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Policing

Constructing questionnaires

Tips for designing, piloting and administering surveys and questionnaires

Knowledge, Research and Practice

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If you have suggestions for other topics you would like to see covered in the 'top tips' series please send them to whatworkscentre@college.pnn.police.uk

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Thanks to Andy Myhill & Nicky Miller (College of Policing), Alexis Poole & Gilliam Sims (Devon & Cornwall Constabulary) and Laura Williams (Home Office) for their advice and contributions to this document.

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Tips for constructing questionnaires

Ask yourself the following.....

<p>Do I really need to do a survey?</p>	<p>Surveys can provide crucial data for a variety of purposes, but they can be expensive and take time to design, implement and analyse. They impose on the time and goodwill of the people asked to complete them. You should be very clear about the purpose of the survey and the value of the data that it will provide. It may be worth spending some time exploring whether existing data will meet your need or whether specific items you are interested could be helpfully incorporated into an established survey tool.</p>
<p>Is a survey the most effective way to provide the information I require?</p>	<p>Surveys are useful for quantifying the knowledge, attitudes, or beliefs of a (relatively) large number of people. If you are more interested in exploring people's views on a subject in depth, and are not concerned whether these views are representative of a wider group of people, then it may be more useful to conduct in-depth interviews or run focus groups.</p>
<p>What am I trying to find out?</p>	<p>Be very clear about the focus of your survey and ask only questions that relate to that topic, plus any related topics that may provide relevant context. A clear focus will help to keep the questionnaire as short as possible. Excessively long questionnaires that include many irrelevant questions can put off potential responders and risk wasting the time of both respondents and data analysts.</p>
<p>How big a sample do I need?</p>	<p>The required sample size depends on two things, the degree of accuracy you require and the extent to which there is variation in the population in regard to the key characteristics of study. Essentially you need to decide how much error you are prepared to tolerate and how certain you want to be about any generalisations from the sample to the wider population.</p> <p>There are a couple of things to note about the relationship between sample size and accuracy. When dealing with small samples a small increase in size can lead to a substantial increase in accuracy however with larger samples increasing the sample size does not have the same pay off and beyond a certain point the cost of increasing sample size is not worth it in terms of the extra precision. Many survey houses limit their samples to 2000 since beyond this the extra cost has insufficient payoff in terms of accuracy. The sample sizes required to obtain varying degrees of accuracy are listed below (assumes simple random sampling).</p>

Sampling error (%)	Sample size*
1.0	10 000
1.5	4 500
2.0	2 500
2.5	1 600
3.0	1 100
3.5	816
4.0	625
4.5	494
5.0	400
5.5	330
6.0	277
6.5	237
7.0	204

*NB: These figures assume a 50/50 split on the variable. Sample sizes would be smaller for more homogeneous samples.

Do I want to be able to generalise the results of my survey to represent the views of a wider group of people than the ones in my sample?

If the answer is 'yes', then you should use a **random probability sample**. Estimates from surveys conducted using a **quota sample** – where respondents are non-randomly selected to fill quotas of a particular population characteristic (e.g. age, gender etc) cannot be generalised to the wider population. Quota samples will only tell you information about the sample itself. Using a quota sample also means that statistical tests – such as calculating confidence intervals – cannot be performed on the data, so it is impossible to measure the accuracy of any estimates.

What type of data analysis do I want to be able to perform?

The type of analysis you wish to perform on your data should influence the format of your questions. If you only require basic descriptive data analysis, such as frequency percentages and cross-tabulations, then questions that provide nominal, categorical data are sufficient. If you would like to perform more advanced types of analysis on attitudinal data, such as factor analysis and multiple linear regression, then you will need to use attitude statements with response options that can be 'scaled'.

<p>Do I need to pilot my questionnaire?</p>	<p>Piloting survey questions is obviously not compulsory, but it is highly recommended.</p> <p>There are two stages to piloting: qualitative cognitive testing and a full quantitative pilot. Cognitive testing is done using a range of techniques during in-depth interviews; most often, respondents are asked to 'think aloud' their answers to your questions. Cognitive testing eliminates confusing or ambiguous words and questions and helps to ensure that your questions are interpreted as you intend them to be. A full quantitative pilot involves administering the final questionnaire to a mini-sample of people. A pilot also helps to identify problem questions, errors in survey routing, and questions that may not provide useful information (such as questions to which almost everyone agrees or disagrees).</p> <p>Robust survey piloting clearly has implications for costs and timescales. If you are keen to reduce the time/costs of extensive piloting you could consider using established items from existing surveys or collaborating with others to pilot new material. Whatever piloting method you decide upon the key consideration is to assure yourself that the survey items accurately measure what is intended.</p>
<p>Should I include 'open ended' or 'free text' questions</p>	<p>Open-ended questions can provide extremely useful information. They can help diagnose, for example, why members of the public are satisfied or dissatisfied with the service they received. Free text responses are resource intensive though. They must all be read and it is often useful to construct a 'coding frame' to quantify the broad categories into which they fall. Analysis of free-text questions can take a considerable amount of time and they should be used sparingly and only in instances where it is crucial to know why respondents' have answered the way they have.</p>
<p>Do I want to measure people's attitudes?</p>	<p>If you want to measure attitudes, you should consider using Likert-type attitudes statements. Likert-type data can be 'scored' and summated to created continuous, scaled data. This type of data allows more advanced statistical analysis to be performed.</p>
<p>Should I employ a survey contractor or consultancy, or do the work myself?</p>	<p>The decision as to whether to contract out the work will likely depend on the scale of the survey and the availability internally of resources and appropriate skills. If you are confident in framing your own research questions and in undertaking survey design and data analysis (or you have colleagues that can undertake the work) then there is no reason to contract out the work. If, on the other hand, you lack key skills or you are not quite sure how to frame your project then external providers can offer specific services or a complete 'off the shelf' product encompassing design, delivery and data analysis.</p> <p>Caution: Survey providers and consultancies vary considerably in terms of quality and value for money. An alternative option might be academics who may be able to provide assistance free of charge if they are able to use your data to publish academic papers.</p>

Other hints and tips	
Survey administration	Before starting to design questions, decide how your questionnaire is to be administered: by post, over the phone, via the internet, or face-to-face. The type of survey may influence decisions relating to question structure, such as whether or not to explicitly offer a 'don't know' response option.
Common pitfalls in designing questions	<ul style="list-style-type: none"> • Unnecessarily long questions that contain complicated words and/or jargon or acronyms. Keep questions short, simple and to the point. • Double barreled questions. Do not ask about two things in the same question (e.g. 'pay' and 'conditions') as a respondent may not have the same opinion about both. • Leading questions. Questions can be leading if they are prefaced for example by 'do you agree that...' instead of 'to what extent do you agree or disagree that...', or if they use emotive terminology or give the respondent an indication of a socially desirable answer e.g. 'to what extent do you agree/disagree that the force should take a responsible zero tolerance approach to tackling the problem of local jobs?' • Double negatives which are confusing for the respondent e.g. 'do you agree/disagree with the following statement, 'I do not feel threatened by my supervisor at work'. • Ambiguous questions e.g. 'how many family members do you have?' when the word 'family' can mean different things to different people. • Overlapping or ill-defined response options. In a response scale of 'often', 'sometimes', 'not very often', 'rarely' respondents will have trouble differentiating between the last three categories. • Avoid gratuitous qualifiers – questions containing wording that would clearly affect the way people respond e.g. 'Do you oppose or favour cutting police expenditure even if it endangers our national security' • Be careful to ensure balanced response choices – more positive than negative response options could bias the results • Ensure a mixture of positive and negative questions. Asking respondents to rate their agreement in a survey consisting entirely of positive statements risks a 'halo effect' where respondents begin to gloss over the questions and start to answer automatically, anchoring their responses around the same point on the scale. • Think carefully about the ordering of your questions. Sometimes answers to previous questions can bias a respondent's subsequent answers.
Routing	Where possible make use of routing in your questionnaire so that respondents are not asked questions that are not relevant to them. A lot of routing in postal surveys can be confusing for respondents; the instructions should be clearly presented. Telephone, online, and face-to-face surveys have the advantage that routing can be pre-programmed or controlled by the interviewer. Caution: Always check a final version of your survey to make sure any routing is working correctly. If respondents are inadvertently routed around questions they should have been asked then vital information will be forever lost!

Response rates

Ideally you want your response rate to be as high as possible. Face-to-face surveys usually achieve the highest response rates; postal and telephone surveys generally have a lower response however this can vary widely depending on the context and the survey administration. A well organised web based survey in a force where all staff are networked can yield response rates in excess of 80%. Response rates can be improved by sending out reminders, having the survey endorsed or sent out by somebody senior, or providing incentives (if considered ethical). If you are worried that you have a low response rate that might affect the validity of your findings, one option would be to check the demographic profile of your respondents against any known characteristics of your sample (for example using census data). This process can help identify potential sources of bias.



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