CHAPTER 4

Methodology

4.1 INTRODUCTION

This chapter sets out the design of the empirical portion of the research study. The empirical portion is of particular importance for this study as it is crucial for the identification of core standards for South African editors. The outlining of a clear methodological procedure for an empirical investigation is an important step in research as it helps to focus a study and prevent potential problems during the actual investigation. For this reason, this chapter sets out the methodology for the empirical portion of the research study.

Specifically this chapter focuses on the data-gathering process, the sample and sampling procedure, the design of the research instrument and the analysis of the data gathered. Section 4.2 provides an overview of the empirical portion of the study and briefly summarises the methodology followed. Section 4.3 discusses the design and administration of the research instrument with particular attention to the generation of questionnaire items, question format and layout and phrasing of the questionnaire. In addition, Section 4.3 discusses the pre-testing of the questionnaire. Section 4.4 outlines the sampling procedure employed and explains how the sample was selected. Lastly, Section 4.5 identifies and discusses the statistical methods applied to the data sets and also outlines the procedure for the semi-Delphi study.

4.2 OVERVIEW OF THE EMPIRICAL INVESTIGATION

As indicated in Chapter 1, in order to achieve the objectives outlined for this study, the study includes a literature review and an empirical study. The empirical part of this investigation is of key importance, as it contributes directly to the development of a set of core editing standards. The empirical portion of the study comprises two main phases.

The first phase involved the design and administration of a survey questionnaire. The aim of the survey was to determine which tasks form part of the daily working life of editors from all sectors of the industry. These tasks were generated from the sources consulted during the literature review (see Chapter 3). The data gathered from the literature review were used to formulate a comprehensive list of 92 editing tasks, which was re-worked into a questionnaire. The questionnaire was pre-tested in three stages and then emailed to the sample. The results from the first phase of the empirical research were then analysed using various statistical

techniques. The results from the analysis were then used to generate a final list of tasks and skills that formed the basis of the second phase of the empirical research.

The second phase of the empirical research comprised a semi-Delphi study. The semi-Delphi technique is a method used to survey experts. The results are then averaged and the survey is repeated until consensus is reached (Churchill & Peter, 1995:146). The completed inventory of core tasks identified through the survey in the first phase was reformulated as a list of core editing standards, which formed the basis for the semi-Delphi study. The list of core standards was sent to the participants in the semi-Delphi study, who were asked to make any general comments on or suggestions for the improvement of the structuring and layout, grouping of items, clarity of items, and overall presentation. The aim of this phase was to refine and finalise the set of standards, based on the opinions of academics and practising editors.

4.3   DESIGN OF THE RESEARCH INSTRUMENT

The process for designing a research instrument is a significant part of conducting research and is a step that requires careful consideration. Churchill (1995:397) outlines the following procedure for the design of a questionnaire:
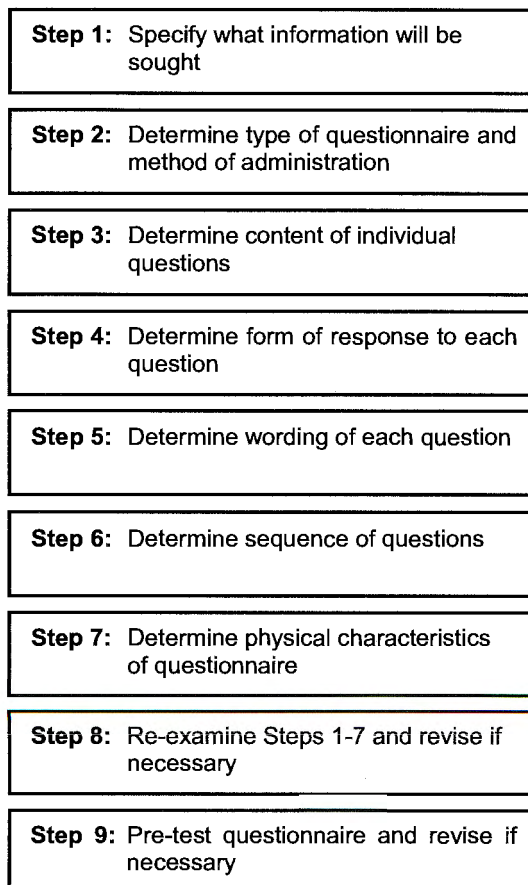
Step 1: Specify what information will be sought
Step 2: Determine type of questionnaire and method of administration
Step 3: Determine content of individual questions
Step 4: Determine form of response to each question
Step 5: Determine wording of each question
Step 6: Determine sequence of questions
Step 7: Determine physical characteristics of questionnaire
Step 8: Re-examine Steps 1-7 and revise if necessary
Step 9: Pre-test questionnaire and revise if necessary

Figure 4.1: Procedure for developing a questionnaire

Proctor (2000:126) states that when conducting research it is important to select a data-collection method best suited to the situation. For this study, a self-administered, email survey was chosen as the most appropriate data-collection method. The benefits of using this type of data-collection method include cost-effectiveness, relative speed, wide geographical reach and ease of use (respondents can complete the questionnaire at their own convenience) (Maree & Pietersen, 2007a:157).

The questionnaire used in this study was designed to identify which tasks and skills are salient in the everyday working life of South African editors. The questionnaire consisted of three sections. In Section A, respondents were asked to provide various biographical details. These details included the industry sector in which the respondent mostly works, number of years' editing experience, language in which the respondent mostly edits, whether the editor is accredited, and finally whether the respondent works as an in-house editor or as a freelancer. No personal details such as name or contact details were solicited. Sections B and C comprised the list of items identified during the literature review. Section B dealt specifically with the textual functions that editors fulfil, while Section C focused on the extra-textual skills associated with editing.

A covering letter explaining the purpose and the importance of the research was included in the questionnaire. In addition, the covering letter provided instructions for completing the questionnaire, as well as a confidentiality statement assuring respondents that the data gathered would be published in the form of statistical aggregates only and that no individual respondent would be identified.

4.3.1   Generation of questionnaire items

The questionnaire items were generated from the literature review in Chapter 3. As pointed out above, these items were grouped into two main categories: textual tasks and extra-textual skills. Each category was then further divided into sub-categories. The sub-categories under textual tasks reflect the various dimensions of editing, or the types of editing that an editor may do, while the sub-categories under extra-textual skills distinguish the different kinds of skills that editors require. The textual-tasks category was divided into five sub-categories: copyediting, stylistic editing, structural editing, content editing and proofreading. The extra-textual skills category was divided into four sub-categories: technical skills, personal and interpersonal skills, procedural skills, and specialised knowledge.

In total, 92 items were identified in the literature review as tasks and skills that are relevant to editors' work. These 92 items were then formulated into 115 questions. The difference between

the number of items identified in the literature review and the number of questions in the final questionnaire is the result of the fact that some items from the initial list either needed to be combined into one question or separated into two or more questions in the questionnaire. In most instances, this was done to ensure that no items in the questionnaire were ambiguous or double-barrelled. For example, in the literature review, the first item in the copyediting sub-category reads "Ensure accuracy and consistency of spelling". This item was split in the questionnaire to form two separate items "Correcting spelling errors" and "Ensuring consistency of spelling", thus avoiding a single double-barrelled question. Furthermore, during the first stage of the pre-test (see Section 4.3.5), recommendations were made to insert items that reflect a querying function, which also affected the number of items in the questionnaire.

4.3.2 Question format

The questionnaire consisted of structured-undisguised questions, where the questions are presented in the same order and wording to all respondents (Churchill, 1995:351). The structured-undisguised question format was selected because it is simple to administer, tabulate and analyse, and is easy for respondents to answer (Churchill, 1995:351).

Closed questions, utilising the fixed-alternative response, were selected for the questionnaire. The responses were therefore limited to the alternatives provided. Maree and Pietersen (2007a:163) state that the advantages of this type of question include that it is easy and quick to answer, and that coding and statistical analysis are easily done. Churchill (1995:352) adds that fixed-alternative responses often assist in making a question clearer as they provide a frame of reference that is obvious from the alternatives.

4.3.3 Layout, phrasing and length of questionnaire

The layout, phrasing and length of a questionnaire are important in survey research, as a poorly designed questionnaire could result in fewer responses. Maree and Pietersen (2007a:159) state that when designing a questionnaire, a researcher must pay attention to the appearance of the questionnaire, the question sequence, the wording of questions and the completion time.

As far as designing the layout of a questionnaire is concerned, McDaniel and Gates (2002:37'1) advise that general questions should be asked first, while questions that require work should be asked later. The questionnaire for this study followed this guideline. Section A, which solicits biographical information, was placed first as these types of questions are generally easier to answer. Section B dealt with the textual tasks of editing. These questions were placed in the second section since textual editing tasks are conceptually overtly associated with editing (i.e.

they are prototypical editing tasks), which means that these questions should not pose particular difficulty for respondents. Section C comprised questions dealing with the extra-textual skills, and probably required somewhat more thought from the respondents, since many of these skills are not prototypically associated with editing.

Churchill (1995:420-428) advises that questions should make use of simple words and should not be leading, double-barrelled or contain ambiguities. The questions should therefore be clear, concise and specific. Care was taken to ensure that the questions were short and to the point. Furthermore, each question solicited a response to only one task, and so avoided any problems relating to double-barrelled questions. To further aid in clarifying questions, examples and descriptions were provided where necessary. Owing to the multilingual nature of the South African environment and the fact that respondents were not limited to English mother-tongue speakers, care was taken to ensure that the questions were phrased in accessible English. The clarity, accessibility and formulation of the questionnaire and its items were tested during the second stage of the pre-test, where three respondents who are not mother-tongue speakers of English were requested to complete the questionnaire (see Section 4.3.5).

Despite the fact that the questionnaire contained a relatively high number of items,[1] care was taken to ensure that the questionnaire could be completed comfortably and accurately within the prescribed 20-minute timeframe (Maree & Pietersen, 2007a:159). Responses were captured using electronic drop-down menus that allowed the respondents to select their response with the click of a mouse without having to type out answers, thereby speeding up the questionnaire completion time. Furthermore, to ensure that the questions and their appropriate drop-down menus were easily accessible, the questionnaire was structured in table format.

4.3.4   Measurement scales used in the questionnaire

The aim of the questionnaire was to measure how often editors perform certain functions in their editing work in order to identify which tasks are central or relevant to the role of all editors and should form part of a set of core editing standards. According to Bevan-Dye (2005:218), "measurement, by its very nature, necessitates the application of some type of scale". Maree and Pietersen (2007a:167) state that in survey research, scales are used to measure the strength of feeling or attitude of respondents. A number of measurement scales for this type of research exist. According to Churchill (1995:467-473), as well as Aaker and Day (1990:284), the

---

[1] Maree and Pietersen (2007a:159) advise that structured questionnaires should not contain more than 120 items. The 115 items listed in the questionnaire for this study are therefore within the prescribed number of items for structured questionnaires.

three most widely used attitude measurement scales are the summated rating scale (or Likert scale), the semantic differential scale and the staple scale.

The Likert scale was selected for this study. The Likert scale allows respondents to specify "a level of agreement or disagreement with statements that express a favourable or unfavourable attitude toward the item under study" (McDaniel & Gates, 2002:328). The Likert scale was deemed appropriate for this study as it allows the respondents to consider one item at a time with the scale running from one extreme to the other (McDaniel & Gates, 2002:328). Furthermore, the Likert scale was selected because it is relatively easy to construct and administer (Aaker & Day, 1990:287).

For the study, two four-point Likert scales were used, with response options ranging from "Very often" to "Almost never" in Section B, and "Very important" to "Unimportant" in Section C. The four-point scale was selected specifically to ensure that there was no possibility of a neutral answer. Despite the fact that Churchill (1995:352) warns against excluding a "Neutral" or "No opinion" option in measurement scales, it was decided that the four-point scale was sufficiently appropriate for this study, as editors either do or do not perform the listed tasks.

The initial questionnaire (before the pre-test) is included as Appendix A.

4.3.5   Pre-testing the questionnaire

Churchill (1995:436), and Aaker and Day (1990:257) emphasise that pre-testing a questionnaire is a vital step in the research process as it assesses how well the questionnaire performs under actual conditions of data collection and ensures that the expectations of the researcher are met, particularly in terms of the information that needs to be obtained from the questionnaire. According to Aaker and Day (1990:257), "[f]irst drafts of questionnaires tend to be too long, often lacking important variables, and [are] subject to all the hazards of ambiguous, ill-defined, loaded or double-barrelled questions". The purpose, then, of the pre-test is to ensure that the questionnaire does not contain any problems or errors, and that it solicits the data that it is intended to collect. For this study, pre-testing was undertaken in three stages to ensure the face and content validity of the research instrument.

Face validity refers to the extent to which an instrument looks valid (Pietersen & Maree, 2007b:217). According to Aaker and Day (1990:298), face validity "is invoked when the argument is made that the measurement instrument so self-evidently reflects or represents the various aspects of the phenomenon that there can be little quarrel with it". Determining the face validity of an instrument therefore does not involve quantifying data, but rather relies on the

subjective analysis of the instrument's appearance based on scrutiny by experts in the field (Pietersen & Maree, 2007b:217).

Content validity refers to the extent to which an instrument "measures the complete content of the particular construct that it is set out to measure" (Pietersen & Maree, 2007b:217). Therefore, establishing the content validity of an instrument involves determining whether the instrument fully reflects the content of the topic under investigation. In order to establish the content validity of an instrument, a provisional version of the instrument is presented to experts in the field, who then comment on the completeness of the content of the instrument (Pietersen & Maree, 2007b:217).

During the first stage of the pre-test, three experienced researchers (two of whom are also experienced editors) were asked to check the questionnaire for any potential problems or errors. The aim of this initial stage of the pre-test was to establish the face validity of the research instrument. In addition, the three researchers were asked to comment on the content of the questionnaire and to indicate if any editorial tasks had been excluded from the questionnaire. The initial questionnaire was then amended based on the suggestions made by the researchers. The changes made included alterations to the word choice and phrasing of the items. It was also suggested that some items be combined, while others be split. After making the changes, the questionnaire was re-sent to the researchers, after which it was approved.

The second stage of the pre-test was conducted in order to establish the content validity of the research instrument and to identify any problems that may be experienced by the study sample. As advised by Aaker and Day (1990:257) and Pietersen and Maree (2007b:217), the respondents for this stage of the pre-test were selected because they are experts in the field of editing and also because they are representative of the sample population. The respondents comprised two freelance editors and two in-house editors. In addition, each respondent represented one of the four sectors of the editing industry identified in this study. In terms of language representation, the four respondents worked in English, Afrikaans, Xhosa and South Sotho, respectively. The questionnaire was emailed to the respondents, who were asked to complete the questionnaire, and then to comment on the formulation of the questionnaire items, the length of the questionnaire and any problems that they experienced while completing the questionnaire. Finally, the respondents were also asked to indicate if there were any items missing from the questionnaire that formed part of their daily working life as an editor. To facilitate this, an "Other" option was provided at the end of each category that allowed the respondents to list any additional items. The responses received from the respondents were positive and only minor changes were suggested. These changes included clarifying certain

terms (for example, explaining what an in-house editor does) and eliminating the use of abbreviations (for example, replacing "DtP" with "desktop publishing").

The third stage of the pre-test involved sending the questionnaire to an experienced information-technology practitioner, who is also an experienced researcher. During this stage, the questionnaire was scrutinised for any errors in design and any other potential technical errors that may be problematic when processing the data that the questionnaire would eventually collect. This stage of the pre-test was thus also conducted in order to ensure the face validity of the research instrument. The comments received during this stage of the pre-test included changing the phrasing of the answer options to further clarify the distinctions in favourability, for example changing "Seldom" to "Rarely" and "Never" to "Almost never".

The final questionnaire, which reflects the changes made during the pre-testing stage, is included as Appendix B.

4.4   SAMPLING PROCEDURE

According to Churchill (1995:574), the development of a good sampling plan is essential for survey research, as this helps to eliminate or address any potential problems prior to the sampling process. McDaniel and Gates (2002:398) describe a seven-step sampling procedure for researchers to follow. This seven-step procedure includes defining the population of interest, selecting the data-collection method,[2] choosing the sampling frame, selecting the sampling procedure, determining the sample size, selecting the sample elements, and executing the sampling plan.

4.4.1   Definition of the target population

The main purpose of survey research is to learn and draw conclusions about a specific population. It is therefore vital to specify the characteristics of a study's target population at the outset (Aaker & Day, 1990:350).

For the purposes of this study, the target population is defined as all practising South African editors, from all four industry sectors (editing for book publishing, editing for the mass media, academic editing and technical editing), in all eleven official South African languages. Furthermore, against the background of the ambiguity of the job title "editor" (see Chapter 2), "editor" in this study refers specifically to those individuals who make corrections and

---

[2] The selection of the data-collection method has already been discussed in Section 4.3, and will therefore not be discussed further in this section.

amendments to a text (including the content, language, graphics and layout) in order to ensure that it is accessible and appropriate for the readers and users of the text. The individuals who fulfil this function are, in certain industry sectors, also referred to as copyeditors, sub-editors, language editors and text editors.

4.4.2   Selection of sampling frame, sampling method and sample size

As pointed out in Chapter 3, the South African editing industry is diversified in that the industry has a number of sectors. No centralised database of editors exists, and therefore it was not possible to access a list containing the names of all editors in South Africa. It is consequently unfeasible to draw a sample for this study from one sampling frame. To solve this problem, the population for the study was stratified into the four industry sectors identified in Chapter 3. Stratified sampling allows populations to be divided into non-overlapping strata based on available information, such as industry sectors (Maree & Pietersen, 2007b:175). Probability sampling, such as simple-random sampling, can then be conducted on each stratum. An additional advantage of stratified sampling is that it "addresses the problem of non-homogeneous populations in the sense that it attempts to represent the population much better than can be done with simple-random sampling" (Maree & Pietersen, 2007b:175). Five sampling frames were used to draw the sample for each of the four strata, as outlined below:

- the directory of members of the Publishers' Association of South Africa (PASA) (2009) served as the sampling frame for editors working in the book-publishing sector,
- the Average Issue Readership of Newspapers and Magazines (SAARF, 2008) served as the sampling frame for editors working the mass-media sector, and
- the mailing lists of the South African Translators' Institute (SATI), the Professional Editors' Group (PEG) and an established language-services agency were used as the sampling frame for editors working in the academic and technical-editing sectors.

It should be noted that the various contexts from which the five sampling frames were drawn necessitated the use of different sampling methods for the sample selection for each stratum. However, care was taken to ensure that the application of different sample methods did not jeopardise or bias the sample-selection process. Furthermore, the application of different sampling methods was limited to only two types. The simple-random sampling procedure was used for the book-publishing and mass-media strata. This ensures that every member of the population has an equal chance of being selected (McDaniel & Gates, 2002:409). The self-selection sampling procedure was employed for the academic-editing and technical-editing sector strata.

PASA's directory of members (PASA, 2009) served as the sampling frame from which the editors working in the book-publishing sector were drawn. The directory contains 184 current members and provides contact details and website addresses for the various publishing houses. A probability, simple-random sample of 50 publishing houses was selected from this list. The sample-element selection of 50 was deemed sufficient given that many publishers employ freelance editors in addition to in-house editors, and therefore there may be some overlap between the editors working for various publishing houses. It should also be noted that most publishing houses (with the exception of smaller, privately owned publishers) employ more than one editor and so the number of editors derived from this sample, in all likelihood, exceeds 50. The sampling frame for the book-publishing sector of the industry is reflected in Appendix C.[3]

The Average Issue Readership of Newspapers and Magazines (SAARF, 2008) was used as the sampling frame for the mass-media sector. This list, which includes all major newspaper and magazine titles published in South Africa, contains 194 titles. A probability, simple-random sample of 50 titles was selected from this list. Therefore, equal allocation sampling was conducted on the two sampling frames for the book-publishing and mass-media sectors, with a sample size of 50 elements selected from each. As is the case with book publishers, more than one editor is employed by most mass-media publications; therefore the number of editors derived from this sample, in all likelihood, exceeds 50. The sampling frame for the mass-media sector of the industry is reflected in Appendix D.[4]

The mailing lists of SATI, PEG and an established language-services agency served as the sampling frame for editors working in the technical-editing and academic-editing sectors. No lists of technical editors and academic editors are available, and these editors are often employed on a freelance basis. Many editors in South Africa (freelance and in company employment) are members of SATI and PEG, and the membership of these two organisations thus provide a sampling frame for editors generally. The mailing list of the particular language-services agency was selected as part of the sampling frame for the academic- and technical-editing sectors because the agency deals mostly with documents that are academic and technical in nature. In addition, this particular agency, while based in Gauteng, renders services countrywide.

SATI's membership totals 690; however, it should be noted that this includes translators, interpreters, editors and other language practitioners from similar fields, and therefore the number of members on SATI's mailing list is not equal to the number of editors on its mailing

---

[3] The publishing houses that appear in bold formed part of the sample.

[4] The publications that appear in bold formed part of the sample.

list. PEG has 340 members on its mailing list, while the language-services agency has 68 members. The self-selection sampling technique was used for the three mailing lists. Self-selection sampling is employed when sample elements select themselves as part of the sample. This form of sample selection was necessary when sampling from the SATI, PEG and language-services agency mailing lists since it was not possible to access the contact details of the editors on the three mailing lists, and since it was not possible to determine beforehand which editors had done technical and academic editing.

4.4.3   Sample-element selection and sample-plan execution

To select the sample elements for the book-publishing and mass-media sectors, a simple-random sample of 50 book publishers and 50 titles were drawn from each sector's sampling frame at the end of July 2009. The procedure followed included telephonically contacting the relevant persons and/or editorial department at each publishing house and title, requesting their permission to forward the questionnaire via email and then asking the contacted person to forward the questionnaire to all editors working at or for the specific book publisher and title. Furthermore, during this initial stage, participants were informed of the nature of the study and the importance of their participation. Contact was established in early August 2009.

For the sample selection from the SATI, PEG and language-services agency mailing lists, each association's secretary, chairperson or manager was contacted telephonically. The procedure followed included contacting the relevant person at each association and soliciting his or her permission to forward the questionnaire via email. Each person was then requested to distribute the questionnaire on his or her association's mailing list. At the request of each association, a small paragraph explaining the purpose of the questionnaire was included as part of the email message that was sent out to the association's mailing list. Contact was established in early August 2009.

4.5   DATA COLLECTION

Permission to forward the questionnaire was obtained from 32 of the book-publishing houses, which represents 64 percent participation of the original sample, and 17.39 percent participation of the initial sampling frame. The non-response portion of the original sample of 50 publishing houses totalled 18 and is categorised as follows:

- 6 sample elements indicated that they were retailers or distributors,
- sample elements indicated that they were either not interested in participating in the study or that their company policy did not allow for such participation, and

- 1 publishing house had closed down.

Permission to email the questionnaire was obtained from 35 of the 50 titles in the mass-media sector sample, which represents 70 percent participation of the original sample, and 18.04 percent participation of the initial sampling frame. The non-response portion of the original sample of 50 titles totalled 15, of which all indicated that they were either not interested in participating in the study or were not available to assist in completing the questionnaire.

Permission to email the questionnaire to SATI, PEG and the language-services agency was obtained from all three institutions. It is important to note that the three mailing lists served as sampling frames for the technical-editing and academic-editing sectors. However, it is equally important to bear in mind that since these associations are for editors and language practitioners in general, participants from these three mailing lists could also include editors from the book-publishing and mass-media sectors,[5] and so there could be some overlap in terms of the samples. However, this is not a problem as it does not affect the sector representation in the study (all sectors are similarly represented by the responses).

In total, 92 questionnaires were returned, with the distribution per sector as follows: 25 responses from the book-publishing sector, 20 from the mass-media sector, 18 from the technical-editing sector, 23 from the academic-editing sector, and 6 responses where the respondents did not indicate the industry sector in which they work.[6] While the response rate could be perceived as quite low, it is significantly higher than similar studies that have been conducted within the field of editing in the past (see for example Blaauw, 2001; Law & Kruger, 2008; Kruger & Bevan-Dye, forthcoming).

4.6   ANALYSIS OF THE DATA

The captured data were processed using the Statistical Package for the Social Sciences (SPSS) Version 16 for Windows software. The data were analysed using the following statistical methods:

---

[5] The questionnaires sent to SATI, PEG and the language-services agency did not explicitly ask only technical and academic editors to respond. Therefore, some responses from the book-publishing and mass-media sectors may be derived from the mailing lists of SATI, PEG and the language-services agency. However, this does not impact on the sample since each sector received similar representation in the study (see Section 5.4.1).

[6] The six responses that did not reflect the working sector of the respondents were included in the study of the entire sample, but were excluded from the sector-specific analysis.

- reliability and validity analysis,
- descriptive statistics, and
- significance tests.

The final set of data was then analysed qualitatively by means of a semi-Delphi study.

4.6.1 Reliability and validity analysis

Aaker and Day (1990:297) explain that, in order for a measurement instrument to be accurate, it needs to be both reliable and valid. Reliability refers to the extent to which an instrument yields the same findings if it is used at different times or administered to different subjects from the same population (Pietersen & Maree, 2007b:215). According to McDaniel and Gates (2002:299), validity is used to determine whether a research instrument measures that which it is intended to measure.

A number of methods are available to test the reliability of a research instrument. For the purposes of this study, the internal consistency method was selected. The internal consistency of a research instrument refers to the degree of similarity among items formulated to measure a certain construct (Pietersen & Maree, 2007b:216). The Cronbach alpha coefficient is used to measure the internal reliability of the instrument and "computes the mean reliability coefficient estimates for all possible ways of splitting a set of items in half" (McDaniel & Gates, 2002:298). The instrument is deemed internally consistent "if the items are strongly correlated with each other [and] their alpha coefficient is close to one" (Pietersen & Maree, 2007b:216). Generally accepted guidelines state that coefficient values of 0.6 and lower are unacceptable, while values above this are indicative of reliability, with the reliability increasing in acceptability as the coefficient value increases (Pietersen & Maree, 2007b:216). The results of the reliability testing are reported in Section 5.3.

As pointed out above, validity refers to the extent to which an instrument measures that which it is intended to measure. A number of methods are available to determine whether a research instrument is valid. The research instrument used in this study was tested for face validity and content validity during the pre-testing, as outlined in Section 4.3.5.

4.6.2 Descriptive statistics

According to McDaniel and Gates (2002:488), descriptive statistics are an efficient way of analysing large sets of data. Data are summarised and organised according to particular variables, which assists in the understanding of particular properties of the data (Pietersen &

Maree, 2007a:183). In other words, descriptive statistics allow for sets of data to be organised and described in meaningful ways.

According to Pietersen and Maree (2007a:186), quantitative data (like those obtained from the survey used in this study) consist of "a list of numerical values – one value for each respondent – that are distributed across a range of values". The distribution of these values can be analysed by means of descriptive analysis, which typically involves measures of central tendency and measures of dispersion (Bevan-Dye, 2005:241).

4.6.2.1 Measures of central tendency

Measures of central tendency seek to identify the "most characteristic value, namely the one value that best describes the entire set of values or, in other words, the value around which the other values are distributed" (Pietersen & Maree, 2007a:187). Three measures for describing the central tendency of data sets exist: the mean, median and mode. In this study, the measure of central tendency applied to the data sets is the arithmetic mean. The arithmetic mean is the most commonly used measure of central tendency and is calculated as the average of all the data sets (Pietersen & Maree, 2007a:187). This average is understood as the sum total of values divided by the number of values (Proctor, 2000:238).

By analysing the data sets for the means computed per item, it becomes possible to identify which items editors consider relevant. An analysis of the means computed for each item was therefore done, with the aim of identifying those items that scored means lower than 2.5 (indicating that the editors consider the item relevant). In addition to analysing the means for the items from the entire sample's responses (see Section 5.4.2.1), an analysis of the means computed per item for each sector was also done. This allowed for a comparison of the item means between the sectors, which contributed to a distinction between sector-specific tasks and core tasks (see Sections 5.4.2.2 to 5.4.2.6).

4.6.2.2 Measures of dispersion

Whereas measures of central tendency indicate the most characteristic value of a data set, measures of dispersion indicate how spread out the data are (McDaniel & Gates, 2002:489); in other words, it expresses "the extent to which the data values tend to cluster close together or be widely spread over the range of possible values" (Pietersen & Maree, 2007a:188). Three measures for determining the spread of a distribution exist, namely range, variance and standard deviation. The standard-deviation method was selected for this study.

The standard deviation refers to the square root of the variance, which is calculated as "the average squared deviations of all values from their means" (Pietersen & Maree, 2007a:188). In this study, an analysis of the standard deviations scored for each item indicates the level of disagreement regarding an item among the respondents. A high standard deviation suggests that the respondents disagree on the relevance of an item. By calculating the standard deviation of an item, it becomes possible to suggest whether there is generally agreement among editors about the importance or centrality of a task or skill, or whether there is variance in opinion which may be accounted for by differences among editorial tasks in different sectors, or by other factors. This will assist in determining which tasks should form part of the core list of standards, by indicating the level of agreement amongst the respondents regarding the relevance of each item (see Section 5.4.2.1 to 5.4.2.6).

4.6.3   Significance tests

Significance tests are used to analyse and interpret data in order to make inferences about the population. Normally hypotheses about the population are formulated and significance tests are applied to determine which hypotheses are accepted or rejected. Hypotheses are suppositions that a population parameter will take on a particular value (Kinnear & Taylor, 1991:550). The methodological procedure for significance tests involves formulating a null (*Ho*) and alternative (*Ha*) hypothesis, selecting the appropriate statistical test, specifying the significance level (*a*), setting up the statistical decision rule, computing the test statistic from the sample data, testing the hypotheses based on the test statistic and making inferences about the population (Proctor, 2000:240).

Significance tests are applied to the data sets in this study in order to determine the level of confidence with which it may be inferred that an item mean will be repeated if the survey were to be administered to a different sample or at a different time. More specifically, significance tests were conducted on all items that were identified as core tasks and skills through the use of descriptive statistics (see Section 4.6.2). The application of significance tests on the means of these items assisted in determining which of the items should form part of the preliminary set of core standards. This preliminary set of standards was then further refined through a semi-Delphi study. The significance tests and their findings are discussed in detail in Section 5.5

4.6.4   Semi-Delphi study

Churchill and Peter (1995:146) define the semi-Delphi technique as a "method of forecasting that surveys experts, averages the results, and repeats the survey". It involves sending a survey to experts asking them to provide a forecast. The results are returned and then

averaged and sent to the experts again asking them to review the results and provide another forecast (Churchill & Peter, 1995:146). This process is repeated until consensus is reached among the experts. In this study, the semi-Delphi technique was applied to ensure the clarity and acceptability of the final list of core standards in terms of its structure and layout and the formulation of each standard. The semi-Delphi technique employed in this study is therefore essentially qualitative in nature, since the experts were asked to make subjective evaluations of the final list of core tasks and skills. The final list of core standards used for this stage was based on the results of the statistical analysis conducted on the data.

For this stage of the study, a panel of four experts was consulted. The panel comprised two academics, who teach and do research in the field of editing and language practice, and two practitioners who are prominent role-players in regulatory bodies/associations in the South African editing industry. The inventory of core standards was sent to the participants via email, as this allows the participants to analyse the document at their convenience. For each standard, the participants were asked to make general suggestions or comments on the structuring and layout of the standards, logical grouping of items, clarity of item formulation, and overall presentation. Once the participants' comments were returned, the replies were analysed and any corrective wording and recommended changes were subsequently done. This process was repeated in two rounds, after which consensus was reached. The results from the semi-Delphi are discussed in more detail in Section 5.6.

4.7 CONCLUSION

This chapter discussed the methodology employed in the design of the research study. Section 4.2 provided an overview of the empirical portion of the study. Section 4.3 outlined the design and development of the research instrument, and included an overview of the pre-testing of the questionnaire. The sampling procedure employed for the study was discussed in Section 4.4, while the statistical and analysis methods applied to the empirical data were briefly outlined in Section 4.5.

The following chapter provides more detail of these methods, and reports the research findings of the statistical and analysis methods applied to the empirical data sets.