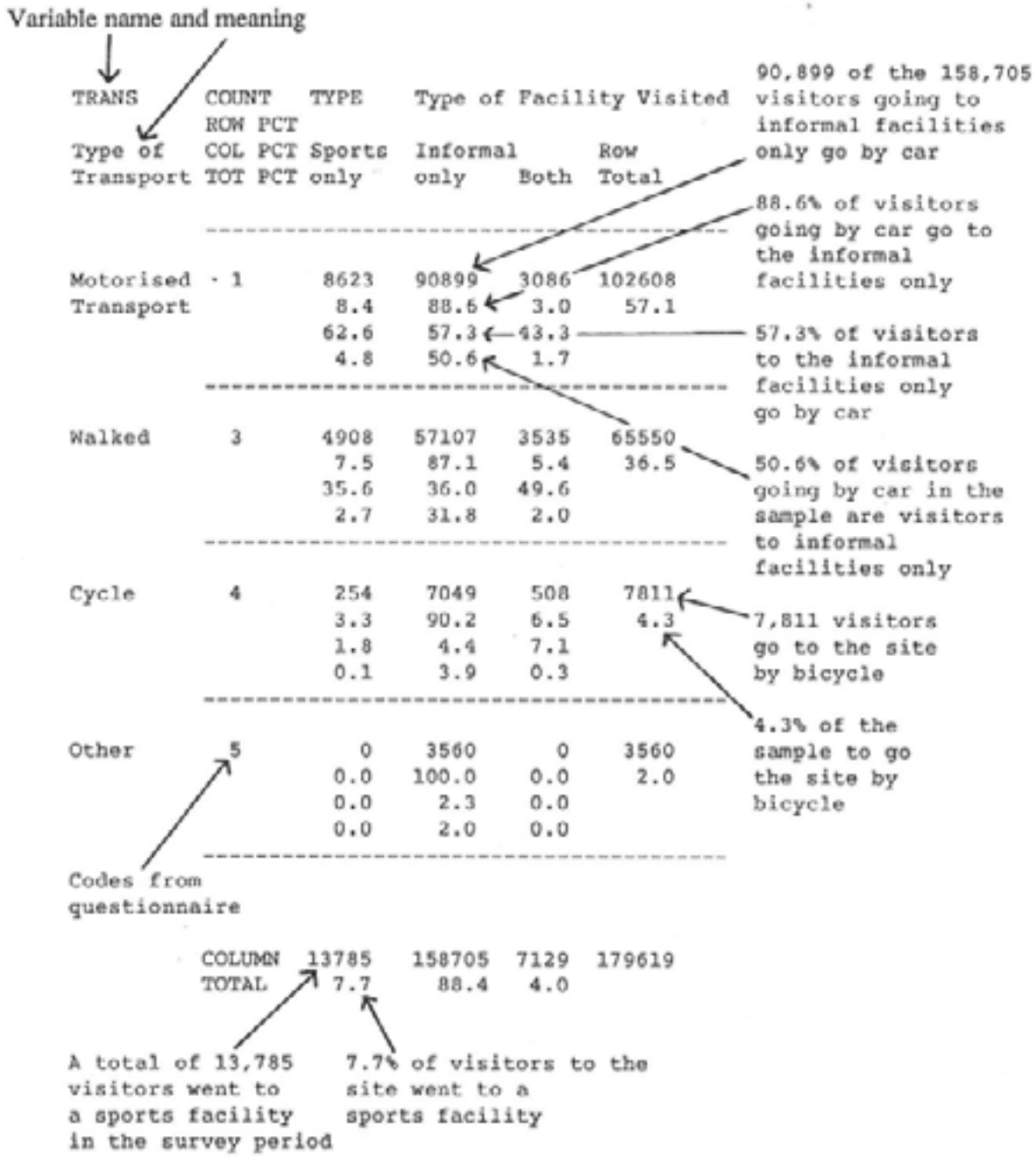
Source TRRU 1983

10.2.2 Two-way Cross-Tabulation

To analyse the relationship between two different variables, a cross-tabulation can be used. Figure 3 presents an example of this analysis showing the relationship between the type of transport used to reach a site and the type of facility visited.

Figure 3 : Example of a 2-way cross-tabulation

Cross-tabulation of TRANS (Type of Transport) with TYPE (Type of Facility Visited)



Source: TRRU 1983

10.2.3 Three-way Cross-tabulation

Extending the 2-way cross-tabulation (x-tab) to three variables, gives a 3-way relationship. An example is:

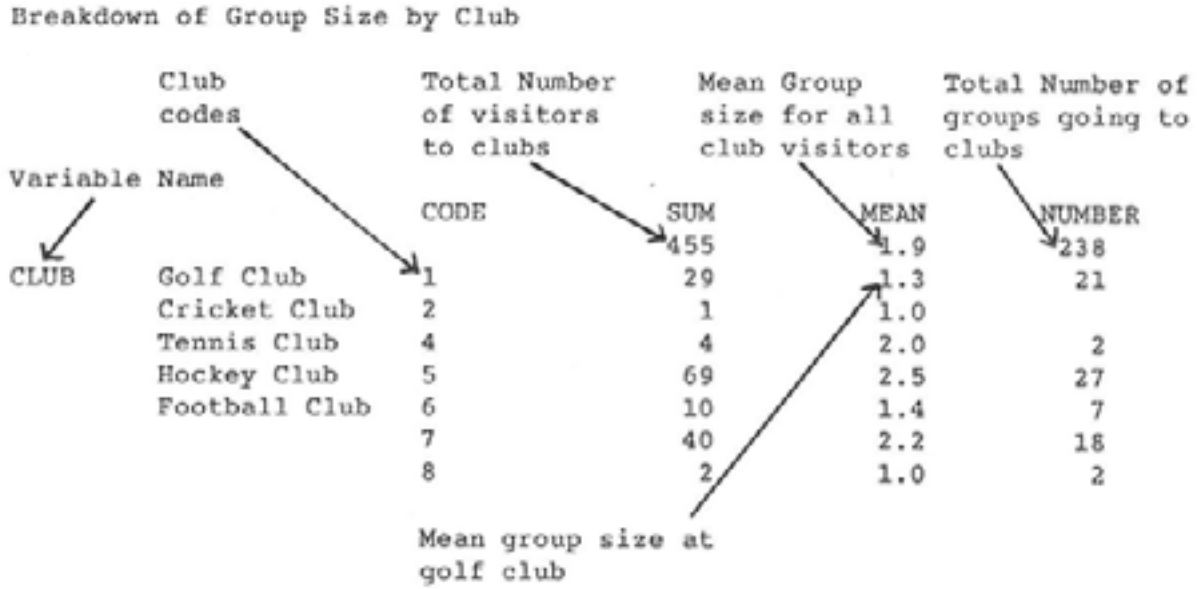
- 2-way x-tab of transport used and type of facility (as in Figure 3) analysed only for males
- the same 2-way x-tab except analysed only for females.

The result therefore is a series of 2-way cross-tabulation tables for each category of the third factor.

10.2.4 Breakdown

Finally, another way of examining the relationships between variables is to obtain a breakdown of the means for sub-sets of the data. Figure 4 shows the output from a breakdown of average size of group at different sports clubs at a site.

Figure 4: Example of a statistical breakdown table



Source: TRRU, 1983

10.3 Analysis Specification

In cases where another person is doing the analysis, the analyses required will need to be specified. Analyses are usually specified in relation to the variable names used to describe each piece of coded information; for example;

TRANS (Mode of Transport)	X	JOURNEYTIME (Journey Time)
CAR (Access to a Car)	X	TRANS (Mode of Transport)

It is also important to state the base upon which the analysis is calculated. The information collected in the survey can be analysed in terms of visits (ie. person visits) or groups (groups of visitors). The table in Figure *2* has the number of groups as its base, while the total number of visits forms the base of the table in Figure 3.

The cross-tabulation analyses specified can be set out in a specification table; which provides a convenient record of the analyses requested. The table contains a list of the information in the questionnaire and the variable names down the side, and across the top the names of the variables this information is to be related to; the latter can be termed the standard descriptors and would include variables such as socio-demographic characteristics (age, gender, social class, marital status, educational status, employment status) and other key characteristics relating to the visit (group composition, frequency of visit, mode of transport, origin of group). An example of a specification table for an initial set of analyses from the extended questionnaire is shown in Table 4.

Table 4 :Specification table for preliminary analyses from extended questionnaire

Question number	Information	Variable names	Standard Descriptors: ORIGIN	LENSTAY	JOURNEYTIME	DIRECT	TRANS	ENTERPT	DISTRAVEL	REGULAR	VISITFREQ	WEEK	GROUPCOMP	GRPAGE	ED	CAR	EMPLOY	SC	HHOLDCOMP	GROUPC
	Interview Point	INTP					x	x												
11	Origin of users	ORIGIN+			x		x		x											
12	If on holiday	HOMEORHOL																		
7 & 8	Starting, arrival and departure times	LENSTAY+			x	x														
		JOURNEYTIME+																		
9	If direct route	DIRECT			x															
10	Transport type	TRANS			x				x							x		x		
13	Entry point	ENTERPT	x				x													
		DISTRAVEL+			x															
4	Areas visited	ZONES		x						x			x							
2	If regular visitor	REGULAR											x		x		x	x		
3 & 4	Frequency of visit	VISITFREQ+	x	x					x											
5	Days of week visit	VISITDAYS																		
		WEEK+	x										x		x		x	x		
15	Group Composition	GROUPCOMP+																		x
17	Activities participated in	ACTIVITY																		
	Number of activities participated in	ACTPERSONC																		
18	Other sites visited	OTHERSITES																		
19	Names of other sites	SITENAME																		
20	Reason for visiting																			
21	Likes	LIKES	x						x	x		x	x	x				x		
22	Dislikes	DISLIKE	x						x	x		x	x	x				x		
23	Improvements wanted	CHANGES	x						x	x		x	x	x				x		
15	Number in Group	GROUPC											x							x

x Indicates a cross tabulation is requested
\+ Indicates a generated variable

Source: TRRU, 1983

10.4 Selecting analyses

A framework for analysis can be constructed by first structuring the collected in the survey under a series of broad headings relating to the objectives of the study. In order to provide a description of site use, it is recommended, on the basis of experience, that the following headings are employed:

(a) the number and distribution of visits;
(b) the characteristics of the visit;
(c) the characteristics of the visitor;
(d) patterns of recreational activity; and
(e) the views of the visitor.

These headings may also be used to form the basis of a report. The next step is to pose a series of questions in relation to each heading and to determine the type of analysis required to answer the questions. To illustrate this process, a series of questions and the type of analysis required relating to the characteristics of the visit section are set out below:

Question	Analysis
1. How do groups travel to the site?	Frequency counts for different modes of transport
2. How does the type of transport relate to journey time?	Cross-tabulation of mode of transport by journey time
3. Does size of group vary with type of transport used?	Breakdown of average group size by mode of transport
4. Does the availability of a car affect the mode of transport used?	Cross-tabulation of access to a car by mode of transport

This process of interrogation can be obtained until the range of information required to meet the set out for the study has been obtained.

11. REPORT

The final stage of the survey process is to present a report of the results. The report should include:

- the statement of objectives
- description of the site
- survey methodology: sampling procedures, questionnaire distribution and response rate, weighting of data, data analysis
- copy of the questionnaire and other forms used
- description of the results
- discussion of the results in relation to the objectives and highlighting management implications
- critique of the survey methodology and suggestions for future survey improvements.

It would also be useful to document costs of the survey and staffing requirements.

Use maps, diagrams, figures and tables wherever applicable. Use a uniform table format throughout.

Do not forget to send a copy of the report to the Department of Statistics. Also place copies in relevant libraries so that the results may be accessible to others.

12. SELECTED BIBLIOGRAPHY

Cochran, W.G. 1977 (3rd ed.) Sampling Techniques, Wiley, New York.

Department of Statistics. 1981. Handbook on Survey Procedures, Department of Statistics, Wellington.

Dillman, D.A. 1978 Mail and telephone surveys :The total design method. Wiley, New York.

Dixon, W.J. and Massey, F.J. 1983 (4th ed.) Introduction to Statistical Analysis. McCraw-Hill, New York.

Gardner, G. 1978 (revised ed.) Social Surveys for Social Planners, Holt, Rinehart and Winston, Sydney.

Kish, L. 1965 Survey Sampling. John Wiley and Sons, New York.

Moser, C.A. and Kalton, G. 1971 (2nd ed.) Survey Methods in Social Investigation, Heinemann Educational, London.

Tourism and Recreation Research Unit, 1983. Recreation Site Survey Manual - Methods and Techniques for Conducting Visitor Surveys, E. & F. N. Spon, London.

APPENDIX 1: STANDARD QUESTION DESIGNS

The following questions aim to present a standard approach to frequently asked questions. The goal is co-ordination amongst visitor questionnaires (and recreational questionnaires generally), to achieve comparability between surveys.

The questions below are presented within categories but are not linked together as a questionnaire. Suggestions on further questions and improvements on the following would be helpful.

VISIT CHARACTERISTICS

1. How many times had you visited _____ park before this visit?

    - Never -this is my first visit
    - Once
    - Twice
    - Three to Five times
    - More than five times

2. Did you visit the _____?

    - Yes
    - No

3. Did you do any of the following while you were in the park? (Tick as many boxes as applicable).

    [List activities relevant to the park]

4. With whom are you visiting park?

    - By yourself
    - With family, or family and friends
    - With friends
    - With a club group
    - With a commercial group (eg. bus tour)
    - Other (please specify) _____

5. How long are you spending in park?

    - Day trip/less than 1 day
    - days
    - 3 – 5 days
    - 6+ days

TRANSPORT. ACCOMMODATION AND VISITOR MOVEMENT

1. How are you travelling to and from _____ park?

    - Private car
    - Rental Car
    - Tour Bus
    - Public transport bus
    - [Others applicable to the park eg. train]
    - Other (please specify) _____

2. Are you staying overnight in the park?

- Yes
- No

If YES, what accommodation are you using?

- Private home
- Hotel/motel
- Club lodge/hut
- Park hut
- Camping ground
- Freedom camping (outside camping ground)
- [List other accommodation types relevant to the park]
- Other [please specify] _____

3. Where did you spend your last night before arriving at the park? (Nearest town) _____

4. Where will you spend your first night after leaving the park? (Nearest town) _____

SOURCE OF INFORMATION

1. Through what sources, if any have you heard or seen information about _____ park? (Please tick the appropriate boxes).

- Films/television
- Newspaper; books; magazines
- Pamphlets; posters
- Radio
- Visitor centres
- Friends/relatives
- Other (please specify) _____
- Have not seen any information

VISITOR CHARACTERISTICS

1. In which age group are you?

- 0-14
- 15-19
- 20-29
- 30-39
- 40-49
- 50-59
- 60+

2. Are you:

- Male
- Female

3. What is your present marital/residential status?

- Single/never married
- Widowed/divorced/separated
- Married/living together
- Other (please specify) _____

4. Do you have children living with you?

- Yes
- No

If YES, are they:

- Pre-schoolers
- At school
- Other

5. What activity takes up the greatest amount of your week? Please tick one box only.

- Paid employment or self-employment (please specify occupation) _____
- Housework
- Volunteer work
- Unemployment
- Study
- Retirement
- Other (please specify) _____

6. What is your highest educational qualification?

- No school qualification
- School Certificate of equivalent
- University Entrance of equivalent
- Vocational or trade qualification
- University bachelor's degree/diploma
- Post-graduate university qualification
- Other, including part-degree

7. Where do you currently live?

TOWN OR CITY COUNTRY

8. Where have you lived most over the last ten years?

- in a city
- in a small town
- in a rural area

APPENDIX 2: NON-RESPONSE RECORD SHEET

NON-RESPONSE RECORD SHEET

NAME OF ORGANISATION
TITLE OF SURVEY
NAME OF SITE, YEAR

FIELD CODE
NO.

Site .... Date .... Interviewer ....

Interviewing Location ....

Please keep a record throughout the day of those you approach who fall into the following categories. Record number in group and mode of transport.

Time	Residents		Passing Through		Site Workers		On Business		Refusals	
	No. in Group	Mode of Transport	No. in Group	Mode of Transport	No. in Group	Mode of Transport	No. in Group	Mode of Transport	No. in Group	Mode of Transport

APPENDIX 3: CONTENT OF THE SURVEY PLANNING PROPOSAL
(From Department of Statistics, n.d.)

So that a comprehensive assessment can take place, information should be provided under each of the following headings. Each heading is accompanied by a description of the desired content.

In cases where significant changes are proposed to an already existing survey, the changes should be specified and the possible effect on historical time series statistics should also be described.

1. Administration

This section should include the title of the statistical survey, the sponsoring department and branch or division, and the name, address and telephone number of the person in the department to contact. Any contracting, subcontracting or contributive arrangements should be made explicit. The general nature and extent of any consultation with other departments or organisations and their involvement in the survey should be stated.

2. Objectives of the Statistical Survey

2.1 This section should describe the objectives of the survey, the main objectives being listed first. The objectives should be stated in terms of the question or research which gave rise to the need to gather information and should include a description of intended of the results of the survey.

2.2 List the main tables and cross-tabulations and indicate the nature of the reports or publications by means of which it is intended to publish the survey results.

2.3 Where the statistical survey represents part of a wider research programme for which data are collected, the role of the survey in relation to the programme should be outlined in order that the survey objectives can be placed in context. References to important background papers or publications should also be included.

2.4 Also in this section, details are required of the Government policy which necessitated the proposed survey.

3. Survey Population

This section should identify and define the population under study. Limitation in terms of geographic location, age, type (households, individuals, institutions, establishments, etc.), time and other characteristics should be stated. The size or estimated size of the target population should be given.

4. Topics to be Covered by the survey

The most recent draft of the questionnaire should be included, along with a statement as to whether the submitted questionnaire is a preliminary draft or final draft. The rationale for each section of the questionnaire should be provided as well as a definition of the concepts and terms used. If such a questionnaire is not available, a detailed description of the topics to be covered by the survey should be given.

5. Type of Survey

This sub-section should explain whether it is proposed to enumerate 100 percent of the population or a sample of the population and whether the survey is to conducted one-time only or repeated. In the latter case, the frequency of the data collected should be given. A statement should also be made as to whether participation in the survey is compulsory or voluntary.

6. Survey Frame

A frame is the list of units from which the list of respondents will be drawn. If the frame is available, its structure and source should be specified. If the frame is not available, the by which it will be obtained should be specified. Where the units of the frame are different from the units in the population, this should be noted. Any known inadequacies in the frame should also be noted.

7. Sample Design

This sub-section refers only to those surveys for which a sample is proposed to be drawn. The description of the sample design should specify:

a) the characteristics or variables used in stratification and any auxiliary information used in determining these variables;
b) whether sampling is single stage or multi-stage;
c) the sampling units at each stage;
d) the sample size and method of determination of sample size;
e) whether substitution will be employed for non-response and, if so, how this will be accomplished;
f) whether estimates will be based on weighted or unweighted (raw) data;
g) whether auxiliary variables will be used to adjust the estimates of population characteristics and the specification of these auxiliary variables;
h) the level at which reliable data is required (for example: national, regional);
i) the methods (if any) by which non-sampling error will be controlled;
j) whether sampling error will be estimated from the sample.

Comment as to the desired or expected accuracy of estimates and degrees of confidence should be included. It would also help if the calculations used to decide the sample size are included.

8. Field Procedures

8.1 This sub-section should describe the proposed method of data collection (for example: postal, personal interview, telephone interview), proposed non-response follow-up procedures, the special language requirements of the survey, and a brief summary of the quality control procedures to be used in the field.

8.2 The average time that respondents will need to provide the information and the ease of obtaining the information should be indicated. If respondents are known to be frequently subject to requests for information from Government, or if any of the information sought will be perceived by respondents to duplicate or overlap information already provided to the Government, this should be indicated. If any of the information requested is likely to be perceived by respondents as being sensitive, or personal, this should also be indicated.

9. Processing the Data

The sub-section should provide a brief summary of plans for the editing and analysis of the data. The intention of this section is not to outline in detail steps involved in the processing but to provide an indication as to the scope of the processing.

10. Approvals and Costs

10.1 A statement should be supplied containing the date, name, and level of authority for the project (of which the survey may be all or part of) and whether approved as new or existing policy.

10.2 Details of the estimated costs involved in each of the financial years for which the survey will run should be stated under the appropriate programme and activity or sub-activity, by standard expenditure groups (E.S.G). For example:

Programme 11: Deer Farming Survey Activity:
Activity: Surveys
-Personnel
-Travel, Transport and Communications
-etc.

The cost should detail all direct and indirect costs, and separate out those costs that would be saved if the survey did not proceed.

11. Pilot Surveys and Pre-Tests

If a pilot survey(s) and/or pre-test(s) are to be carried out to test the questionnaire or the survey methodology, they should be described in this section. In fact, it is possible that the Survey Planning Proposal submitted will refer only to the pilot study. Departments are reminded that pilot surveys constitute a statistical survey within the meaning of the Act and require approval as outlined in this document.

12. Classifications

Details of classifications to be used in the survey should be included. A number of standard classifications are already in existence and others are being prepared. The Survey Control Section can advise departments on how to make use of these standard classifications.

13. Security of Information

This section should indicate whether restrictions are to be placed on persons within or outside your department obtaining access to information given on individual questionnaires and, if so, how this is to be enforced.

14. Restriction on Publication of Survey Details

This section should indicate whether the department wishes to have the survey plans held confidential, and the nature of the constraint so desired.

APPENDIX 4: APPLICATION FOR MINISTERIAL APPROVAL OF STATISTICAL SURVEY (Form SC/00/07).

STATISTICS ACT 1975

SC/00/07
June 1986

APPLICATION FOR MINISTERIAL APPROVAL OF STATISTICAL SURVEY

The Government Statistician
Department of Statistics
Private Bag
WELLINGTON

In terms of Section 6 of the Statistics Act 1975 the approval of the Minister of Statistics is sought to carry out a statistical survey, details of which are as follows:-

1. SURVEY TITLE:

2. SURVEY OBJECTIVES:

3. NATURE OF SURVEY (Tick box which applies)

3.1	Type	New Survey		Alteration to existing survey		
3.2	Coverage	Sample Survey		Full Coverage		
3.3	Field procedures	Postal		Personal interview		Other
3.4	Is the survey	Voluntary		Compulsory		

4. ACT OR REGULATION UNDER WHICH THE SURVEY IS CARRIED OUT:

5. TIMING AND PERIODICITY:

5.1 Date of commencement of survey -

5.2 Period covered by survey -

5.3 Frequency of survey -

NATURE OF INFORMATION SOUGHT:

7. SURVEY POPULATION:

8. NATURE, FORM AND TIMING OF OUTPUT:

9. RESOURCES AND COSTS:

10. APPROVALS: (Tick box which applies)

10.1 Has this statistical survey been approved either as new or as part of existing policy? Yes ☐ No ☐

10.2 If 'yes' when was approval given? Date .....

and what was the level of the approval? .....

11. OTHER: (Special features of the survey)

Signature .....

Designation .....

Department .....

Date .....