Questionnaires – a brief introduction

A questionnaire is often the first tool that people consider when undertaking a research project. However, designing a questionnaire is complex and time-consuming and the quality of the data collected is determined by the quality of the questionnaire used. It may be more appropriate to consider alternative methods such as focus groups, vox pops, etc. (add links). Therefore, ask yourself: 'what do I need to know?' and 'how can I find this out?'

It is important to consider the advantages and disadvantages of using questionnaires.

Advantages:

- The data gathered is standardised and therefore, easy to analyse;
- Data can be gathered quickly from a large number of respondents;
- It is possible to compare your results with similar surveys used in other institutions;
- Respondents can answer anonymously which may produce more honest answers;
- Online surveys are relatively inexpensive;
- One person can administer the whole process if they have the necessary skills.

Disadvantages:

- Responses may be inaccurate, especially through mis-interpretation of questions in self-completing questionnaires;
- A reasonable sample size is needed before the responses can be used to represent the population as a whole;
- Response rates can be poor, people may lack the motivation to complete or return the questionnaire. Consequently, some sort of incentive may have to be included, for example, a prize draw;
- The complexity of designing, producing, distributing, and analysing the questionnaires may make them expensive and time consuming;
- Quantitative data (ie, research that produces numbers and percentages etc.) may not be enough to answer the questions you are seeking to answer in your research. More in-depth interviews or focus groups may be needed.

This guide is intended as an overview. In order to successfully use a questionnaire as a research tool it will be necessary to consult more detailed texts, some of which are listed in the reference section.

Process of designing and using a questionnaire:

Preparation is vital. Focus on the aims of the investigation and consider how the data is to be analysed before collecting it. Failure to do this may result in data being collected that is incomplete or that is not adequate for satisfying the research aims. The means of analysis should also be decided before the questionnaire is delivered, not after the data is collected, this is to ensure that the questions are in a format which is suitable for analysis by the package chosen. A lot of skill is involved in designing a good statistically

sound questionnaire, if possible use an existing questionnaire that has been standardised and validated by someone else.

You must ensure that Data Protection legislation is complied with. Only data that is essential should be collected and must only be used for the purposes declared on the questionnaire. Any guarantees of confidentiality must be carried out. Please refer to the Information Commissioner's Office website for further details: http://www.ico.gov.uk/eventual.aspx?id=34. See also the Market Research Society's code of conduct given in reference section. The results of the questionnaire should be made available to respondents if they request it.

The basic process:

1. define aims
2. identify the population and the size of sample required
3. decide how to distribute and collect the survey
4. design the questionnaire
5. carry out a pilot survey
6. carry out the main survey
7. analyse the data
8. draw conclusions.

Define Aims.

What is the exact purpose of the study? It is important that this is identified clearly as it dictates the questions that are required. Clearly defined aims should result in a relevant concise questionnaire.

Identify population and sample.

The population is the entire group of people that you are concerned with, for example, if you are researching part-time students' use of electronic resources, then all of the part-time students enrolled at Bolton University are the population. Unless the population size is very small, you will only be administering the questionnaire to a sample of them. The responses from the sample can be assumed to represent the views of the entire population. It is important that the sample size is sufficient to be statistically viable, ie, that you can be confident that results accurately represent the views of the whole population. Generally, the bigger the sample the more reliable it is. However, the sample size required will be determined by several factors, such as: the importance of the research; the budget of the project; and willingness of people to participate. If doing a postal or online survey, response rate must be taken into account when considering the number of questionnaires to send out. The response rate is generally about 20%, therefore, the required number should be multiplied by five, for example, if you wanted to obtain 50 responses you must send out 250 questionnaires.

Is the sample representative of the population as a whole? It is not just the number of responses that is important, but also the 'type' of respondents, for example, if you wanted to survey the student population as a whole it would be important to have a representative mix of part-time full-time students, male and female, different age ranges, ethnic backgrounds, etc. A large enough sample, distributed in a random way

should provide a representative mix of different categories of students. If conducting a survey on the use of library resources it might be tempting to give questionnaires to those students familiar to us through their regular use of the library, but this would not necessarily provide results that are representative of the student population as a whole. Therefore, the survey should be distributed in a non-biased random way. Postal surveys are ideal for solving this problem but are expensive and time-consuming to conduct. There many different means of sampling, further information can be found in the references given at the end of this guide.

Method of collection.

There are various means of administering the survey, for example, the respondents can complete the survey themselves or it can be completed by an interviewer in a one-to-one structured interview. Self-administered surveys can be distributed by post, online, or personally handed-out. The method chosen may be influenced by cost and the size of sample required. The method must be appropriate to fulfil the aims of the research, for example, a one-to-one interview may be appropriate when very detailed information is required from a small sample or population, but would be inappropriate for a large sample using a survey of twenty questions with tick boxes.

Postal surveys should also include a reply-paid envelope and covering letter. Obviously, if this method is chosen you will need the respondents to include personal data.

Set a deadline for completed responses to be returned and include this information on the questionnaire or covering letter.

Design Questionnaire.

There are three main elements to consider:

i. determine the questions to be asked
ii. select the appropriate question type and wording for each question
iii. the overall layout and question sequence.

i. The questions should relate directly back to the aims of the research. For example, a study attempting to establish the motivations of students in using a particular library service might want to consider factors such as age, course, level of education, gender, etc. Therefore, possible questions could include:

What is your age?
Are you male or female?
What is the highest educational qualification that you have achieved?
What course are you currently enrolled on?

It is important to avoid asking too many questions as this will put respondents off and leave you with a lot of (probably irrelevant) data to analyse.

ii. There are many different question formats:

Closed questions direct the respondents to choose from supplied answers. This can be more manageable at the analysis stage. Including the 'other' option allows for any answer that you may not have thought of. For example:

Which services offered by Learning Support Services do you find useful? (tick if appropriate)

Book collection	**?**
Printed journals	**?**
Electronic journals	**?**
Electronic books	**?**
Binding	**?**
Study space	**?**
Other (please specify)	

…….....

.....……...…

……...

Closed questions can lead to bias because respondents are lead by the answers you are supplying to the question. This can be removed by using **Open** questions. These can result in a wide variety of answers in terms of content, length and complexity. For example:

Which services offered by Learning Support Services do you find useful?

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..

The advantage of open questions is that more informative responses may be given. The disadvantage is that they may be more difficult to interpret and analyse.

You must decide if you want **single** or **multiple response** answers, for example in the closed question example above, it must be clear whether respondents should just tick one box, ie, the service that they find most useful, or several if they find more than one useful. Therefore, include an appropriate instruction such as 'tick only one box' or 'tick all that apply'.

Ranked responses are sometimes useful to indicate the strength of respondent's preferences. For example:

Which library services are most useful to you? (indicate by numbering from 1-6 in order where 1 is the most important)

Book collection	**?**
Printed journals	**?**
Electronic journals	**?**
Electronic books	**?**
Binding	**?**
Study space	**?**

The disadvantage of this format is that it generates a lot of data and respondents may find it difficult to accurately differentiate between the options, ie, there is no option for an equal weighting of responses and no option to not weight a response at all, for example in the above example, a user may only use the library for book borrowing (ranked 1), therefore, ranking the other options 2-6 is meaningless and misleading.

Rated responses are a good alternative to ranked responses. A popular format is the Likert scale as demonstrated in the example below. In this example, the respondent considers each option individually and can give a more accurate response.

How useful do you find the following aspects of library services?

(circle the number under the initial that applies. VI = Very important; I = Important; N = Neutral; U = Unimportant; VU = Very Unimportant).

	VI	**I**	**N**	**U**	**VU**
Book collection	1	2	3	4	5
Printed journals	1	2	3	4	5
Electronic journals	1	2	3	4	5
Electronic books	1	2	3	4	5
Binding	1	2	3	4	5
Study space	1	2	3	4	5

It is a good idea to use a variety of formats so that the respondents don't get bored or mechanically tick the same boxes for all questions.

Whichever format is chosen, the wording of the questions should be clear, unambiguous, and jargon free. Be specific rather than vague, for example, 'have you used the library in the last week?' is more meaningful than 'have you used the library recently'? Avoid double barrelled questions such as 'Do you find

electronic books and journals useful?' The respondents may have a different answer for each component of the question.

Good examples of question formats are included in:
http://www.leeds.ac.uk/iss/documentation/top/top2.pdf

iii. The layout should be clear and not cluttered with unnecessary headings, numbers, boxes etc. Do not overfill the page. Reducing the font size can make the questionnaire appear shorter and therefore less time-consuming to complete, but not so small that it is difficult to read. Formatting should be consistent and used to assist the respondent, for example, use a clear font style such as Arial. The sequence of questions should be logical: the simplest questions first, group themes together, and leave personal data questions until last.

The questionnaire should include an introductory statement (or covering letter) and contact and return information. The introductory statement should include the purpose of the survey and why it is important, so that the respondents can see that it is a worthwhile exercise. It should also include guarantees of confidentiality to reassure respondents. If the introductory statement is done well it can encourage people to complete the survey, thus improving the response rate. The survey may also include some additional incentive to complete it, for example, entry in a prize draw.

Run Pilot.

The pilot is a trial run of the questionnaire designed to spot any flaws which can be corrected before going to the expense of implementing the main survey. The pilot should be delivered to a small sample of the intended respondents, if this is not possible, colleagues or friends are acceptable. The pilot should include questionnaire completion, analysis and feedback from respondents. A good pilot will help to maximise the response rate, minimise errors and help you get the data you need to fulfil the aims of the project. If the questionnaire is changed as a result of the pilot you must not include the pilot responses in the final survey.

Main Survey.

Deliver the questionnaires as you have planned in section three. If you are sending questionnaires to specific people, you might want to consider sending reminders and another questionnaire to those not returned by a specific date.

Analyse data.

The data can be analysed simply by using a package such as Excel. It is possible to calculate percentages and produce charts which illustrate your results. For larger surveys more complex statistical packages such as Statistical Package for Social Scientists (SPSS) are also available. If you have used open ended questions or included 'other' options you will need to group the answers and code them before proceeding. References for SPSS can be found at the end of this guide.

Conclusions.

The analysed results should be related back to the aims of the project. The following questions must be considered before making recommendations based on the project findings. Do the results adequately answer the questions posed by the aims of the study? Are the results reliable? Was the sample size sufficient and representative of the whole population? Do the results provide enough information or are further studies needed, for example, you may have found out what is happening in a particular situation, but do you know the reasons why? It may be that research provides the basis for further research using other methods. If it is apparent that the research has some short-comings, for example, the sample size is too small, it is acceptable to report the results as long as the potential for error is acknowledged.

References:

There is a lot of literature available on questionnaire design and use. Below are a few urls for some good sites, giving clear simple information and examples.

http://www.bolton.ac.uk/bissto/researchskills/research_method/index.htm

http://www.leeds.ac.uk/iss/documentation/top/top2.pdf

http://www.icbl.hw.ac.uk/ltdi/cookbook/questionnaires/process.html

http://www.ucc.ie/hfrg/resources/qfaq1.html

Data protection: http://www.ico.gov.uk/eventual.aspx?id=34

Market Research Society's: http://www.mrs.org.uk/standards/downloads/code2005.pdf

There are many text books explaining how to design, implement and analyse questionnaires. Browse at 658.83 and 300.72. Here are a few examples:

Bell, J. (1999) Doing Your Research Project. 3rd ed. Buckingham: Open University Press.

Chisnall, P. (2001) Marketing research. 6th ed. Maidenhead: McGraw-Hill.

Hinton, P. R. et al. (2004) SPSS Explained. Hove: Routledge.

Kinnear, P. R and Gray, C. D. (2004) SPSS 12 Made Simple. Hove: Psychology Press.

Malhotra, N.K. and Birks, D.F. (2000) Marketing research, an applied approach. European ed. Harlow: Pearson.

Pallant, J. (2005) SPSS survival manual. 2nd ed. Maidenhead: McGraw-Hill.

Proctor, T. (2000) Essentials of marketing research. 2nd ed. Harlow: Pearson.

Wright, L. T. and Crimp, M. The marketing research process. 5th ed. Harlow: Pearson.