# 8 Questionnaire

A questionnaire is a written list of questions. A questionnaire is a device used to deliver questions to respondents, a device to record their answers and get them back.

The role of a questionnaire is to minimize a possibility to get incorrect, distorted or false information and to get relevant and comparable data. This guaranteed by the structure of the questionnaire, questions and their sequencing in the questionnaire. The questionnaire serves as a guideline in answering questions and obtaining data. Standardized questionnaire (the same questions in the same order) allows a standardized way of collecting data, which allows to summarize, sort, compare and generalize answers of respondents. A questionnaire thus can be structured or less structured (Kumar, 2011, p. 145-148).

### The following data can be obtained by a questionnaire:

## \* Identification data

This data contains name and address of respondents, date and time answering the questions, place of contact (filling a questionnaire) and name of the interviewer. This data does not have to be necessarily in the questionnaire. It is a part of questionnaire only if there is a need to contact the same respondents again.

### Classification data

This data allows to classify and describe respondents by a certain characteristics, such as demographic (gender, age, social status), socio-economic (education, employment, income) or geographical (place of living) ones. This information can be used to control the representativeness of a sample, as well. This data is usually placed at the end of the questionnaire.

#### ✤ Data about a subject of the research

This data reflects objectives of the research and represent the main part of the questionnaire. The data can be classified as:

## • "hard data" (facts)

It is data that can be exactly and unambiguously stated because it simply pronounces that something either exist or does not exist, a respondent owns, uses, or has been somewhere. It is quantitative in its character suitable for quantitative analysis.

### • "soft data"

This data concerns opinions, attitudes, behaviour and/or motives of respondents answering a question "why... ?" As the data can be influenced by mood of respondents, it is less reliable and should be used for decision-making with a care. Analysis of this data also requires attention and skills (Simova, 2010a).

# 8.1 Questionnaire design

The questionnaire is probably one of the most common research tools used by the survey data collection method mainly because of its simplicity, versatility and an efficient way of gathering data from a large sample (Moser and Kalton, 1971; Breakwell, Hammond and Fife-Schaw, 1995). It is a popular device of data collection because the data can be obtained quite easily and responses are also coded easily (Sekaran, 1992). Although it may seem simple to use and analyse a questionnaire, it is not very simple to design (Easterby-Smith et al., 1991). As a questionnaire affects the response rate and the reliability and validity of the data, it is necessary to ensure that the questionnaire will collect the precise data specified by the research questions and research objectives (Oppenheim, 1992; Fife-Schaw, 1995b; Saunders et al., 1997). The things to consider before designing a questionnaire are:

- the type of data collection technique and instruments used in the research
- the method of approach to respondents
- the build-up of question sequences
- the order and type of questions used in the questionnaire (Oppenheim, 1992).

The principles of questionnaire design relate to how the questions are worded, what they measure and how the entire questionnaire is organised. Although there is no substitute for experience when it comes to preparing a good questionnaire, there are some general principles in questionnaire construction that help to minimise biases in the research (Shaughnessy and Zechmeister, 1990).

## The principles refer to the following areas:

- the purpose of the questionnaire
- questionnaire administration
- the wording of questions

- principles of measurement (how the variables will be categorised, scaled and coded after the questionnaire responses are received)
- the general appearance of the questionnaire
- pilot testing (Sekaran, 1992; Saunders et al., 1997).

These important aspects of questionnaire design are schematically depicted in Figure 1 below.



Figure 1: Principles of questionnaire design

Source: Sekaran (1992, p. 202)

## 8.1.1 The purpose of the questionnaire and questionnaire administration

The questionnaire must be designed along with the research questions and objectives, conceptual framework and research design. The important aspect to be considered when designing a questionnaire is the way of its administration. The choice of the way of questionnaire administration depends on the character of the collected data, its extent and availability. It is also a matter of the research, its extent and time and financial possibilities of the research study.

A questionnaire can be administered in the following ways:

- Personally face-to-face by interviewer
- By telephone
- By mail (or electronically)

Each of these techniques has different requirements on the questionnaire design. The highest demand is on **a self-administered questionnaire** (answers to the questions are recorded by respondents themselves) sent to respondents by mail or electronically. In case of a self-administered questionnaire, there is no one to explain the meaning of questions to respondents. This is why it is important that the questions and layout of the questionnaire are clear and easy to understand.

The interviewer-administered questionnaire (answers of respondents are recorded by the interviewer) administered by telephone or face-to-face does not have to meet s high requirements as a self-administered questionnaire since the interviewer is familiar with the questions and the questionnaire layout. The questionnaire should shorter, as well (Simová, 2010b, Kumar, 2011).

# 8.1.2 Principles of the wording of questions and measurement

In any questionnaire, the sequence of questions should be easy to follow. In the sense of question sequencing, the funnelling technique is usually applied in the questionnaire (Sekaran, 1992). The questions are sequenced from:

- general (impact of the environment) to
- specific (impact of internal factors consumers, competition and distributive structure on the retailer itself) questions.

A researcher should be sure that all questions in the questionnaire are important and related to the topic. Questions that are interesting but unimportant to the research should be excluded since they only increase the cost and time of data recording, processing and analysis.

Long and complicated questions should be avoided since they are less understandable. Questions should be designed as positive, i.e. avoiding a negative formulation. Conjunctions "and" / "or" should also be avoided. It is not clear what the answer "yes" or "no" means. For example, "Do you prefer to have your holiday in summer or winter?" The questions should be designed with respect to data analysis. The types of questions used in the questionnaire also matter. There are differences in the quality and content of answers to various type of questions. For example:

- "Do you shop in Tesco?" Answer: Yes No.
- "How often do you shop in Tesco?" Answer: Very often 1 ...... 5 very rare.... 6 Not at all.

Questions that are heavy on memory or knowledge should also be avoided. The words used in questions should be clear, understandable and have the same meaning to all respondents.

A sensitive question or a question that respondents may feel hesitant about answering should be prefaced by an interactive statement explaining the relevance of the question. It is good to use a different font for these statements to distinguish them from the actual questions.

## 8.1.3 General appearance of the questionnaire and pilot testing

The layout of a questionnaire should be such that it is easy to read and pleasant to the eye. A questionnaire should be developed in an interactive style, which means that respondents should feel as if someone is talking to them. Before collecting the data, all questionnaires should be pilot tested in order to detect weaknesses in the questionnaire design.

# 8.2 Reliability and validity

The task of questions in a questionnaire is to measure a particular variable (Oppenheim, 1992). Measurement of the variables<sup>1</sup> is thus an important aspect of the research design (Sekaran, 1992).

While some objects can be physically measured without any problems, the measurement of subjective feelings, attitudes and perceptions becomes difficult. These factors are too abstract to be considered "things that can be seen or touched" (Carmines and Zeller, 1992, p. 2). Since there is no direct access to these mental constructs, they have to be measured indirectly. As mentioned before, the measurement of these variables depends upon subjective estimation and thus can never be perfectly accurate (Breakwell et al., 1995).

<sup>&</sup>lt;sup>1</sup> Measurement of variables was defined by Stevens (1951) as the assignment of numbers to objects, events or observations according to rules.

The technique to overcome this problem is to simplify the abstract concepts (e.g. consumer's perception) to observable behaviours and characteristics exhibited by those who possess these abstract qualities. Defining the concept (perception) operationally, behavioural dimensions, facets or properties denoted by the concept then can be categorised into observable and measurable elements (Cooper and Emory, 1995). This does not consist of delineating the reasons, antecedents or consequences of the concept; it just describes the observable characteristics of the concept in order to be able to measure it (Sekaran, 1992). For this purpose, certain scales have been devised. By employing a scale procedure, a person can be assigned a numerical score to indicate his or her position on a dimension along which individual attitudes can be ranged (Moser and Kalton, 1971). However, the question is how good the scale is and which scale to use, which scale has the greatest possible accuracy for the concept of the study (Breakwell et al., 1995).

To assess how well each question or scale measures a particular variable, the concepts of reliability and validity were derived from measurement theory (Carmines and Zeller, 1979; Breakwell et al., 1995). The reliability and validity of the data depend, to a large extent, on the design of the questions, the structure of the questionnaire and the rigor of the pilot testing (Saunders et al., 1997). *Reliability* is concerned with stability and consistency with which the measurement measures the concept (the "goodness" of a measure), *validity* tests how well an instrument measures what it is intended to measure (Carmines and Zeller, 1979; Sekaran, 1992).

The empirical measurement of any phenomenon always contains a certain amount of error that can be large or small, but it is always present to some extent (Carmines and Zeller, 1979). Both, reliability and validity are associated with errors that affect empirical measurement. Reliability is inversely related to the amount of random error which can be systematic (built into the test or questionnaire itself) or unsystematic error (external to the test itself). Random errors appear due to coding, ambiguous instruction, interviewer fatigue and so on. Validity depends on the extent of non-random error that has a systematic biasing effect on measuring instruments. While reliability is basically an empirical issue (focusing on the performance of empirical measures), validity, in contrast, is usually an issue orientated more towards a theoretical concept of measurement (Carmines and Zeller, 1979). Tests of reliability and validity should be made at the pilot stage of an investigation (Easterby-Smith et al., 1992).

#### 8.2.1 The Reliability assessment

A test or scale is reliable when repeated measurements made by it under constant conditions will give stable results. The greater the reliability, the greater the accuracy (Breakwell et al., 1995). As reliability is concerned with stability and consistency, there are a few methods to measure both, the stability of measures (test-retest and parallel-form methods), and the internal consistency of measures (interitem consistency, split-half and interrater reliability methods) (Moser and Kalton, 1979; Sekaran, 1992)

The most widely used measure of reliability is Cronbach's coefficient alpha that measures internal consistency of the multipoint-scaled items. Alpha is related to the average of all the inter-item correlations. The higher the correlations between the items, the greater the internal consistency. Alpha is generally assumed to be the most accurate estimate of reliability available within the classical test approach. Although it gives a low estimate of reliability, the actual reliability may be lightly higher (Breakwell, et. al, 1995). Nunnally (1978; cited in Breakwell et. al, 1995) suggests that the alpha coefficient should be greater than 0.7 to assume sufficient reliability for a research tool. The reliability also depends on the number of items in the test - the more the items of sufficient quality the greater the reliability. It should be noted that reliability coefficients apply only to the sample studied and should not be generalised from one sample to another.

#### 8.2.2 Validity assessment

Although reliability is necessary, it is not sufficient (Robson, 1993). A reliable test or scale does not necessarily measure what it is set out to measure. Therefore it is important to estimate the validity of the test. Though it is easy to explain what is meant by validity, it is exceedingly hard to measure it in practice (Moser and Kalton, 1971). Assessing the validity of the test requires a precise knowledge of the psychological domain under consideration together with a clear operational definition of each characteristic being measured (Breakwell et. al, 1995). Validity may also be expressed as a correlation coefficient, but it has a different meaning from that of the reliability coefficient (Oppenheim, 1992).

There are several types of validity tests that can be grouped into the following essential approaches used to measure the validity:

- content validity (face validity),
- criterion-related validity (concurrent and predictive validity),
- construct validity (Moser and Kalton, 1979; Sekaran, 1992; Breakwell et al., 1995).

*Content validity* is subjective evaluation of the complexity and relevance of the test or scale items. *Criterion validation* involves testing the hypothesised relationship of the test with external criteria. *Construct validity* shows how well the test links up with a set of theoretical assumptions about an abstract construct such as intelligence, image, perception and the like (Oppenheim, 1992). Construct validation is important for multiple item tests or scales where the internal structure of the test is examined. In this sense Cronbach's alpha (reliability coefficient) may be viewed as a kind of construct validation (Breakwell et al., 1995). In the case that the items form unidimensional or multidimensional scales, multivariate data analytic methods, i.e. item response theory and factor analysis can be used (Breakwell et al., 1995).

#### 8.2.3 Reliability and validity in terms of methods of data collection

This chapter presents reliability and validity aspects associated with the methods of data collection used in the research study focused on clothing retail development.

#### **Reliability and Validity in the Structured Observation**

The main threats to reliability and validity in structured observation are subject error, time error and observer effects (Saunders et al., 1997). To the researcher's knowledge, there was no subject error and observer effect in the research. The subject of observation (a store selling clothing) was clearly defined and all clothing stores in selected towns were involved in the research. There was no interaction between observer and the subjects of observation (clothing retailers). In the sense of time error, it should be noted that the structure of clothing retailing was changing continuously over the study period. However, practically it was not possible to monitor the changes in the structure all the time. To minimise the effect of time error, the research was conducted in the same time of the year (in November) every year of the study.

#### **Reliability and Validity in the Interview**

Reliability in the interview is concerned with interviewer and interviewee (or response) biases (Easterby-Smith et al., 1991; Saunders et al., 1997). Interviewer bias is related to the comments or non-verbal behaviour of the interviewer and to how responses are interpreted and recorded by the interviewer. Interviewee bias may be caused by the perception of the interviewer and/or by unwillingness of the interviewee to reveal and discuss certain aspects of the topic. The time-consuming requirements of the interview process may also result in a reduction in the willingness to take part in the interview and thus bias the sample (Robson, 1993; Saunders et al., 1997). However, presenting all respondents with the same standardised questions, carefully worded after piloting allows a high reliability of response to be obtained (Robson, 1993).

Validity refers to the extent to which the researcher has obtained full access to the knowledge and meanings of the respondent (Easterby-Smith et al., 1991). It can be further enhanced by covering the topics from a few angles, asking clear questions and probing the meanings.

All these aspects were considered and an effort was made to minimise the biases in order to increase reliability and validity of the interview. The interview was conducted only with shop managers or owners who could provide the requested information in his or her office. The interviewees were assured that the main focus of the research was on the past and information obtained from them was confidential. This was also the reason why retailer answers were not even tape-recorded. The data were recorded on the recording sheet. The participants were provided with a list of the interview themes (questions) including the diagram (see Figure 5.4) that explained the logical sequence of the interview. The questions were clearly phrased (their meanings were explored and verified in the in-depth interview) and some explanations in brackets were used to ensure that all participants understood the questions in the same way. Four open-ended questions were still used to explore the opinions of retailers on changes in the clothing retailing.

#### **Reliability and Validity in the Questionnaire**

To assess the reliability of scales used to measure the consumers' perceptions of different formats of clothing retailers, the reliability coefficient (Cronbach's alpha) was used. The reliability test was executed in the samples of the research on consumers' perceptions conducted in 1995 and 1999. According to the results of the reliability analysis using Cronbach's alpha (see Table 5.4), the scales used to measure the perceptions of consumers appeared to be relatively reliable.

 Table 1: Reliability Test (Alpha) of Scales Used to Measure Consumers' Store

 Perceptions

Type of clothing retailer	Alpha coefficient	
	1995	1999
Department store	0.79	0.84
Chain store	0.79	0.87
Boutique	0.79	0.85
Discount store	0.79	0.83
Total	0.85	0.87

To ensure the validity of the scales, the literature on consumers' store choice, image and perception was studied and used as a methodological device in the research.

# Summary

A questionnaire is probably one of the most common research tools used by the survey data collection method mainly because of its simplicity, versatility and an efficient way of gathering data from a large sample A questionnaire is a written list of questions. A questionnaire is a device used to deliver questions to respondents, a device to record their answers and get them back.

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that help to minimise biases in the research. As a questionnaire affects the response rate and the reliability and validity of the data, it is necessary to ensure that the questionnaire will collect the precise data specified by the research questions and research objectives.

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