

CHAPTER 5 THE CONSTRUCTION OF THE

The research was conducted using an assessment for readability, a preliminary study, an evaluation by experts and a main study, with a construct (known groups) validity test forming part of the main study.

5.1 Part A of the questionnaire

Part A of the questionnaire is detailed in Appendix 2, and consisted of questions relating to the following independent variables which are relevant to the research questions formulated in Section 2.5.1:

- Age
- Gender
- Educational Level
- Income Level
- Ethnic Group
- Home Language

In addition, participants were asked whether they were, or had previously been, actively involved in the activities of an environmentally-focussed organization or club. In this way, a means was provided of identifying the data for use in the known-groups comparison test, which would enable the correlation between such involvement and the level of environmental concern of the participants to be determined.

5.2 The construction of the initial item pool (Part B)

The content of the initial set of statements was based on the proposed anthropocentric and ecocentric dimensions of environmental concern, with each dimension suggesting a different reason, or motive, why people are concerned about the natural environment (Gagnon Thompson & Barton, 1994). These two

motives divided the measurement scale into two "subscales". Within each of the dimensions, it is natural that there may exist different issues which motivate people in accordance with the above. Each subscale was therefore further classified in order to provide an adequate range of appropriate issues. However, in order to ensure consistency within the subscales, this classification was confined to a limited number of issues, namely two, as described below.

Although no formal taxonomy relating to the classification of environmental issues was found in the literature, some help was obtained from the following sources:

- (i) the environmental classification system for water-resource
- (ii) the system recommended by Malcolm and MacDonald (1975) for groups shown in Table 5.2.

Table 5.1 Classification system for water-resource development projects

Ecology
Aesthetics
Physical/chemical
Human interest/social

Table 5.2 Categories of proposed environmental quality indicators for the

Air and water
Land
Multi-media
Social/aesthetic

For the purpose of this research these were modified and combined into the categories depicted in Table 5.3. "Air, land and water" includes pollution, natural resources and environmental issues of a general nature.

Direct reference to population-type issues were specifically excluded, based on Van Liere and Dunlap's (1981) opinion that these issues influence variations in results relating socio-demographic factors and environmental concern.

Table 5.3 Subscale categories used for the development of the

Air, land and water
Non-human life

These two categories, representing different aspects of the natural environment, formed the basis for the development of the initial set of statements specified in

Appendix 3 within the two dimensions (anthropocentric and ecocentric) of the model for environmental concern proposed in Section 2.6. The categories are identified in Appendix 3 by the letters "alw" and "nhl" respectively.

Some statements, as well as some ideas for the statements in the original set of 115 were obtained from the following sources:

McKechnie (1971)
Horvat and Voelker (1976)
Buttel and Johnson (1977)
Lounsbury and Tornatsky (1977)
Dunlap and Van Liere (1978)
Weigel and Weigel (1978)
Pohorille (1985)
Stern, Dietz and Kalof (1993)
Iwata (1994)
Steel, List and Schindler (1994)
Grob (1995)

The original item pool for the preliminary study consisted of 115 statements, categorized as shown in Table 5.4.

Table 5.4 Preliminary study item pool details

SUB-SCALE	CATE-GORY	POS/NEG	NO. OF ITEMS	ITEM NUMBERS
ECO	ALW	P	15	1 9 14 26 34 40 46 49 52 58 60 81 86 88 94
ECO	ALW	N	21	4 11 19 23 30 37 43 61 63 65 67 74 76 78 87 90 101 106 108 111 114
ECO	NHL	P	16	5 12 21 28 36 39 41 50 56 62 68 72 73 83 93 105
ECO	NHL	N	18	3 8 16 22 24 32 45 48 53 59 64 70 77 80 84 97 104 109
ANT	ALW	P	19	2 10 13 20 29 31 38 44 47 54 57 69 92 96 98 107 112 113 115
ANT	ALW	N	11	6 17 25 35 42 66 71 79 82 85 100
ANT	NHL	P	11	7 18 27 33 51 55 75 99 102 103 110
ANT	NHL	N	4	15 89 91 95

Refer to Glossary for a description of the abbreviations used in this table

On the assumption of reasonable attitude-behaviour consistency, behaviours (and behavioural intentions) referred to in the statements were deemed to be indicative of the attitude environmental concern (Oppenheim, 1966).

5.3 The translation

Parts A and B of the questionnaire, as well as the Instructions to Participants, were translated into an additional four of South Africa's eleven official languages. The translation was supervised by the Department of African Languages at the University of Cape Town. It was reasoned that making the questionnaire available to

participants in the Afrikaans, Xhosa, Zulu and Sesotho languages (in addition to English) would increase the probability that most participants would be able to respond in their home language.

5.4 The initial assessments

Interpretation and general understanding of the statements was assessed during the assessment for readability and the preliminary study.

5.4.1 The assessment for readability

Each of the four assessors as described in Section 4.2 was given the cover page, the "Instructions to Participants" and both Parts A and B of the questionnaire corresponding to his or her home language, and was asked to comment on any difficulty in interpretation or general understanding of the content.

The following modification was carried out based on the feedback received from the assessors:

- (i) An example of the different responses to two of the "Trees ..." statements

5.4.2 The preliminary study

The preliminary study was carried out with a group of five participants chosen as described in Section 4.3. Only English-language questionnaires were used, and the participants were all employed at the same organization.

Participants were asked to comment on whether they had any objections to completing Part A, the demographic/biographic section, and whether any of the 115 statements in Part B (the proposed environmental concern measuring scale) seemed ambiguous or difficult to understand. Emphasis was therefore placed on the participants' understanding of the questionnaire itself, rather than on their specific responses. In addition, the participants were made aware that the purpose

of their involvement was to enable an enhanced questionnaire to be used at a later time in a larger research exercise (the main study).

The participants were asked to complete the questionnaire and to indicate any suggestions or comments they may have with regard to the above on the completed questionnaire before returning it.

Only English-language questionnaires were used for the preliminary study, on the grounds that this would be sufficient, at this stage in the development of the measurement scale, for initial difficulties to be dealt with and for initial modifications to the proposed scale to be carried out.

Parts A and B of the questionnaire together averaged 30 minutes to complete.

The following modifications were carried out after the preliminary study:

- (i) Statement number 26 of Part B of the questionnaire was amended from:
"Most companies consider the implementation of anti-pollution technology to read as follows:
"Most companies involved in the manufacture of hazardous substances
- (ii) The words "parks and forests" in statement number 80 of Part B of the
- (iii) Statement number 116 "It is our responsibility to look after the environment

The "Instructions to Participants" and Parts A and B of the questionnaire are shown in Appendices 1, 2 and 3 respectively.

Any statements modified or added as a result of this evaluation are indicated by an "@" or "*", respectively, in the "IND" column in the diagram in Appendix 3.

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*Refer to Glossary and Appendix 3 for a description of the abbreviations used

5.5 Item selection - the evaluation of the item pool by experts

The six evaluators as described in Section 4.4 were each given a set of the 116 statements, and the proposed anthropocentric and ecocentric dimensions of environmental concern were explained to them. The evaluators were then asked to indicate which dimension was more closely represented by each statement. A single set of 116 statements, ranked according to the proposed dimensions, was produced from the six individual rankings supplied by the evaluators.

In order to ensure that a representative number of statements from each proposed scale and subscale was present in the measurement instrument to be used for the main study, it was decided to select the 32 highest-ranking statements, subject to the following requirements: 8 each from the categories AA*, AN, EA and EN with approximately the same number of positively-scored and negatively-scored statements in each category. This strategy worked satisfactorily for AA and AN, but no negatively-scored statements for EA or EN had high enough ratings to be selected. The details of the statements selected are shown in Table 5.5.

*Refer to Glossary for a description of the abbreviations used

Table 5.5 Main study item pool details

SUBSCALE	CATEGORY	POS/ NEG	NO. OF ITEMS	ITEM NUMBERS (in 32-item scale)
ANT	ALW	P	4	1 11 17 19
ANT	ALW	N	4	3 6 20 30
ANT	NHL	P	4	7 23 29 31
ANT	NHL	N	4	5 14 25 28
ECO	ALW	P	7	4 8 10 12 15 27 32
ECO	ALW	N		
ECO	NHL	P	9	2 9 13 16 18 21 22 24 26
ECO	NHL	N		

Refer to Glossary for a description of the abbreviations used in this table

A total of 32 statements were selected, 16 for each of the proposed anthropocentric and ecocentric dimensions. These statements were re-numbered from 1 to 32 as shown in the "NO." column in the diagram in Appendix 3.

Statements deleted as a result of this evaluation are indicated by a "#" in the "IND" column in the diagram in Appendix 3.