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## **15 Using questionnaire surveys to gather data for within organisation HRD research**

**Cinla Akinci and Mark NK Saunders**

### **Summary**

This chapter provides an overview of the design and use of questionnaire surveys in Human Resource Development (HRD) research, focusing on the commonly occurring methodological issues and associated concerns. These are illustrated drawing upon personal experience of four projects within a large UK public sector organisation.

### **Introduction**

Questionnaire surveys offer Human Resource Development (HRD) researchers an efficient tool for the collection of data on the same topic from a large number of respondents. As a general term, questionnaire refers to all data collection instruments in which each respondent is asked to answer the same set of questions in a predetermined order (deVaus, 2002). It therefore includes structured interviews and telephone questionnaires, as well as those completed without an interviewer being present.

In this chapter, we focus on the use of questionnaires to gather data for within organisation HRD survey research. Following a brief overview of questionnaire surveys as a method for empirical research, we highlight a number of commonly occurring general methodological issues in using questionnaire surveys and outline how these might be addressed. An example of questionnaire surveys in HRD research is offered, exploring Mark Saunders' personal experience of a series of four applied research projects with a large UK public organisation. We conclude with a discussion in which we summarise key issues.

### **An overview of questionnaire surveys**

Given the questionnaire survey's apparent ease and flexibility of use, compared to other methods of data collection (such as interviews and observations), it is not surprising that it is one of the most widely used methods within HRD research. Questionnaires collect data by asking people to respond to exactly the same set of questions in a predetermined order, collecting descriptive and explanatory data about opinions, behaviours, and attributes from a large number of people. However,

for some research questions and objectives, questionnaires may not be appropriate. For instance, questionnaires are, usually, not particularly suited to exploratory or other research that requires large numbers of open-ended questions. Use of a questionnaire is also affected by the available resources such as the time available to complete data collection; financial implications of data collection; and, where not automated, of data entry for statistical analysis; and, for interviewer administered questionnaires, the availability and accessibility of interviewers.

Despite this widespread use, many authors (e.g. Bell, 2010; Oppenheim, 2000) argue that it is far harder to produce a good questionnaire than one might think. The researcher must ensure that the questionnaire will collect the precise data that are required to answer the research questions and achieve the objectives. We have found this is of paramount importance when using a questionnaire because, as researchers, we often only get one opportunity to collect data from our respondents, particularly those who wish to remain anonymous.

Once the use of the questionnaire survey method is agreed with the organisation, there are different types of questionnaires to choose from. The design of a questionnaire usually differs according to how it is delivered, returned or collected, as well as the amount of contact with the respondents (Saunders et al., 2012). For example, *self-completed questionnaires* are usually completed by respondents without further input from a researcher. Such questionnaires may be sent using the Internet (*Internet-mediated* or *web-based questionnaires*) or intranet (*intranet-mediated questionnaires*), posted to respondents who may return them by mail after completion (*postal* or *mail questionnaires*), or delivered by hand to each respondent and collected later (*delivery and collection questionnaires*). Responses to *interviewer-completed questionnaires* (also referred to as *structured interviews*) are recorded for each respondent by an interviewer on the basis of their answers. Another type of interviewer completed questionnaire is the *telephone questionnaire*. Like other interviewer-completed questionnaires, this differs from semi-structured and unstructured (in-depth) interviews, as there is a defined schedule of questions (the questionnaire), from which the interviewer does not deviate.

Questionnaire design is influenced by a variety of factors related to the research questions and objectives such as the: characteristics of the respondents from whom the data will be collected; importance of reaching a particular person as respondent; importance of respondents' answers not being contaminated or distorted; size of sample required for data analysis; types of questions to be asked in order to collect the necessary data and; number of questions required to ask to collect the data (Saunders et al., 2012).

Longer questionnaires are often best administered as face-to-face structured interviews. They can include more complicated questions than telephone questionnaires or self-completed questionnaires (Oppenheim, 2000). The presence of an interviewer means that it is also easier to route different subgroups of

respondents to answer different questions using filter questions. The suitability of different types of question also differs between research designs. Although a questionnaire can be the only data collection method used in a research study, it may be better to link it with other methods in a multiple or mixed methods research design (for example with secondary data such as personnel records or with in-depth interviews).

Saunders et al. (2012) note that the type of questionnaire chosen also affects the number of potential respondents who will actually respond. Interviewer-completed questionnaires usually have a higher response rate than self-completed questionnaires. The response rate, sample size and the way in which it is selected invariably have implications for the reliability of the data and the extent to which the findings can be generalised.

Quantitative research, such as that using questionnaire surveys, aims to develop knowledge by identifying variables, and by testing textual research questions and theories - often reflecting the epistemological stances of positivism and post-positivism (Johnson and Onwuegbuzie, 2004). According to these schools of thought, social science inquiry should be objective, suggesting that generalisations are desirable and possible, and the causes of social scientific outcomes can be determined reliably and validly. However, use of questionnaires is not only related to positivist and post-positivist philosophies. Where the key focus of choice of methods is to provide the best opportunity for answering the research questions and this necessitates using a questionnaire, it is likely that this will be within a pragmatist philosophy (Johnson and Onwuegbuzie, 2004). Questionnaires are used widely alongside qualitative methods in mixed methods studies. These studies often adopt a pragmatist philosophical stance.

In the next section, we reflect on some of the commonly occurring methodological issues and associated concerns we have encountered when using questionnaires in HRD research.

## **Issues and concerns when using questionnaire surveys**

Despite being a widely used data collection method, there are a number of issues (and associated concerns) related to using questionnaire surveys when undertaking empirical research. We now outline those that are most commonly experienced and their implications for HRD research.

### **Need for a clear research question**

In our experience, a common problem for both HRD researchers, and organisations in general, is outlining the clear research question to be answered. This, we believe, is the most important step as it influences other choices such as the research method including whether the use of a questionnaire survey is appropriate. As we

have already alluded, questionnaires work best when asking standardised questions, where the researcher can be confident that the questions will be interpreted in the same way by all respondents (Robson, 2011). For this reason, questionnaire surveys mostly tend to be used for descriptive or explanatory research.

Once the research question and associated objectives are clarified, the next task is to establish precisely what data need to be collected in order to answer this question and meet the objectives. This is not as simple as it appears; organisations often ask to include additional questions that, whilst not directly relevant, they consider 'interesting'. Dillman (2009) distinguishes between three types of data variable that can be collected through questionnaires, which each influence the way questions are worded. These are: *opinion variables* (how respondents feel about something or what they think or believe is true or false); *behavioural variables* (what people did in the past, do now or will do in the future); and *attribute variables* (respondents' characteristics such as age, gender, education, occupation). We have found it helpful, in designing each questionnaire question, to be clear whether we require data about respondents' opinions, behaviours or attributes and note how these data help explicitly to answer the research question.

### **Acting ethically and ensuring anonymity**

Whatever the questionnaire delivery method, organisational respondents need to be informed that their participation is voluntary. Employees often expect to remain anonymous when filling out the questionnaire and, where we have offered anonymity, we have needed to ensure this is preserved in our analysis and subsequent reporting of findings. Usually this necessitates removing identifying attributes of individuals (or organisations), for example, tables of findings not reporting less than five responses from easily identifiable sub groups.

### **Development of the questions**

When designing the questionnaire, we consider the wording of individual questions before deciding the order in which they will be asked. Where appropriate we make use of questions, or sets of questions to measure a specific concept, that have already been developed and used by other researchers, referencing our sources. These questions have already been tested in organisations and found to work by other researchers and, in addition, their use allows us to compare our findings with those of others. Questions can be either open or closed, the former not prescribing answers whilst the latter asks the respondent to select the most pertinent answer from a pre-defined list. Being pre-coded, closed questions are easier to analyse, six common types being list, category, ranking, rating, quantity, and matrix (for further details see Saunders et al., 2012). We also pay special attention to the flow and order of questions in our questionnaires making sure that it appears logical to potential respondents. This is assisted by linking phrases (Figure 1) and filter questions that, dependent upon the answer given, direct respondents to the next relevant part of the questionnaire (Figure 2).

### **Consistency of responses**

Mitchell (1996) outlines three common approaches to assessing consistency. Although the analysis for each of these is undertaken after data collection, it helps if they are considered at the questionnaire design stage. Firstly, 'test re-test' estimates of consistency are obtained by correlating data collected with those from the same questionnaire collected under as near equivalent conditions as possible. In HRD research this can cause difficulties as the questionnaire needs to be delivered and completed twice by the respondents, and it is difficult to persuade either employees or organisations to do this. It is also unlikely they will answer questions in exactly the same way. Secondly, internal consistency involves correlating the responses to questions in the questionnaire with each other. There are a variety of methods for calculating internal consistency, of which one of the most frequently used is 'Cronbach's alpha ( $\alpha$ )'. This statistic measures the consistency of responses to a set of questions (scale items) that have been combined as a scale to measure a particular concept, such as employee commitment (Meyer and Allen, 1997). It calculates an alpha coefficient with a value between 0 and 1. Values of 0.7 or above indicate that the questions within the scale are internally consistent. Thirdly, the 'alternative form', offers some sense of reliability within the questionnaire through comparing responses to alternative forms of the same question or groups of questions. This tends to be used with longer questionnaires through the use of 'check questions', which ask for the same information in a different way. For example, the check question for a respondent's length of service with an organisation would ask the year in which she or he started to work for that organisation.

### **Validity and reliability of the data**

Valid and reliable data are needed to test a theory or theories. These theories are defined as relationships between variables, usually prior to designing the questionnaire. This requires the researcher to have reviewed the literature carefully, discussed their ideas widely, and conceptualised their own research clearly prior to designing the questionnaire (Ghuri and Grønhaug, 2010). A valid questionnaire collects data that actually measures the concepts of interest, whilst one that is reliable means that these data will be collected consistently. Foddy (1994: 17) builds on this emphasising: "the question must be understood by the respondent in the way intended by the researcher and the answer given by the respondent must be understood by the researcher in the way intended by the respondent".

### **Pilot testing**

For any research there is a temptation to skip the pilot testing. However we would emphasise Bell's (2010) advice that no matter how pressed for time, it is well worth pilot testing the questionnaire as, without doing so, there is no way of knowing whether the questionnaire will work. Pilot tests help ensure that respondents will have no problems in understanding the questions and recording their answers. We

ask a group of people drawn from the organisation that we are researching to complete the questionnaire prior to the main survey; and to highlight those aspects with which they experienced difficulties. This provides us with a reasonable assessment, albeit rough and ready, of each question's validity and the likely reliability of the data that will be collected. Preliminary analysis using these pilot test data also allow us to check that the data collected will enable the research question to be answered (Saunders et al., 2012).

The number of employees with whom the questionnaire is piloted and the number of pilot tests conducted depend on the nature of the research questions, objectives, the size of the research project, the time and money resources available, and how well the questionnaire is initially designed. For most small projects the minimum number for a pilot is 10 (Fink, 2009) and for large projects between 100 and 200 responses is usual (Dillman, 2009).

### **Response rates**

As HRD researchers we depend on the willingness and cooperation of employees to respond to our questionnaires. Whilst we aim to have as high as possible response rate, response rates of between approximately 35 per cent and 55 per cent are considered realistic (Baruch and Holtom, 2008). Low response rates increase the likelihood of statistical biases (Tomaskovic-Devey et al, 1994), there being general agreement that higher response rates lead to a higher probability of the sample being representative (Baruch and Holtom, 2008). Moreover, since response rate is an important factor in assessing the value of research findings, higher response rates provide greater credibility.

Data quality is also affected by nonresponse. Complete nonresponse occurs when employees fail to return the questionnaire, whereas partial response and abandonment occur if a partially completed questionnaire is returned (Saunders, 2012). Baruch and Holtom (2008) highlight two principal reasons for not responding: 1) failure to deliver the questionnaire to the target population (for example, delivering to the wrong address, or being absent from work), and 2) the reluctance of people to respond. While the former can be eliminated easily with thorough preparation (e.g. by obtaining up-to-date addresses and ensuring attendance when delivering in person), dealing with the latter is more challenging. Employees are often subjected to questionnaires in HRD research and, where these are numerous, it can result in fatigue and refusal to respond. Mode of delivery has also been shown to influence response rates, delivery and collection; questionnaires being likely to result in the highest response rates with mail delivered questionnaires generating more responses than Web delivered questionnaires (Baruch and Holtom (2008). However, more recent research (Saunders, 2012) suggests a higher response rate for Web as opposed to mail delivered questionnaires within organisations.

Finally, questionnaires need to be introduced carefully to employees to ensure a high response rate. For self-completed questionnaires the introduction is often included

in a covering letter which explains the research purpose and why the employee should respond. For interviewer-completed questionnaires, the introduction is undertaken by the interviewer. We now illustrate the points made using Mark's personal experiences of using questionnaires for HRD research within organisations.

## **Personal experience of using questionnaire surveys within organisations**

In this section we reflect on the use of questionnaire surveys within HRD research as part of a series of four applied research projects for one large UK public sector organisation undertaken by Mark and colleagues. This organisation was responsible for the provision of strategic planning, caring services, schools, roads and libraries to a predominantly rural English county. Each included the organisation's triennial employee survey in which a similar questionnaire was used to collect data on employees' attitudes, a minority of questions being altered for each project. The key objective remained constant across the four projects: to provide a position statement of employee attitudes to working for the organisation and, following the first research project, also enable comparisons to be made with previous projects. Mark was concerned, particularly, to provide valid and reliable data to inform a range of HRD policies and associated interventions relating to training, development and employee communication. These data were not used for academic publications, other than exploring the implications for questionnaire response of using Web as opposed to mail delivery methods (Saunders, 2012).

For each of the four research projects the questionnaire comprised over 100 Likert-style questions about employee attitudes. These included established scales devised and used widely by other researchers, questions developed specifically for the organisation to measure perceptions of other aspects of employee treatment and questions only included for that year's project. Organisation specific 'demographic' questions requested personal information including area of work, gender, length of service and broad salary band alongside a final open question, which provided an opportunity for comments on issues or areas of concern.

The established scales measured employees' commitment (Meyer and Allen, 1997), trust in organisations, perceived organisational support (Eisenberger et al., 1986) and the perceived fairness (justice) of treatment (Colquitt, 2001). Using all rather than just selected items (questions) from these scales allowed the findings to be compared with those from other studies published in academic journals as well as with the data from the other projects. To ensure such comparisons were realistic, only minor modifications to improve clarity were made to scale item wording. For example in Meyer and Allen's (1997: 118) scale item "I would be happy to spend the rest of my career in this organisation" (one of eight sub-scale items measuring the affective component of commitment) the phrase "this organisation" was replaced by



the organisation's name (Figure 15.1). More substantial amendments were not undertaken as these would have raised doubts as to whether the revised statements still represented the original measure. For same reason, the possible responses were not altered, these being pre-coded. Consequently responses to all items measuring employee commitment were recorded on a seven-point scale with anchors labelled 'strongly agree' (code 7) and 'strongly disagree' (code 1), the magnitude of the code reflecting the strength of agreement.

[Ideal place for Figure 15.1 File: Chap15fig1.jpg]

**Figure 15.1: Link phrase and modified Likert style question measuring an aspect of affective commitment**

*Source:* Question layout created by SurveyMonkey.com, LLC (2014) Palo Alto, California. Reproduced with permission

For each applied research project Mark and colleagues worked with the organisation to develop additional statements related to issues of particular concern at that time. These included employees' perceptions of leadership and of support for personal and career development. Where possible these questions were grounded in theory such as the psychological contract (Coyle–Shapiro and Kessler 2002) and linked directly to the organisation's value statements expressed in their employee documentation. To minimise the need for data coding prior to analysis only one open question was included: "If there are any other areas or issues that concern you please feel free to comment below". Whilst only 19% of respondents answered this question, for one research project this still necessitated coding 264 responses with a mean length of 77 words (Saunders, 2012), the longest response being 589 words.

For both Web and mail versions, the questionnaire layout was designed to facilitate both the reading and answering of questions (Dillman, 2009). Questions were presented in a serif font on a white paper/screen background. For the Web questionnaire pale shading of alternative statements helped make reading across a screen easier. Scale anchors were repeated at the top of every screen/page, responses being collected using clickable response circles for Web, and tick boxes for mail questionnaires. For the Web questionnaire, negative impact on response rates from scrolling, was minimal as most sections fitted on one screen (Toepoel et al. 2009).

Based on previous experience, Mark adopted a two-phase pilot test of the questionnaire for each project. The first phase involved a group of eight potential respondents selected from the organisation completing the questionnaire in real time while Mark was present. Respondents were asked to note down which, if any,

of the questions were unclear or ambiguous as well as those they felt uneasy about or had difficulty in answering. Subsequently they were asked to describe how they interpreted each of these questions and offer suggestions to, for example, improve clarity. After amended questions had been agreed the questionnaire was revised. In the second phase of pilot testing the paper version was delivered by mail, and the Web version by email with a web link, to a purposive sample of 30 employees. These were selected to represent the variability of employees in terms of hierarchy and job type within the organisation. Following this stage only minor amendments to question wording were made.

Physical access to collect data using a questionnaire was granted as part of the applied research contract. However, Mark and colleagues still considered it important to gain direct support from employees for the research. Separate meetings to explain the research purpose and emphasise the independence of the researchers from the organisation were therefore held with employees' (Trades Union) representatives and senior managers. These involved a short presentation and a lengthy question and answer session during which the ways in which respondents' confidentiality would be maintained both during data collection and analysis were highlighted. Although for early projects the questionnaire was only delivered by post, for the most recent it was delivered both by mail and Web. This meant emphasising that as well as respondents not being asked to give their name, the Web questionnaire would not record respondents' IP (Internet protocol) addresses. For all four surveys it was emphasised that participation would be voluntary, this being highlighted in the letter/email accompanying the questionnaire. For the postal questionnaire, returning the questionnaire implied consent whereas, for the Web questionnaire consent was given if respondents answered 'yes' to the filter question "Do you agree to take part?" (Figure 15.2).

[Ideal place for Fig 15.2. File Chap15fig2.jpg]

**Figure 15.2: Request for consent to take part in a Web questionnaire and associated filter question**

*Source:* Question layout created by SurveyMonkey.com, LLC (2014) Palo Alto, California. Reproduced with permission

With the organisation's agreement, Mark adopted Dillman's (2009) tailored design method for the delivery and collection of the questionnaires. Fortunately, within this organisation questionnaires had been used sparingly and so over-surveying was not a problem. General information about each forthcoming survey was provided by the organisation's normal communication method, the staff intranet. Subsequently each employee received four personal contacts in addition to the questionnaire. A pre-survey notification letter was delivered using the same method as that through which the respondent would receive the questionnaire. This explained the purpose of the research and offered assurances of both anonymity and Mark and colleagues'

independence. This letter was signed by both Mark and the organisation's Chief Executive, the latter emphasising the support of the organisation's senior management team. The questionnaire was delivered with a cover letter/email. A week later, employees received a personal follow-up designed as an information sheet, reminding them to return the completed questionnaire by the prescribed date if they had not done so already. Two further reminders were posted on the staff intranet after the deadline for returns. These resulted in further returns, the impact of these for the most recent survey being illustrated in Figure 15.3. The overall response rate for the project using both web and mail delivery and collection questionnaires, was 41 per cent. Mark noted this was not dissimilar to that reported in Baruch and Holtom's (2008) analysis of response rates. However, in contrast to earlier research, response rates were significantly higher for the web than the mail questionnaires (Saunders, 2012).

[Ideal place for figure 15.3. File Chap15fig3.xlsx]

**Figure 15.3: Cumulative questionnaires returned**

*Source:* Unpublished data; details of research in Saunders (2012)

For each of the projects, Mark provided a report and presented the research findings to the organisation's management board. A separate presentation was given to middle managers, and a two-page document sent to all employees. In this document Mark summarised the findings, and the organisation's Chief Executive outlined the actions that would be taken in response. For the most recent project, these included improvements that would be made to communication processes and a range of new training programmes to ensure employees had the skills needed to embrace change.

## Discussion

This chapter has presented an overview of the design and use of questionnaire surveys in HRD research, with a particular focus on the commonly occurring methodological issues and concerns. We have illustrated these and ways of addressing them using an example of four projects with a large public sector organisation.

In summary, questionnaires collect data by asking a large number of people to respond to the same set of questions, selecting their answers from predefined choices. They are often used to collect descriptive and explanatory data about opinions, behaviours and attributes. The decision to use a questionnaire survey is

influenced by the research question and objectives, and the resources available. The questionnaire design differs according to how it is delivered.

Prior to designing the questionnaire, it is important to know precisely what data need to be collected to answer the research question and meet the research objectives. Invariably the validity and reliability of the data collected and response rate achieved depend largely on the design of the questions, the structure of the questionnaire, and the rigour of the pilot testing. When designing a questionnaire we recommend the wording of individual questions is considered prior to the order in which they appear. Where suitable, we recommend that questions already in other existing questionnaires are used, subject to permission being obtained and suitable acknowledgement being given. In our experience we have found that, wherever possible, closed questions should be pre-coded on the questionnaire to facilitate data input and subsequent analyses.

Within questionnaire design, the order and flow of questions needs to be logical to the respondent. This can be assisted by filter questions and ensuring the questionnaire layout is easy to follow and responses are easy to fill in. Ethical issues need to be considered at the design stage to ensure confidentiality and anonymity where offered.

Consistency of the data should also be considered at the questionnaire design stage. Three common approaches are test re-test estimates, alternative forms of questions, and internal consistency. Related to this is the internal validity and reliability of the data collected. A valid questionnaire enables accurate data, which measure the concepts; a reliable questionnaire enables these data to be collected consistently. Pilot testing the questionnaire is therefore of paramount importance to ensure that the respondents will have no problems in understanding the questions and recording their answers. Consideration of these factors at the design stage of the questionnaire is likely to improve response rates, helping the researcher to achieve a high response rate providing greater credibility to research findings.

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## **Annotated guided reading**

Dillman, D.A. (2009) *Internet, Mail and Mixed Mode Surveys: The Tailored Design Method* (3<sup>rd</sup> ed). New York: Wiley.

Although written for a general audience rather than HRD researchers, this book provides a vast amount of detail on how to design and administer questionnaires and the likely implications of various design choices.

Saunders, M. N. K. (2012) Web versus Mail: The Influence of Survey Distribution Mode on Employees' Response. *Field Methods*, 24(1), 56-73.

his paper offers insights on designing questionnaires for HRD research within organisations as well as an assessment of the impact of delivering questionnaires by the Internet (Web) rather than by mail.

Saunders, M. N. K., Lewis, P. and Thornhill, A. (2012) *Research Methods for Business Students* (6<sup>th</sup> ed). Harlow: Pearson Education.

Chapter 11 of this book provides useful insights into the use of questionnaire surveys in business research with numerous examples. Chapter 12 outlines how to prepare data (including that from questionnaires) for, and undertake, statistical analysis.