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Quantitative Methods

Quantitative methods (normally using deductive logic) seek regularities in human lives, by separating the social world into empirical components called variables which can be represented numerically as frequencies or rate, whose associations with each other can be explored by statistical techniques, and accessed through researcher-introduced stimuli and systematic measurement.

Section Outline: *Two traditions? Core issues: regularities; variables; numerical values; statistical association; measurement stimuli; controlled measurement; external world. Large samples and deductive logic. 'Scientific knowledge'. Techniques, philosophy and temperaments. Fashions in methods. Methodological pluralism. Overlap of quantitative and qualitative methods.*

It is conventional to divide social research methods into two types: 'quantitative' and 'qualitative'. This makes it easier to identify differences between approaches to research, in the form of a rough 'shorthand' way of talking about things. It provides a loose framework for linking specific examples (see below). We will therefore use the distinction as a convenient way of exploring basic styles of research, although quantitative and qualitative methods *sometimes overlap* (e.g. Finch's use of sources in discussing family obligations (1989)).

The quickest way to gain a sense of quantitative methods is through examples. In this book for instance, there are sections on Contingency Tables, Hypotheses, Official Statistics, Questionnaires, Sampling and Survey Methods. This is not an exclusive list: other references can be found in more general sections, such as Fieldwork, Levels of Measurement, or Methods and Methodologies (although not all of these are listed in the 'link list' at the end of this section).

'Quantitative methods' is an umbrella term covering different types of research (Bryman 1988). In its simpler form, it consists of the counting of how frequently things happen (e.g. educational qualification levels among school leavers; attendance at doctors' surgeries; rates of divorce; proportion of national population living below the 'poverty line' (e.g. Dorling 1995; Kumar 1999: 226–40; Iganski and Payne 1999), and the presentation of these frequencies as summaries in tables and graphs (Frankfort-Nachmias and Leon-Guerrero 2000: 72–108). This can be extended by looking at how two or more factors seem to be connected, i.e. have associations (Rose and Sullivan 1993: 3–31) or to multivariate statistical techniques and mathematical models of social patterns (Sapsford 1999: 169–98; Schutt 1999).

Almost all forms of quantitative research share certain features.:

- The core concern is to describe and *account for regularities in social behaviour*, rather than seeking out and interpreting the meanings that people bring to their own actions.

- Patterns of behaviour can be *separated out into variables*, and *represented by numbers* (rather than treating actions as part of a holistic social process and context).
- Explanations are expressed as *associations* (usually statistical) *between variables*, ideally in a form that enables prediction of outcomes from known regularities.
- They explore social phenomena not just as they naturally occur, but by introducing *stimuli* like survey questions, collecting data by *systematic, repeated and controlled measurements*.
- They are based on the assumption that *social processes exist outside of individual actors' comprehension*, constraining individual actions, and accessible to researchers by virtue of their prior theoretical and empirical knowledge.

They often test theoretical hypotheses (i.e. using deductive not inductive logic), seeking regularities or 'laws' of social behaviour, but this approach is less common than often assumed by critics. Thus quantitative sociology focuses on those aspects of social behaviour that are most patterned and can best be quantified, rather than on highly fluid situations. The detail of social interaction and the meanings which individuals bring to the interaction are seen as lower-level and less important levels of explanation. This approach lays greater stress on prior social order or social structures external to the actors as contributing to the shaping of outcomes.

Most quantitative research therefore operates with less detail than qualitative methods, but with a wider scope and more generalised level of explanation. It utilises representative samples (**Sampling: Types**) to control for variations between people. Sometimes this is based on pragmatic decisions. For the basic frequencies about how many people experience certain conditions that feed into government policy (age groups, occupations, educational skills), we need accurate counts rather than highly sophisticated and detailed studies. It is much easier to use quantitative methods to identify national rates of, say, health or social inequality, or how such conditions relate to other social processes over say 40 years (**Longitudinal Studies**: Marmot and Wilkinson 1999; Payne and Roberts 2002) than to depend on and wait around for the face-to-face personal methods of qualitative research. Without a critical appreciation of numbers, the sociologist must struggle to engage with the forces of commerce, politics and other numerical disciplines that drive public life (Dorling and Simpson 1999; Payne 2003).

However, quantitative method is not just about pragmatics. It would

be wrong to over-emphasise the idea that quantitative methods involve a concern just with 'social facts'. Much of the tradition is exploratory and through the use of **Attitude Scales** interested in 'meanings'. In its more positivistic formats (**Positivism and Realism**), researchers are usually seeking to test prior theoretical ideas (i.e. using deductive, not inductive, logic), and to produce results that can be expressed as 'laws' of social behaviour that are generally applicable.

This claim to scientific knowledge and expertise is one of the key features of quantitative social research. Its techniques are claimed to liberate researchers from personal bias and values, allowing the results to approximate to a distinctive 'truth'. The visibility of much of the technical process (sampling designs, questionnaires, code-books), and the potential this gives for subsequent replication of studies by other researchers, is used to substantiate a case that quantitative methods provide the basis for a social *science*. The objective knowledge of the quantitative sociologist is different from ordinary, everyday personal experience or beliefs. Research findings are both reliable and valid (**Reliability**; **Validity**). They are of a different nature than the interpretive observations of small-scale interactions that typify the work of the qualitative social researcher.

Most sociologists would argue that the methods they use follow logically from prior intellectual understandings of the world. These philosophical standpoints about what counts as 'social', and how it can be accessed, are rigorously developed. Research practice depends on pre-existing conceptual frameworks (Bryman 2001: 214–26) that have been carefully elaborated and that can be logically defended (this of course also applies to qualitative sociology). In some cases that draw heavily on the philosophy of logical positivism (**Positivism and Realism**), quantitative methods are logically the *only* way to engage with the social world. However, claims for such consistency are more often implicit: there is a big difference between a *tendency* for philosophical stance and method to hang together, and for it actually to happen consistently.

We can identify three elements here. One is research technique per se (**Social Surveys**, **Questionnaires**, etc.). The second is the underlying intellectual understandings from which sociologists start. Other examples can be found in the sections on **Positivism** and **Experiments**. Third, debates over quantitative and qualitative methods reflect basic assumptions about free will and determinism: quantitative methods suiting those who tend to see human life as constrained and determined by external factors, and qualitative methods fitting more comfortably with those who stress the freedom of the individual to choose.

It is therefore unsurprising that many sociological accounts

vehemently dismiss alternative approaches. Academics trained to think consistently are naturally critical of views that they reject. For instance, qualitative sociologists have criticised quantitative methods as being superficial and failing to appreciate the complexity of social existence (**Ethnography**), falsely claiming to be value neutral, and treating the people being researched as mere objects (**Feminist Research**). However, such attacks also reflect the history of academic institutions, briefly illustrated in **Qualitative Methods**.

A glance at current sociological journals will show that American sociology is largely quantitative in style, and has been for many decades. In Britain, quantification was never so well established, and is currently the minority method of choice (Payne et al. in press). This has not prevented a great deal of conflict over research methods, leading some commentators to call for 'methodological pluralism', a plea for tolerance. This did not demand that every sociologist must practise all kinds of methods. Pluralism is achieved by the sum total of output, rather than by each individual.

Some researchers with broad interests do, however, allow the nature of the problem (the thing to be investigated) to dictate the techniques adopted for each study. This acknowledges that small-scale processes can best be studied qualitatively, whereas, say, national patterns require quantitative methods. This pragmatism attempts to build on the strengths of both traditions rather than taking an exclusive, philosophical stance. Preliminary exploration may best use 'softer' methods, in order to set up a more conventionally quantitative analysis as the next step, once basic hypotheses have been formulated and categories to be measured identified. On the other hand, many qualitative researchers find this denigrates their preferred style of research.

It is also true that quantitative techniques draw on some of the stock-in-trade of what is normally regarded as **Qualitative Methods** – and the reverse is also true. Question design needs to be extremely sensitive to the interpretation of phrases (**Questionnaires**). Conduct of **Fieldwork** involves interpersonal skills. There is no reason why quantitative approaches have to be restricted to questionnaires: they can also be used in **Observation** and **Key Informant** methods. While some of the more statistical styles of writing seem somewhat removed from qualitative methods, small-scale studies using simpler methods often move between quantification and interpretation, so that it is not entirely clear which tradition is being used (e.g. Werbner 2001). For these reasons, while distinguishing between the two main 'schools' helps to clarify the different techniques, in practice too much can be made of the differences.

Key Words

association
bias
deductive
measurement
objective

Links

Attitude Scales
Ethnography
Experiments
Fieldwork
Feminist Research
Key Informants
Longitudinal and cross-sectional Studies
Observation
Positivism and Realism
Qualitative Methods
Questionnaires
Reliability
Sampling: Types
Social Surveys
Validity

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Questionnaires

Questionnaires are the printed sets of questions to be answered by respondents, either through face-to-face interviews or self-completion, as a tested, structured, clearly presented and systematic means of collecting data (mainly in the quantitative methods tradition).

Section Outline: *Question format: simple, clear, understandable wording. Pitfalls: too general; double-barrelled questions; threatening; too complicated. Open and closed questions. Show cards. Question sequences. Filters. Self-completion.*

In survey research – probably the archetypal example of **Quantitative Methods** – everyone in the sample is systematically asked the same questions, in the same order in each interview and by each interviewer. This is in contrast to in-depth **Interviewing** (see also **Auto/biography and Life Histories**; **Unobtrusive Methods**). A list of topics to be included is converted into easily understandable and answerable questions, written down on a standardised form (the 'questionnaire'). Questionnaire design is a deceptively specialist skill, and best not tackled alone. A useful starting point for phrasing questions is the Question Bank (http://qb.soc.surrey.ac.uk). In designing the questionnaire, there are certain basic rules that should always be followed. These can be divided into pitfalls which you should avoid, types of questions and question order.

It has long been established that *questions must be easily understandable to all respondents* (Payne 1951). Each question should mean the same to everyone involved so that comparable answers are obtained. Thus the language used should be simple, non-technical and unambiguous. For example, a survey on eating patterns should not include questions about

'adequate nutritional requirements' or even 'a balanced diet', since some people would either not understand the terms used or interpret 'adequate', 'nutritional' or 'balanced' by their own standards. Instead, respondents might be asked what they ate during a particular day or their last meal. 'Ate' is better than 'consumed': always use the simplest vocabulary you can. *You* know what you mean, but will others?

This latter test applies to questions that are *too general*. For example, 'What do you think about this area?' might obtain a wider range of non-comparable answers such as 'not a lot' or a very detailed account of the history, environment and social life of the area (**Community Profiles**). Alternatives to such questions include using a list of statements that the respondent can agree or disagree with, or you might ask about specific features of the area separately. A general question is, however, useful as an introductory question to put the respondent at ease, rather than providing any data.

Questions that appear to expect a certain answer (*leading questions*) should not be used. Respondents are likely to agree with the sentiments expressed in such questions, believing there is a correct answer, rather than giving their own opinion. 'Youth crime is a problem in this area, isn't it?' would be better phrased as 'In this area, is youth crime a problem?' or, even better, 'In this area, which of the following do you think are the main problems?', followed by a list of possible problems. Note that qualifying phrases ('in this area') should come first in the question, to focus respondents before they tackle the more general issue of the main question.

A fourth common error is *combining two or more questions into one*, as for instance in 'Do you think there should be more recreational facilities and daycare centres for children and older people?' Here, you cannot know whether the answer is to 'recreational centres' or 'day-care centres', for 'children' or 'older people'. The question should become four separate questions.

Anything *threatening* or likely to arouse *anxiety* should be avoided by substituting indirect questions. A study of child abuse might therefore not ask about first-hand experience, but instead include questions listing a range of physical and mental abuses, to ascertain those that respondents thought most serious. People feel threatened or anxious about a range of topics, and if questions seem likely to intimidate, then a non-survey method could be considered.

Questions involving complex *knowledge*, *mental arithmetic* or that need *detailed memory recall* are particular sources of anxiety. They also produce a high proportion of factually incorrect answers. Thus, asking for the average age of people in a household would entail not only knowing

everyone's ages, but also being able to *calculate averages in one's head*. Ask for the individual ages, and calculate the averages at the data analysis stage.

There are two main types of questions: 'open-ended' and 'closed'. Open-ended questions leave the answer entirely to the respondent, because the researcher either has little prior knowledge of possible responses, or feels that more detailed responses might add depth to the survey. For example, 'In this area, what do you think are the main health problems?' The layout of the questionnaire should leave sufficient space to record replies verbatim.

Most questions are likely to be phrased in closed format, offering a number of fixed answers from which respondents must choose. However, categories such as 'Other' or 'Don't Know' are included to cover all possible answers. The main advantage of closed questions is that they are easily classified at the coding stage, or even pre-coded on the questionnaire. The most common type are 'checklist' questions, offering several alternatives. For example, 'What is the main way you travel to work?: walk; cycle; bus; train; car; mixture of these; other'. Here, only one answer can be selected. Alternatively, the respondent may be allowed to select a fixed number of answers or as many as necessary: 'Which of the following foods have you eaten today?: bread; rice; pasta; potatoes; pastry; eggs; meat; lentils; beans fruit; vegetables'. Most 'attitude scale' questions offer a range of five possible responses to opinion statements (**Attitude Scales**: Oppenheim 1992).

Responses for some closed questions can be printed on 'show cards'. Each response is given a letter or digit, and respondents are asked to select their response to a particular question from a list handed to them, using that letter or number. This saves time and repetition when several questions have the same possible responses, the list is long, or sensitive questions are being asked, because the interviewer only has to read out the question and not the list.

The order of questions has an important influence on the answers. Generally, questions should flow into each other so that the rules of a normal conversation are followed. Sometimes, however, it is possible to 'hide' a question among other topics as a way of checking previous responses. The questionnaire's layout should not be crowded: it must be easy for interviewers to use, and 'instructions' (e.g. filters) differentiated from the question wordings to be read out.

Often respondents are only required to answer certain questions if they have answered a previous question in a particular way. This question is called a *contingency* or *filter question*. Clearly, to work, filter questions have to be closed. For example, you might want to ask questions about children

only if respondents did have children. The filter would ask if they had children: if the answer was 'no', the interviewer's instruction would be to leave out the questions about children: 'IF NONE, GO TO QUESTION X'. – hence the term 'skip' or 'GOTO' questions. The other major instruction to interviewers is when to PROBE or PROMPT (**Interviewing**).

Most of these guidelines apply to *self-completion* questionnaires (including **Internet Polling**), but no question order can be guaranteed because respondents can choose their own order. Question wording is even more vital, and any filter instructions must be absolutely clear. The questionnaire must be brief, because respondents' attention spans are short. Both types of questionnaire are better suited to collecting 'factual' information than more subtle and complex social data, like interaction processes or full meanings. Their success relies heavily on careful design and full pre-testing, prior to going 'into the field' (**Social Surveys**). Equally, if the original concepts and insights are not intriguing, the results will disappoint: 'If we ask dull questions we shall get dull answers' (Sapsford 1999: 257).

Designing questionnaires looks simple but it is not. A good rule of thumb is always to work in pairs, and then to use a couple of friends or family members as guinea pigs (they will be your sternest critics!). Even some professional survey researchers sometimes produce seriously deficient questions: on the day this was written YouGov, the internet polling organisation, was running inter alia the following agree/disagree question:

Bologna in Birmingham, Madrid in Manchester; cities in continental Europe are a good example from which our towns could learn.

We might object:

1 What does the second and fifth word 'in' actually *mean*?
2 Do we all *know* Bologna/Birmingham/Madrid/Manchester, or already like/dislike them equally? How will this affect our response?
3 This is a *dual* question: what if we think Bologna 'yes', Madrid 'no'?
4 'a good example'? Of what? Bull-fighting? Cooked meats? Traffic? This is too general a question.
5 'towns': does this mean just Birmingham and Manchester, or other British *cities*, or smaller urban settlements? Can all 'towns' learn the same lessons?
6 Who is '*our*'?: Scots might not call Birmingham or Manchester 'our towns'.

Sadly, standards are not always beyond reproach.

This is often hidden because publishing conventions dictate that most published accounts do not include the questionnaires on which they are

based – of course, in *qualitative* research, the questions are even more invisible, and therefore problematic. Questionnaire design is not just a technical matter: Savage et al. (2001) show how the type of question, and order of presentation affected the *conclusions* drawn in the Essex Class Survey (Marshall et al. 1989 – which includes the questionnaire). Among quantitative studies, the annual British Social Attitudes series (e.g. Park et al. 2002) is another good exception of including the questionnaire, and many questionnaires are available for inspection online from the UK Data Archive (www.data-archive.ac.uk). A useful test of your own understanding is to select an example on a topic which interests you, and to review the question wording and sequencing.

Key Words

closed questions
checklists
comparability
contingency question
filter question
leading question
open-ended questions
self-completion questionnaire
skip instruction

Links

Attitude Scales
Auto/biography and Life Histories
Community Profiles
Internet Polling
Interviewing
Quantitative Methods
Social Surveys
Unobtrusive Methods and Triangulation

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Social Surveys

Social surveys collect mainly quantitative but also qualitative data from (usually representative) samples of people, by means of their verbal responses to uniform sets of systematic, structured questions presented either by interviewers or in self-completion questionnaires.

Section Outline: *Current status of survey research. Surveys involve standardisation, a sample and codifiable data. Types of social survey. Hypotheses and operationalisation. Pre-tests and pilots. Sample designs and workloads. Interviewer training and briefing. Contracting out the fieldwork. Pre-fieldwork checks. Interviewing, fieldwork management and response rates.*

Social surveys are one of the most widely used social science tools, and through market research and opinion polling, have become recognised parts of contemporary life. Within their own frame of reference, properly conducted surveys are effective means of collecting data (although other paradigms reject surveys out of hand: **Methods and Methodologies**; **Feminist Research**). However, misuse by less than scrupulous lobbyists has helped to discredit them, while social researchers more concerned

with interpreting meanings than explaining wider social patterns have chosen other methods (**Qualitative Methods**). Confidence in survey results depends both on the integration of good practice across a series of components (Hoinville et al. 1982), and the application of the method to appropriate purposes (**Quantitative Methods**). In this section, we concentrate on the former, presenting the survey as a sequence of tasks.

Social surveys typically involve three characteristics. They *collect data in a standardised way* from a *sample* of respondents, enabling the data to be *codified, normally into quantitative form*. There are several types of survey: face-to-face interviewer surveys, telephone and internet surveys (**Interviewing**; **Telephone and Computer-assisted Polling**; and **Internet Polling**); and self-completion surveys (**Questionnaires**). They share the same basic steps, differing only in the importance of specific issues. For instance, questionnaire design is even more important for self-completion surveys, because no researcher is present to help informants having problems to answer the questions. Sampling and response rates are more problematic in electronic surveys. Face-to-face surveys can encounter difficulties with interviewing and, in larger studies, with managing a field-force of interviewers (MacFarlane Smith 1972: 52–71). The scale of such large studies contrasts with the **Case Study** method, and most qualitative work.

Survey research frequently starts with a theory to be tested in the form of hypotheses (**Hypothesis**), or more often, an idea to be explored as a step towards greater theoretical clarification. Indeed, the starting point should probably be whether a social survey is the right thing to do. Is it the best method and is it 'do-able' (Sapsford 1999: 10)? Theories and ideas need to be expressed in terms of *operational definitions*, by means of which data can be collected. Operationalisation begins as an intellectual process, leading to draft measurements and questions. For example, 'ethnicity' needs to be refined into a list of ethnic groups, and one or more questions to enable the categorisation of respondents into those groups. For some purposes, five broad groupings might suffice in Britain (e.g. White, Indian, West Indian, Pakistani-Bangladeshi, and 'Other': Iganski et al. 2001). In other countries, these groupings might be different. For more detailed research, smaller groups might need to be identified: Chinese, West African, and East European (Abbott and Tyler 1995: see also **Indicators and Operationalisations**).

The draft questions are collected into a preliminary questionnaire which is 'pre-tested' and 'piloted'. Pre-testing typically checks basic formats on a few people chosen for convenience (colleagues, friends), whereas piloting should involve a miniature version of the study, using a

realistic sub-sample and working through coding to produce at least a draft set of coding instructions (the 'code-book'). Piloting should reveal whether the questionnaire, including its layout and instructions, 'works' to produce the information that is wanted. **Attitude Scales** require even more preparatory development.

While the **questionnaire** is being readied, the sample can be designed and drawn (**Sampling: Types**). As well as drawing the complete list of potential respondents from the sample frame, targeted names or addresses for face-to-face interviews are divided into suitable *workloads for interviewers*. This will be determined by whether the interviewers can work throughout the day, or only in the evenings, how many interviewers are available, the travelling times involved in the geographical spread of the survey, and the time each interview will take to complete.

It will also be necessary to obtain and train the interviewers. In some cases, experienced and highly skilful interviewers will be available, who need only to have the specific features of the study explained to them. In other cases, more basic training may first be required (McCrossan 1991). This should be workshop-based and include:

- general principles of surveys (samples, types of questions);
- confidentiality;
- truthfulness;
- presentation of self and personal appearance – tidy but not too smart;
- how to gain co-operation and trust;
- the importance of reading the questions exactly as they are worded;
- prompting and probing techniques;
- accuracy in recording answers;
- personal protection and safety;
- essential items to carry: identity card, covering letters, telephone numbers, addresses of respondents, folder, blank questionnaires, maps, pens and pencils, show cards;
- issues relating to the particular survey: preferably a handbook should be prepared. Interviewers should be taken through the questionnaire and also have time to conduct some trial interviews.

Not all researchers have ready access to a team of interviewers, or want the responsibility of managing them. This is therefore often 'contracted out' to a market research company, with its field-force of experienced personnel. In fact, interviewers normally work part-time for several companies, accepting commissions through self-employed 'supervisors' whom they know personally. A cheaper compromise, where possible, is to

contract directly a supervisor. If farming out the data collection is being considered, it is normal to ask for cost quotations from several companies prior to entering into a contract.

Some companies specialise in social research, and offer a full range of services, from questionnaire design, through interviewing, to delivery of a pre-analysed electronic version of the data. While there are some well-regarded firms (acknowledgements in the literature identify which they are), *contracting out is no guarantee of successful fieldwork*. Not all researchers wish to hand over control in this way, or more likely, can afford the cost of doing so.

Even in smaller surveys, where one researcher completes all the interviews, it is important that *all* of the preparatory stages are completed. For example, an identity card or letter is essential to gain access to justifiably nervous respondents. In area surveys, the local police service should be notified (not least, this gives potential respondents an independent method of checking on interviewers). If the respondents constitute a special category (ethnic group, gender, class) will the interviewer(s) be easily able to gain *access* and establish *rapport*? The timing of interviews (in terms of the day, week and season) should be carefully planned. If there is more than one interviewer, quality controls will be needed: prompt inspection of completed questionnaires, and a sub-sample postal check that respondents were actually interviewed as claimed.

Researchers are often anxious about refusals to be interviewed and failure to achieve a good response rate. It is true that face-to-face interviews (and even more so, **Telephone Polling**) are more intrusive than, say, re-using **Official Statistics** or other **Unobtrusive Methods**. However, for most topics, only a *very few* people will refuse to be interviewed if the survey is conducted correctly (see Devine and Heath 1999: 107–28 for a discussion of 'sensitive' topics). If a 'first refusal' is given, interviewers should attempt to find out the reason (**Interviewing**). It might be they called at an inconvenient time, in which case a more suitable time should be arranged. Other reasons include fear, respondents' worry about their views becoming known, or that they feel that they do not know anything about the topic. The interviewer should attempt to reassure them. Two further attempts/re-calls are normal, the last by a different (and preferably more experienced) interviewer. In postal surveys, follow-up mailings to non-responses should go out 10 days and 20 days after initial mailing. Incentives (small gifts like a pen or a lottery ticket) are usually made to encourage response.

No survey has a 100 per cent response rate. People move away or die, or the address or person is unknown. Standardised procedures have been

developed to tackle these problems. If people have died, moved out of the area, cannot be traced, or if the address or person is unknown, a replacement is made. (It is usual to draw up a list of substitutes/reserves when you select your sample.) These are not counted as non-response.

High response rates depend on *good record-keeping* and *prompt intervention*. As a rule of thumb, 70 per cent is an adequate response rate in face-to-face operations, although 80–85 per cent is a better target. In self-completion and postal surveys, 33 per cent is more typical, although for topics of particular relevance for the respondents, 60 per cent should be expected. What matters is not the proportion of non-responses, but whether the sample of achieved responses *resembles the original sample* (**Sampling: Questions of Size**).

Key Words

field-force
hypothesis
operational definition
pilot
pre-test
response rate

Links

Attitude Scales
Case Study
Feminist Research
Hypothesis
Indicators and Operationalisations
Internet Polling
Interviewing
Methods and Methodologies
Official Statistics
Qualitative Methods
Quantitative Methods
Questionnaires
Sampling: Types
Sampling: Questions of Size
Telephone and Computer-assisted Polling
Unobtrusive Methods and Triangulation

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Internet Polling

Internet polling is a relatively new, growing, but still untested means of carrying out social surveys and opinion polls by use of either direct e-mailing to potentially interested groups via message boards, or a website accessible only to a previously recruited panel.

Section Outline: *Internet polling for dissertations: cheap, safe, comfortable. Web users as a subject to be studied: user demographics; user ethnography. Polling: responding at convenient times. Otherwise much like postal questionnaires; same design requirements. Hardware and software incompatibilities. Software for coding. Limitations: scheduling for problems; confidentiality and anonymity; Netiquette. Cost savings versus sample bias.*

For university students, the ready availability of computing facilities offers the prospect of using the internet, not just as a way to search for published sources of information (**Internet and Other Searches**; **Secondary Analysis**), but also for collecting raw data. This is particularly useful for undergraduate dissertations, because internet 'fieldwork' is cheaper, quicker, safer and more comfortable (it can be done from home or the campus library).

There are three main types of internet social research. The most direct focuses on computer usage and the web itself as *topics of research*. For example, such work tells us about the 'demographics' of computer/internet users, i.e. respondents are 'more likely to be white, male, first world residents, relatively affluent and relatively well educated' (Coomber 1997: 5.1). The main pitfall in this field of research is depending for ideas on misleading non-sociological publications that make sweeping assertions about 'global villages', 'personal empowerment', 'the computerised society', etc.

A special case of treating internet use as a topic is the still relatively undeveloped field of ethnographic analysis (**Ethnography**). Here the key issues are: How do users understand the internet as a system of

communication? How are its social relationships different from 'real life', and what does it mean for self-identity? Hine (2000) has used a 'media event' (the Louise Woodward case) to explore many of the issues in this kind of work, which concentrates on exchanges within newsgroups (Fisher et al. 1996).

The third kind of internet-based research is primarily concerned with using it to contact respondents. These may be samples intended to represent the general population, as in voting intention polling, or sub-groups which are otherwise difficult to contact (e.g. self-harmers: Fox et al. 2003). The technology is only important in so far as it affects the findings (by producing different results from other methods), or the conduct of the research (offering practical advantages in procedures).

While there have been some comparisons between internet surveys' findings and findings from other methods, at this stage there has been little direct research on how people go about the process of *responding* to internet questionnaires. Hine's (2000) research does not report observational studies of user practice, for example. It is believed that recipients tackle electronic questionnaires in essentially the same way as reacting to postal questionnaires. This includes putting off completion from the moment of receipt to a more convenient time, notably at the weekend.

It follows that most of the issues in questionnaire design applying to postal surveys (**Social Surveys**; **Questionnaires**) – phrasing questions, putting them in the right sequence, and providing clear instructions – also apply to internet polling. With no face-to-face interviewers, people are more likely to complete the questionnaire if it is clear, unambiguous and easy to fill in. Equally, questionnaires should be introduced with explanations of researchers' identities and intentions, giving honest information about anonymity (see below) and confidentiality (**Ethical Practice**).

One difference is that whereas self-completion surveys operate on the simple system of either handing in, or using pre-paid return envelopes through the postal service, internet surveys have to rely on the compatibility of two main hardware platforms (MACs and PCs). Each of these can run different internet software (e.g. Netscape and Microsoft Explorer), connected to one of several service providers. It is important that interconnections between these are compatible.

This is less of a problem where the target respondents are known (for instance, a sample from the student e-mail directory within a university) and the contact method is an e-mail containing the questionnaire as an attachment. Where there is no comprehensive list ('sampling frame':

Sampling: Types) the usual method is to make contact via message boards or newsgroups, 'advertising' the survey as available at one's website. This increases the chances of technological incompatibility.

If data collection is set up through a website, more sophisticated tools can be brought into play. The questionnaire itself can contain software-based instructions (selective, real-time 'prompts'; offers of support through FAQs; or 'eye-candy' encouragements). In more sophisticated (and expensive) projects, incoming data can be handled by additional software at the server to pre-sort responses for speed of analysis (and to remove clerical error in coding: Fox et al. 2003). Commercial packages are already available (e.g. 'SphinxSurvey' 2003). Whatever the level of software, all data-collection tools should be pre-tested on a range of technologies, not just the researcher's own hardware and software.

Even with technical pre-testing, it is sensible to allow for down-time due to potential server crashes. 'Murphy's Law' (if it can happen, it will) works well in computing – internet polling is not the method of last resort when time for other methods seems to be running out! Research schedules should also cover possible need for e-mail correspondence with would-be respondents, about the questionnaire or ethical issues like confidentiality.

Promises of anonymity are less credible when e-mail replies will contain names and electronic addresses. Confidentiality is easier to deliver: although the emerging data-set will obviously be at risk to hackers, it is not significantly more vulnerable than other data-sets held on computers. The greater visibility of the original 'advertisement' might attract more hacking, but prompt data transfer via portable disks is one useful step to inhibit tracking. The technology should not distract researchers from their fundamental ethical obligations to be honest and to protect informants.

Indeed, the internet introduces new ethical issues. 'Netiquette' conventions, not least about 'spamming', have to be observed. 'Advertising' on bulletin boards or to newsgroups makes the survey less intrusive (nobody is obliged to respond, or deal with it at an inconvenient time). 'Difficult' topics can be tackled without the presence of an interviewer (although of course most qualitative researchers would not regard this as a benefit: **Ethnography**). Conversely, researchers are exposed to other people's bad internet practices, including speculative hacking, multiple replying to bias the results (checks can constrain this), deliberate false reporting, or other sabotage attempts where the topic has a political or moral dimension.

The technological limitation of internet polling, and the considerable

but often unanticipated time expended in preparation, can be balanced against more obvious advantages, like the absence of paper, printing and postage costs. As the data are in electronic form, there is much less need to transcribe prior to processing for analysis (**Quantitative Methods**; **Coding Qualitative Data**; **Content Analysis**). Data return quickly: Fox et al. (2003) suggest that replies from interest groups tail off within two weeks. 'Follow-ups' (**Social Surveys**) are as easy as with any other method, and take less of researchers' time.

The big remaining question is sampling. There is normally no sampling frame from which to select a representative sub-set of respondents (**Sampling: Types**). We noted above that internet users differ in their demographics from non-users. We therefore cannot be confident in generalising our findings beyond these types of people. For research about a general population, such as in opinion polling (e.g. *YouGov* 2003: Fisher et al. 1996), collecting extensive demographic data (including country of residence: the internet is international) from each respondent, and then weighting the data is one way to handle this (see **Telephone and Computer-assisted Polling**).

However, even if we match demographics, it is still impossible to tell how the people who self-select to respond are different from non-responders in other ways. The best that can be claimed is that, for specific difficult groups (e.g. drug-dealers, self harmers: see Coomber 1997; Fox et al. 2003), internet sampling may achieve larger samples than other methods equally dependent on defective samples. As with other methods, the choice is often about the 'least worst' solution rather than achieving perfection.

Key Words

anonymity
confidentiality
defective samples
demographics
'difficult' topics
media event
newsgroup
technological compatibility

Links

Coding Qualitative Data
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