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Developing Quality Standards for Cross-National Survey Research: Five Approaches

Peter Lynn

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ABSTRACT

This paper addresses methods for the development of quality standards for cross-national quantitative surveys. Five conceptual approaches to the development of standards are presented and the properties and consequences of each are discussed. The aim is to provide researchers with a rational set of arguments for choosing a particular approach in a given situation. The development of quality standards is particularly complicated in the case of cross-national research, owing to variability between nations in a number of factors that might typically be considered as 'fixed' design constraints in the context of single-country studies. This variability is illustrated by a number of examples that arose in the course of development of the European Social Survey. The paper also touches upon some related issues in the implementation and maintenance of quality standards.

1. Introduction

Setting and monitoring standards for survey design and implementation is an important exercise – especially if surveys are to be the subject of competitive tender or are to be carried out by multiple organisations (Kaase 1999). However, setting standards for survey design and implementation is particularly difficult when the survey is cross-national. The reason for this is the variability across nations of various constraining factors that would perhaps be considered as “fixed” factors in the context of a national or sub-national survey. These include:

- The availability and coverage of sampling frames;
- Laws and regulations that restrict aspects of survey practice;
- The availability and abilities of survey research organisations.

There are also other relevant factors that are not in themselves national characteristics but which can correlate highly with nation:

- Geographical dispersal of the study population;
- Language(s) spoken;
- Cultural and behavioural norms.

In addition, different nations may have very different survey cultures and survey practices for reasons unconnected with the types of factors mentioned above.

Standards for cross-national survey research need to take into account the variation in factors such as these. This is one of the main reasons why cross-national research involves an extra layer of work on top of that involved in single-country studies (Hakim 2000, chapter 13). In the absence of clear standards, where data collection is undertaken by different organisations in different countries it is likely that methods will differ substantially. Sampling frames will differ in their population coverage, leading to variations in coverage error. Multiple modes of data collection will be employed, leading to mode effects in survey estimates. Different approaches to translation will be used, introducing unintended and possibly unrecognised instrument

effects. Different approaches will be used to the provision of questionnaires/ interviewers in minority languages, again contributing to variations in coverage error.

There are no generally-accepted procedures for the development of standards for cross-national research, though Harkness (1999) describes some of the issues involved (see also Brislin *et al* 1973: chapter 3, Teune 1977). This article proposes five broad approaches to the setting of such standards and discusses their characteristics. In addition, it outlines some key issues in the development and implementation of quality standards for cross-national surveys. The discussion is illustrated with examples from the development of the European Social Survey.

2. Examples of cross-national variation in constraints

To illustrate some of the problems encountered in setting survey standards for cross-national research and to motivate the suggested solutions, we present here a few examples of considerations that rarely apply to national or sub-national surveys. The examples are drawn from the development work carried out for the European Social Survey (ESS), in which the author was involved (European Science Foundation 1999). ESS is an academically-led cross-national general population social survey, designed for implementation in up to 21 countries. The development work explicitly considered the constraints in each of the 21 countries. Though the illustrations presented here relate to general population surveys, there are likely to be close parallels in cross-national studies of other populations such as businesses, students, elites and so on.

2.1 Sample coverage

There are many differences between European nations in the definition of the population that is usually included in “general population” surveys. Some of these differences are caused by differences in sampling frames, some by cultural differences and some by differences in survey practice. For example, common practice in many countries is to exclude persons resident in certain types of institutions such as

hospitals and military bases. But the nature of these institutions and the population they account for can vary greatly between countries, depending on health care policies, whether or not the country has mandatory military service, and so on. Standardising the categories of institution to be excluded does not necessarily result in equivalent coverage effects.

Another example is that some countries typically exclude the very elderly from general population surveys (in Sweden the upper age limit is generally either 74 or 84 – Vogel 2000). If a cross-national survey were to impose the same limit in all countries, this may have the consequence that in some countries (where there is usually no limit) this survey is then no longer easily comparable with any other (national) survey. On the other hand, if the cross-national survey were to insist on no exclusions, this might cause implementation difficulties in countries that are not used to including the very elderly. A third possibility might be to allow variation between countries, provided that it is fully documented, and attempt to control for the effects at the analysis stage. (In any case, none of these strategies would control fully for between-country differences in age structure.)

A third example is the exclusion of remote or sparsely-populated areas of the country. In some countries, some or all outlying islands or remote areas are typically excluded from national general population surveys (e.g. UK, Greece, Spain). The effects of this exclusion on coverage bias (via sample composition) may vary between countries and should perhaps be controlled or limited in some way by survey standards.

2.2 Design effects

Some countries have complete population registers of individuals. In some cases these registers are in principle available as a survey sampling frame (e.g. Sweden, Slovenia, Finland, Germany), in others they are available only after a lengthy formal process of application (e.g. Belgium), and in others they are only available to the national statistical institute (e.g. Greece, Portugal, Italy, Norway). Other countries have only registers of addresses or dwellings (e.g. UK), or have neither and must rely on area sampling methods (e.g. USA). This can have implications for sampling

design effects (Kish 1965) and hence survey precision. For example, with a complete population register it is possible to select an equal-probability sample of individuals in such a way as to ensure that no two individuals in the same household are ever selected. But in a country with only a register of addresses or dwellings this is not possible (except by methods that would be extremely expensive – Butcher 1988). The obvious options then are either to include *all* individuals at each sampled address, or to randomly select *one* individual per address. The former results in a sample which is clustered within households; the latter is not an equal-probability design. Both will therefore suffer a consequent loss in precision, i.e. a design effect of greater than unity. In other words, even if all other things were equal, the same sample size will not yield the same precision in all countries. One solution might be to prescribe sample size in terms of the effective sample size (the size of a simple random sample that would achieve the same precision as the actual sample in question). However, this would have the effect that some countries would need a sample considerably larger (to counteract the design effect) or more expensive (because of screening or sub-sampling) than others.

2.3 Survey organisations

In some countries, the only survey organisation with access to the population register may be the survey branch of the National Statistical Office (e.g. Portugal, France, Greece). If population registers are the preferred sampling frame, this poses something of a problem for cross-national surveys. High survey standards regarding the sampling frame might rule out all but one survey organisation in a particular nation. There will then be a risk of the nation not taking part at all if that organisation is unable or unwilling to do the survey. The sampling frame standards could of course be lowered in order to widen the field of potential survey organisations, but this is likely to have obvious undesirable effects.

2.4 Mode of data collection

Some countries may have complete listings of telephone numbers available as a frame (e.g. Sweden) and others can generate efficient RDD samples (e.g. UK, Germany),

making telephone interviewing a possibility. However, others may only have good frames of addresses, but with no telephone number information, thus restricting the possible approaches to postal and face-to-face. Thus, standardisation of mode of data collection might force some nations to use relatively poor sampling methods. On the other hand, standardisation of the quality of the sampling frame might only be possible if different data collection modes were allowed in different countries and this might potentially introduce mode effects. Standards regarding mode of data collection can also have important cost implications as cost differences between telephone and face-to-face interviewing, for example, can be relatively large in countries with low population densities (e.g. Sweden, Finland, Norway).

In some countries, computer-assisted methods of survey data collection (particularly CATI and CAPI) are the norm for social surveys (e.g. Sweden, Finland, UK, Netherlands) while in others they are not used at all (e.g. Greece, Italy, Slovenia, Spain). In other countries there may be only one survey organisation that has a CAI capacity while others do not. Insisting that a survey must be carried out via CAI might force some countries to use CAI for first time. On the other hand, standardising on traditional pen-and-paper methods would force some countries to abandon what they see as best and efficient practice. An alternative would of course be to allow variation, but this would imply acceptance of possible mode effects on the data (deLeeuw 1992, Nicholls et al 1997, Lynn 1998). The nature of such mode effects can be quite specific to the topic and nature of the questions, so the extent to which they are important may differ between surveys.

2.5 Minority languages

In most countries there are some residents who do not understand or speak (any of) the language(s) in which survey organisations are prepared to carry out interviews or produce questionnaires. In consequence, “language” is one reason for survey non-response. The extent and nature of non-response due to failure of interviewer and interviewee to speak a common language will vary between countries. This will be partly a result of differences in the number of languages spoken and the size of each language group and partly a result of differences in the willingness of survey

organisations to provide interviewers or questionnaires in a range of languages. The latter of these two contributory factors can to some extent be controlled by the implementation of survey standards. It must, however, be recognised that standards in this respect may have different cost and timetable implications for different nations.

2.6 Interviewer recruitment and briefings

It has been demonstrated that the characteristics and behaviour of interviewers can affect survey data (Lessler and Kalsbeek 1992). The nature of persons recruited as interviewers, the training they receive and whether or not they receive in-person survey briefing varies between countries (and also between organisations within countries). Reasons include differences in geography, labour market conditions and - in the case of centralised telephone interviewing facilities - location of the survey organisation. To specify and implement cross-national standards regarding the nature of interviewers would be a challenge, but perhaps at least key aspects of training and briefing could usefully be standardised.

3. Setting cross-national quality standards

In this section, we propose five broad approaches to the development of standards for cross-national surveys. In section 4 we discuss the main advantages and limitations of each. It should be noted that we use the term ‘standards’ to encompass a broad range of parameters that can be specified at the outset of a survey research project, from those over which the researcher has complete control (e.g. sample design, question-testing methods, documentation) to those over which control is limited (e.g. response rate, fieldwork timing).

3.1 The maximum quality approach

The maximum quality approach aims to achieve a survey of the best possible quality in each country. This involves ensuring the best possible survey design and practice in each country. Separate standards therefore need to be set for each country (or group

of countries with similar characteristics and constraints), based on detailed knowledge of the practices and constraints in each country. This approach may therefore be relatively resource-intensive. It is likely to lead to major inconsistencies between countries in coverage, response rate, data collection mode, precision of estimates (via design effects), response errors, etc. The standards may also be controversial – i.e. some countries may find it hard to accept that they are being set apparently tougher standards than others.

3.2 The consistent quality approach

This approach aims to eradicate as many as possible of the between-country inconsistencies that would arise with the maximum quality approach. However, unless the standards are to rule out many countries from taking part in the survey, they must essentially represent a lowest common denominator. For example, standards for a Europe-wide survey would not be able to specify the use of CAI, equal-probability sampling of households, or high response rates. This is therefore likely to result in substantially lower survey quality in some countries than might be possible and than is achieved on national surveys.

In any case, completely consistent quality cannot be achieved for all aspects of survey quality. For example, it is impossible to enforce equal non-response bias. Furthermore, it is all but impossible to standardise all components of survey implementation. Different organisations will do things in slightly different ways. One way apparently to overcome this would be to have a single organisation carry out the survey in multiple countries. This may well increase consistency between those countries, but of course it would also limit the choice of survey organisation and possibly suppress quality in other respects.

3.3 The constrained maximum quality approach

The two approaches introduced so far can perhaps be thought of as extremes. One maximises quality at the expense of consistency and comparability; the other maximises consistency and comparability at the expense of quality. The constrained

maximum quality approach attempts to compromise between these two extremes. The approach depends upon being able to identify some key aspects of survey design that are likely to affect cross-national comparability for the survey in question. These might include, for example, data collection mode and sampling frame coverage. These aspects are then constrained in a consistent way – for example, the standards prescribe the data collection mode and the required characteristics of sampling frame coverage. Then, within those constraints, the maximum quality approach is adopted. It may be desirable to pay particular attention to the maximisation of quality in aspects and countries where the quality might otherwise be significantly lower. It is also likely to be appropriate to constrain aspects of design that are likely to affect bias of key survey measures, rather than just variability (Jowell 1998).

3.4 The target quality approach

This approach is similar to the consistent quality approach, but the standards set are those of the higher countries rather than lowest ones. The idea is that the survey might help to raise standards and quality in some countries as they will be aiming for a target which is higher than they might normally expect to achieve on national surveys. The fact that countries will be aware that the targets are expected to be met by some other countries might in itself provide important motivation to strive to maximise the quality achieved. With this approach, it would be necessary to recognise and accept that not all countries will achieve all targets. The aim is that by setting high targets, countries might at least achieve higher standards than they might otherwise have.

3.5 The constrained target quality approach

A small modification of the target quality approach would be to incorporate a few key constraints, as described in section 3.3. Within those constraints (which can simply be thought of as entry criteria or minimum standards/methods), challenging targets could be set, thus achieving the advantages of the target quality approach while also ensuring consistency at least on key dimensions. The standards adopted by the ESS methodology committee (European Science Foundation 1999) can be thought of as an example of this approach.

4. Discussion of the models

When faced with the task of determining a set of standards for a cross-national survey, the choice of approach to take must be influenced by the particular characteristics of the survey in question and of the countries involved. Here, we attempt only to comment on generic issues.

We begin by noting that the goal of consistent quality across nations can almost immediately be seen to be an impossible one. The consistent quality model also has the undesirable property of forcing quality to be lower than it might otherwise be. In practice, it might have to be very considerably lower in some countries. In such countries, high-quality survey organisations might not then be interested in carrying out the survey. By imposing “lowest common denominator” standards, there is also the risk of causing unanticipated further reductions in quality below that intended. For example, insisting that a survey is carried out by PAPI methods in a country/organisation where CAPI has been the norm for some years is likely to require the (re-)creation of systems for handling paper documents and the (re-)training of interviewers, coders and others in tasks specific to PAPI. The potential for errors and mistakes when people used to doing things one way are asked to do them in a slightly different way is considerable. Furthermore, we note that even ignoring arguments against the desirability of consistency of quality, some aspects of quality simply cannot be made consistent. Non-response bias is one obvious example. One simply cannot legislate for it. Even if the same (necessarily low) response rate were achieved in each country, there would be no reason to suppose that the resultant biases would be the same. So not only is the goal of consistent quality undesirable, it is in any case impossible. The one (rare) situation in which the consistent quality model might not be too undesirable is when the constraints and norms vary little between the countries. Then, the five approaches in any case converge.

The maximum quality approach is likely to lead to big differences in quality between countries. Some of these differences would manifest themselves in terms of differences in standard errors which, provided they were estimated appropriately, can be incorporated into the analysis and interpretation. Other differences could be

controlled for at the analysis stage. But still others might introduce bias that could not be controlled or measured. Such bias would affect cross-country comparisons and is of concern. The maximum quality approach might therefore be recommended in circumstances where one could be confident that relative biases would be small. But to be confident of this, one would need extensive information on the likely impact of combinations of design and implementation factors on various dimensions of quality. Though much research has been done in this area (e.g. Lessler and Kalsbeek 1992, Lyberg *et al* 1997), the available knowledge will rarely be enough to inspire great confidence in the likely absence of significant bias in *any* survey measure for *any* combination of countries. In the absence of this confidence, it would seem prudent to utilise existing research knowledge regarding the determinants of quality to constrain the most important factors. This would therefore suggest the constrained maximum quality approach.

The target quality approach might at first seem very similar to the maximum quality approach, at least in terms of the likely outcome. However, the difference in presentation and emphasis could be important. Consider the example of two countries where “usual” social survey response rates are around 50% (country A) and 80% (country B) respectively. Under the maximum quality approach, these countries might be set a standard of 55% and 85% response respectively, say. Under the target quality approach they would both be set the same standard, which might be, say, 80% or 85%. For country A, the large difference between their target and their usual response rates should signal that very considerable efforts are required in this area, compared with other areas where the targets might be closer to what is usually achieved. Similarly, the central survey control team should be able easily to identify areas where a country’s target was well above usual for that country and thus to concentrate efforts on helping those countries in those areas.

The rationale for constraining applies equally to the target quality approach. An example of an appropriate constraint might be to control the mode of data collection if the survey is aiming to collect particularly sensitive information, given the research evidence that sensitive items are particularly susceptible to mode effects (deLeeuw 1992, Tourangeau and Smith 1996).

5. Developing the standards

Whichever of the five approaches is adopted, a mechanism is needed to develop the standards. It should first be noted that the appropriate standards will depend both on the nature and aims of the survey and on the specific countries involved. It should also be noted that a knowledge of the constraints (in terms of the factors discussed in sections 1 and 2 above) in each country is vital. These considerations immediately suggest that the standards must be set by persons with detailed knowledge of survey-taking in each of the countries involved and a detailed understanding of the objectives of the survey. In most cases, this is likely to mean that the setting of standards should be a collaborative effort involving representatives of all of the countries involved (though not all need necessarily be involved to the same extent).

Furthermore, for the standards to be met will require a degree of good will and enthusiasm. This is another good reason for having all the main interested parties – particularly the survey organisations - on board at the stage when the standards are being set. If the survey organisations perceive (joint) ownership of the standards and responsibility for them, then they are more likely to make every effort to achieve them than might be the case if the standards were dictated from afar.

One mechanism would be for the standards to be developed by a central team, consisting of survey methodology experts from each country. It should be noted that these will not necessarily be the principal investigators, who will often be subject-matter experts rather than methodologists. The suitability of this mechanism will depend on the number and nature of the countries involved, though with web and email-based approaches to the conduct of committee business, distance between countries need not be a major constraint. It is likely also to be important that the funding organisation(s) be involved in the setting of standards. This might be achieved by consultation or by a process of formal approval.

6. Achieving the standards

Having researchers/organisations sign-up to an agreed set of standards will not in itself guarantee delivery of those standards (e.g. Park and Jowell 1997). Rather, it is necessary to go beyond the setting of standards and to introduce mechanisms for ensuring that they are met. Again, the details of the mechanism will depend on the specifics of the survey in question. However, it is important that achievement of the standards is monitored in an objective way and that the results are reported. In the case of repeated or panel surveys, the results of monitoring should feed back into the survey process, producing actions designed to result in the maintenance or improvement of standards where appropriate.

The European Social Survey has adopted the strategy of creating a central, cross-national, methodology team whose remit will include the monitoring and reporting of quality indicators. The team will also offer advice and support to country teams on matters of survey methodology and, specifically, advice on design that is likely to maximise survey quality and maximise the likelihood of adherence to the agreed standards. By offering carrots as well as sticks, it is hoped that the central team will be viewed as a positive and helpful presence and that the outcome will be fruitful collaboration on methodology, resulting in high quality standards. Above all, openness about methods and publication of detailed quality indicators and design information is likely to promote the appropriate use of the resultant survey data.

7. Conclusions

The development of standards for survey design and implementation is particularly important in the context of cross-national research. It is also particularly difficult, for reasons that have been described and illustrated in this paper. We have proposed five approaches to the development of such standards. These approaches do not in themselves constitute new methods, but rather represent a structured way of thinking about the sorts of issues that are pertinent to the choice of methods. We hope that by suggesting a formal structure for the development of standards for cross-national

surveys, we will encourage explicit and appropriate decision-making regarding the standards themselves. In due course, such a structured approach should lead to the improvement of survey quality on cross-national surveys.

However, a structured and informed approach to the setting of standards will not guarantee that the standards set will be appropriate for the aims of the survey. This additionally requires a detailed understanding of the objectives of the survey and the constraints upon it. It must also be recognised that setting appropriate standards will not guarantee that those standards are achieved. That requires a further stage, of monitoring, evaluation and feedback. This paper also makes some comments on that process. Ultimately, there are no easy solutions to the problems of development and maintenance of survey standards. We believe that the chances of success should be greatly enhanced by the adoption of a structured, rational, approach as outlined in this paper. But effective communication and co-operation between all concerned parties is also vital, as are determined efforts by (all) the survey organisation(s) involved. This in turn tends to rely upon all parties having a strong motivation to maximise the quality of the study. It is impossible to legislate for these aspects (motivation, communication, ...). Instead, it is important to make every effort to promote a research environment that is likely to be supportive of these attributes. The issues involved in doing this are outside the scope of this paper.

Furthermore, some of the inputs required for the development of survey quality standards still require development. A key foundation is a systematic conceptual framework for survey quality. Though important steps have been made in that direction (Japtec (ed.) 2001, Lynn 2001), the research community is yet to agree on a standard framework, even at the level of general concepts. Also, further research is needed into the impacts of various factors on survey quality. In the context of cross-national surveys, particularly important is a better understanding of culturally sensitive factors such as the use of respondent incentives, mode of data collection and the relationship between response rate and non-response bias. This further work, while challenging, would certainly seem warranted given the ever-greater emphasis that is rightly placed on survey quality standards and quality measurement.

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