CHAPTER 5

RESEARCH METHODOLOGY AND RESULTS OF THE SECOND EMPIRICAL STUDY

5.1 Introduction

The research methodology of the second empirical study is discussed in this chapter. The aim was to establish the willingness of individuals of different stakeholder groups to support more comprehensive corporate environmental reporting. This was established with the use of a questionnaire.

The development of the questionnaire is discussed. The links between the questionnaires used in the first and the second empirical study are explained. The method of distributing the questionnaire and the population are also described.

The results of the second empirical study are displayed in this chapter. The response rate and the representativeness of the results are discussed. The questions and answers are then given. The differences between the responses of the three groups (auditors, managers and users) were analysed by way of Fisher's exact test of significance at the 5% level (refer to Appendix 25). The chi-sqaured test was not deemed appropriate because of the small number of respondents in the second empirical study. Where significant differences (at the 5% level) were found, the fact is mentioned directly after the display of the full results.

The results are displayed in graphic form where this is deemed appropriate. Each question and result is followed by a discussion of the immediate consequences and conclusions.

Hypothesis 2 mentioned in Chapter 1 is considered in the light of the results of the empirical study. The conclusion regarding the hypothesis is given. Recommendations regarding minimum reporting requirements are also given. The conclusion and recommendations are based on the second empirical study.

Finally, the responses to the first study (refer to Chapter 5) are compared to those of the second study. This is done on the basis of Fisher's exact test at the 5% level.

5.2 Questionnaire Content

In the second empirical study, one of the important objectives was to ensure a higher response rate. It was felt that the length of the questionnaire used in the first empirical study could have had an adverse effect on the response rate. The questionnaire was, therefore, shortened by eliminating some of the examples of specific environmental disclosures mentioned in Question 7 of the third section of the first questionnaire (refer to Appendix 1).

The first section on the biographical information of the respondent was left out, again in an attempt to shorten the questionnaire. Instead, a record was kept of who responded and who did not. In this way, it would be possible to ensure that responses were representative.

The second section of the questionnaire used in the first empirical study was also left out. The second empirical study, therefore, did not investigate the awareness of individuals of the current environmental reporting implications.

Finally, the fourth section of the questionnaire used in the first empirical study was left out. The fourth section dealt with reporting for sustainable development. The section was again left out in an attempt to reduce the number of questions.

The links between the questionnaires used in the first and the second survey are given in Table 5.1.

TABLE 5.1: LINKAGES BETWEEN THE QUESTIONNAIRES USED IN THE FIRST AND THE SECOND SURVEY

Second Questionnaire Question	First Questionnaire Section 3 Question
1	2
2	3
3	4
4	5
5	6
6a	7a
6b	7b
6c	7d
6d	7f
6e	7j
6f	7s

The complete questionnaire as used in the second survey is reproduced in Appendix 17.

One of the areas of criticism of the first empirical study was the large number of accountants in the user group (refer to sections 4.5 and 4.12). In the second empirical study accountants still accounted for 40% of the questionnaires sent out in the user group. However, two questions (refer to section 5.8) were included in the second survey to establish whether an accountant could really be classified as a user. The questions related to whether they are employees of companies and whether they own shares in companies.

The questionnaire for accountants is reproduced in Appendix 18.

5.3 Population

5.3.1 Introduction

The sample size of the second survey was considered carefully in consultation with a statistician. One of the criticisms of the first survey was the low response rate. To improve this in the second survey, a follow-up action was undertaken. Record was, therefore, kept of who responded to the survey.

In order to ensure that it would be practical to follow-up, the sample sizes were to be kept to a minimum. To ensure that the sample sizes would still yield statistically useful information, the relevant statistical calculation considered was the co-efficient of variation of the mean. A co-efficient of variation of the mean of below 10% was regarded as acceptable. The responses of the sample had to be known as well as the number of points on the scale. The responses were not known at the planning stage and, therefore, the worst-case scenario was assumed. This would entail half the respondents answering at the one end of the scale, with the other half responding at the other end. With a sample size of 50 and a five-point scale, this still yielded a co-efficient of variation of below 10%. It was, therefore, decided to limit the sample sizes to 50 for each of the three groups.

5.3.2 Auditors

A list of members as at 30 June 1995 was obtained from the Institute of Chartered Accountants. The list was in alphabetical order. The members' name and postal addresses were on the list, with an indication if the member was a resident of a country other than South Africa. Non-residents were excluded from the sample.

The member listing had 15 519 names; 249 pages with 62 names per page, with 59 names on the first page and 22 on the last. Because the names were in alphabetical order and there was no pattern of occurrences in the order of the names, a random sequential sample would equate a random sample. Fifty names were, therefore, selected on a random sequential basis.

The list is reproduced in Appendix 19.

5.3.3 Managers

For the purpose of the second survey, it was decided to include all JSE-listed companies. This would allow smaller companies into the survey, but it would also allow mining and financial companies into the survey. The Financial Mail top company listing excludes mining and financial companies.

The 50 directors were chosen from the JSE Handbook of September 1995 to February 1996. A total of 655 companies is listed. The companies are listed in alphabetical order. A random sequential sample would therefore approximate a random sample. A random sequential sample of 50 companies was, therefore, taken. One director was then chosen from each of the companies on a random basis. The list of directors is contained in Appendix 20.

5.3.4 Users

a. Chartered Accountants not registered with the PAAB

The 20 names were drawn from the same list of SAICA members mentioned in section 5.3.2. The sample was drawn on a random sequential basis in such a way that the

names were distributed throughout the list. The list of names is to be found in Appendix 21.

b. Stockbrokers

The 20 names (refer to Appendix 21) were drawn from the JSE Handbook of September 1995 to February 1996. A total of 356 partners of the various stockbroking firms are listed. The full list of partners is given in each city where the partnership has offices. After the elimination of duplications, a random sequential sample of partners was selected.

c. Bankers

The five banks were personally identified (refer to Appendix 21). The names were obtained by telephone.

d. Assurance companies

The five assurance companies were personally identified (refer to Appendix 21). The names were obtained by telephone.

5.3.5 Summary

A summary of the various groups and categories and the sample sizes is contained in Table 5.2.

TABLE 5.2: SUMMARY OF POPULATIONS AND SAMPLES

	Population	Mailed to
Auditors	± 5 000	50
Managers	± 4 000	50
Users	± 9 500	50
Consisting of:		
Chartered Accs	± 9 000	20
Stockbrokers	356	20
Banks	62	5
Assurance companies	± 20	5
TOTALS	± 18 500	150

5.4 Distribution of the Questionnaire

The questionnaires were distributed to the survey sample during October 1995.

The covering letter (refer to Appendix 22), the questionnaire (refer to Appendixes 17 and 18) and a window envelope for returning the response were sent out. The questionnaire was reproduced on the back of the covering letter.

The same package, but with the message "SECOND REQUEST" printed in bold lettering on the covering letter (refer to Appendix 23) was sent out during November 1995 to the members of the sample from whom no response had been received at the time.

5.5 Response Rate

The number of questionnaires sent and received back is contained in Table 5.3.

TABLE 5.3: SUMMARY OF MAILINGS AND RESPONDENTS

	Population	Mailed to	Respondents	Resp/Mail%
Auditors	± 5 000	50	**19**	**38%**
Managers	± 4 000	50	**15**	**30%**
Users	**± 9 500**	**50**	**19**	**38%**
Consisting of:				
Chartered Accs	± 9 000	20	4	20%
Stockbrokers	356	20	5	25%
Banks	62	5	5	100%
Assurance companies	± 20	5	5	100%
TOTALS	**± 18 500**	**150**	**53**	**35%**

There could be a bias in the responses to a postal survey, because of the tendency of individuals who are knowledgeable or enthusiastic about a subject to respond to a questionnaire on the subject. Less knowledgeable or enthusiastic individuals may not be inclined to respond. In the second empirical study it was possible to find out what the responses of non-respondents might have been, because a record was kept of who responded and who did not. The methodology is explained in the following section.

5.6 The Possibility of Bias Towards the Environment Inherent in the Respondents

5.6.1 Auditors and Managers

In order to determine whether the respondents who mailed their responses and the non-respondents agreed or disagreed on the issues raised in the questionnaire, a random sample of

5 of the non-respondents was chosen out of the auditor group and 5 out of the manager group. An attempt was made to obtain the answers of the 10 individuals chosen in this way. It proved, however, impossible to get hold of one auditor and one manager. This does not influence the bias of the group whose opinions were obtained in this way. The fact that it was not possible to get hold of someone has no bearing on his/her opinions regarding environmental reporting. The 8 responses that were obtained by telephone can, therefore, be regarded as representative of the non-respondents in the auditor and manager groups.

The aggregate of the auditor and manager responses received by mail was now compared to the aggregate of the auditor and manager responses obtained by telephone for each question. The number of respondents was too small to rely on a chi-squared test. Fisher's exact test at the 5% level was therefore regarded as an indication of the significance in difference between the two. The results of the Fisher exact tests for the various questions are contained in Appendix 24. The tests indicated no instance of significant differences between the mailed responses and the telephone responses.

The final sample, therefore, consisted of the responses received by mail and those obtained afterwards by telephone. In the case of auditors, this amounted to (19 + 4) 23 and in the case of managers (15 + 4) 19.

5.6.2 Users

The responses in the user group consisted of 9 received by mail from a total of 40 sent out as well as 10 responses solicited on the telephone. The telephone respondents were identified by asking the receptionist at predetermined organisations to be put through to someone with a specific job-title. In the case of banks this was for a manager dealing with corporate clients and in the case of life assurers for a portfolio manager. A response was obtained from each individual so identified. In other words, no one refused to co-operate. It is, therefore, assumed

that the responses by telephone would be a good indication of the answers that might have been obtained had all 40 of the mailed questionnaires been completed and sent back.

The 9 mailed response were compared with the 10 telephone responses using Fisher's exact test at the 5% level. The results of the tests are contained in Appendix 24. This indicates that there are only two instances of significant difference, namely in Questions 2 and 6b.

For Questions 2 and 6b the final sample, therefore, consisted of the responses received by mail and those obtained afterwards by telephone as follows. The telephone responses are regarded as representative of the (40 - 9) 31 non-respondents in the user group. Therefore, the telephone responses were multiplied by (31 ÷ 10) 3.1. The result was added to the mailed responses and the telephone responses. These numbers were then multiplied by 19 and devided by 50 to arrive at the final result. The total number of respondents for users for these two questions would, therefore, still seem to be 19, although this is the result of a transformed total.

For the other questions (other than 2 and 6b), the final sample consisted of the responses received by mail and those obtained afterwards by telephone. This gave a sample size of 19.

5.6.3 Final Number of Respondents

The final number of respondents is summarised in Table 5.4 below:

TABLE 5.4: FINAL NUMBER OF RESPONDENTS

	Mailed to	Response by Mail	Response by Phone	Response Total	Resp/ Mail%
Auditors	50	19	4	23	46%
Managers	50	15	4	19	38%
Users	50	19		19	38%
Consisting of:					
Chartered Accs	20	4		4	20%
Stockbrokers	20	5		5	25%
Banks	5	5		5	100%
Assurance companies	5	5		5	100%
TOTALS	150	53	8	61	41%

5.7 Representativeness of the Results

In section 5.3.1, the appropriate sample size was mentioned. The co-efficient of variation of the mean actually achieved for each group in each question is given in Appendix 26.

The co-efficient of variation of the mean was found to be below 10% in all cases. The sample is, therefore, assumed to be representative of the population.

5.8 Responses to the Questions in the Second Empirical Study

In this section each question is repeated as it appeared in the relevant questionnaire (refer to Appendixes 17 and 18). After each question, the responses of the three groups (where applicable) are given per category in aggregate and as a percentage.

First Section: Questions to only the Chartered Accountants (SA) amongst the Users

The purpose of the questions in this section was to ensure that the Chartered Accountants (SA) in the user group can justifiably be called users.

1. Do you own shares in a company?

		Yes	No	Did not Answer
CA(SA)s	No of resp.	2	2	0
CA(SA)s	Percentage	50	50	0

2. Are you an employee of a company?

		Yes	No	Did not Answer
CA(SA)s	No of resp.	4	0	0
CA(SA)s	Percentage	100	0	0

According to the definition of users in the accounting framework (SAICA 1990:09), shareholders, employees and customers are, amongst other things, users of financial statements. The accountants in the user group who responded all own shares or are employees of companies. It would furthermore be safe to assume that they are also all customers of companies.

Second Section: Willingness to support more comprehensive disclosure in the annual report

The purpose of the questions in section 2 was to establish the willingness of individuals to support more comprehensive corporate environmental reporting in the annual financial statements.

The answers to questions in section 2 were given on a five-point scale. The possibilities were "strongly agree", "agree, "uncertain or does not matter", "disagree" and "strongly disagree".

The responses in section 2 were measured in two ways. Firstly, an average score was calculated for each of the three groups. This was done on the basis of the following scores:

Strongly agree	5
Agree	4
Uncertain/Does not matter	3
Disagree	2
Strongly disagree	1

An average of 3 would therefore indicate no specific preference. An average of above 3 would indicate agreement and below 3 disagreement. In this way the few non-responses are effectively ignored. The questions were generally set in such a way that agreement would indicate a willingness to support more comprehensive corporate environmental disclosure.

The second measure used was that of percentage agreement. The number of respondents who "strongly agreed" and those who "agreed" were taken as a percentage of the total questionnaires received back in the particular group. In this way non-responses are not ignored, as this treatment effectively reduces the percentage agreement.

A particular question with many "uncertain" respondents could therefore have an average score of more than 3, but a percentage agreement of below 50%. An average of more than 3 can be regarded as agreement by a group, but a percentage agreement of 50% or more is a very strong indication of agreement.

Pre-amble to the questions in the second section

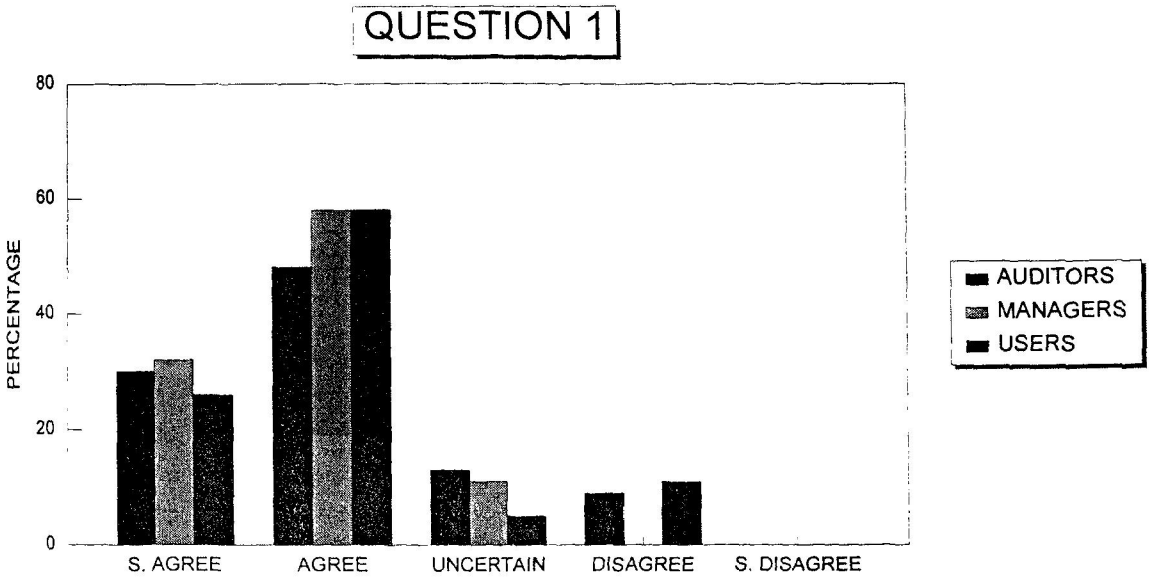
To what degree do you personally agree/disagree with the following statements?

1. More comprehensive disclosure of environmental matters is needed on a voluntary basis

		Strongly Agree	Agree	Uncertain or Does not matter	Disagree	Strongly Disagree	Did not Answer	Average/ % Agree
Auditors	No of resp.	7	11	3	2	0	0	4.0
Auditors	Percentage	30	48	13	9	0	0	78
Managers	No of resp.	6	11	2	0	0	0	4.2
Managers	Percentage	32	57	11	0	0	0	89
Users	No of resp.	5	11	1	2	0	0	4.0
Users	Percentage	26	58	5	11	0	0	84

Significant differences according to Fisher's exact test at the 5% level:

None



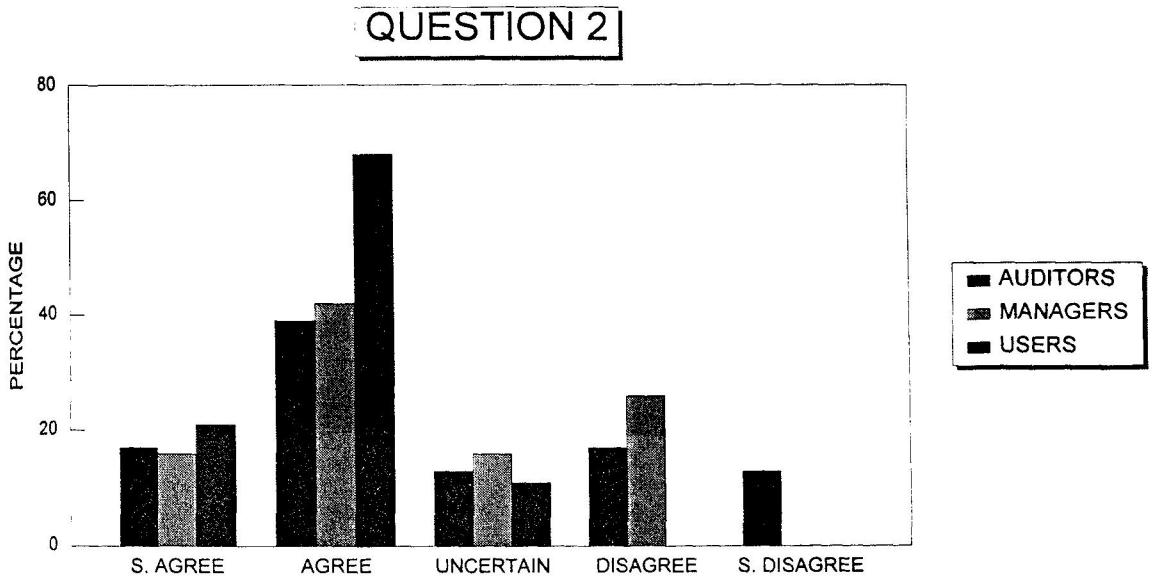
The three groups were all equally (according to Fisher's exact test) in favour of more environmental disclosure on a voluntary basis. Pragmatic reasons for environmental reporting (such as those mentioned in section 2.6) were probably favoured by the managers who responded positively to this question.

2. More comprehensive disclosure of environmental matters is needed on a compulsory basis

		Strongly Agree	Agree	Uncertain or Does not matter	Disagree	Strongly Disagree	Did not Answer	Average/ % Agree
Auditors	No of resp.	4	9	3	4	3	0	3.3
Auditors	Percentage	17	40	13	17	13	0	57
Managers	No of resp.	3	8	3	5	0	0	3.5
Managers	Percentage	16	42	16	26	0	0	58
Users	No of resp.	4	13	2	0	0	0	4.1
Users	Percentage	21	68	11	0	0	0	89

Significant differences according to Fisher's exact test at the 5% level:

None



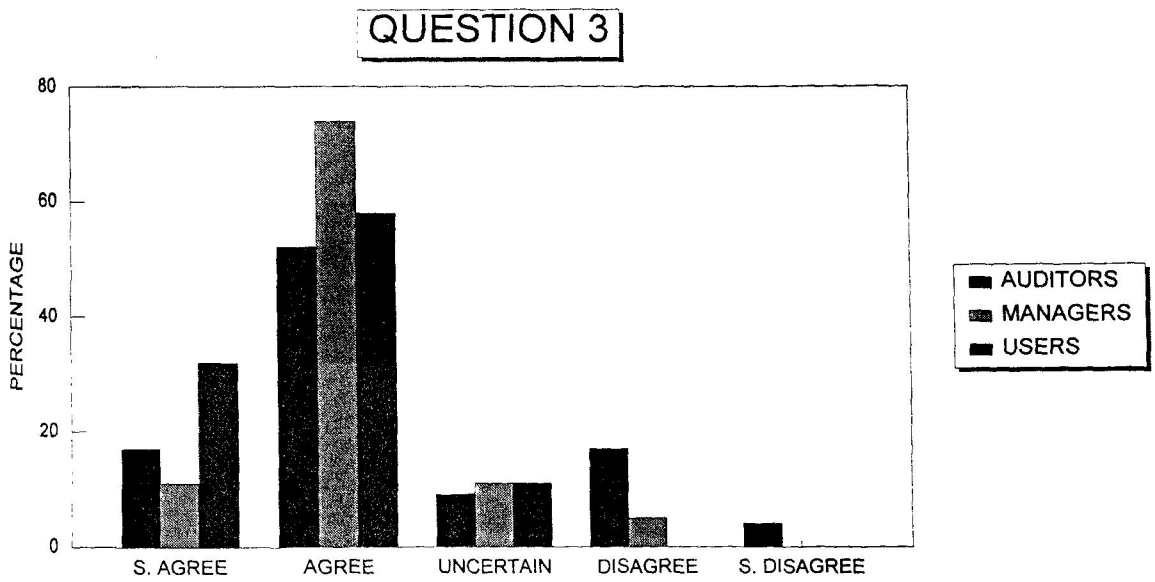
The respondents of all three groups were in favour of more environmental disclosure on a compulsory basis. Although users appear on the face of it to be more positive, Fisher's exact test indicate that this is not significantly so. Questions 1 and 2 deal with the issue of whether environmental reporting should be done on a voluntary or a compulsory basis. This was dealt with in theory in section 2.8, where the conclusion was drawn that it should be made compulsory. According to the above responses, there would seem to be support for this view from various stakeholders.

3. All environmental disclosure should be published as part of the annual financial statements or an addendum thereto to ensure accessibility

		Strongly Agree	Agree	Uncertain or Does not matter	Disagree	Strongly Disagree	Did not Answer	Average/ % Agree
Auditors	No of resp.	4	12	2	4	1	0	3.6
Auditors	Percentage	17	53	9	17	4	0	70
Managers	No of resp.	2	14	2	1	0	0	3.9
Managers	Percentage	11	73	11	5	0	0	84
Users	No of resp.	6	11	2	0	0	0	4.2
Users	Percentage	32	57	11	0	0	0	89

Significant differences according to a Fisher's exact test at the 5% level:

None



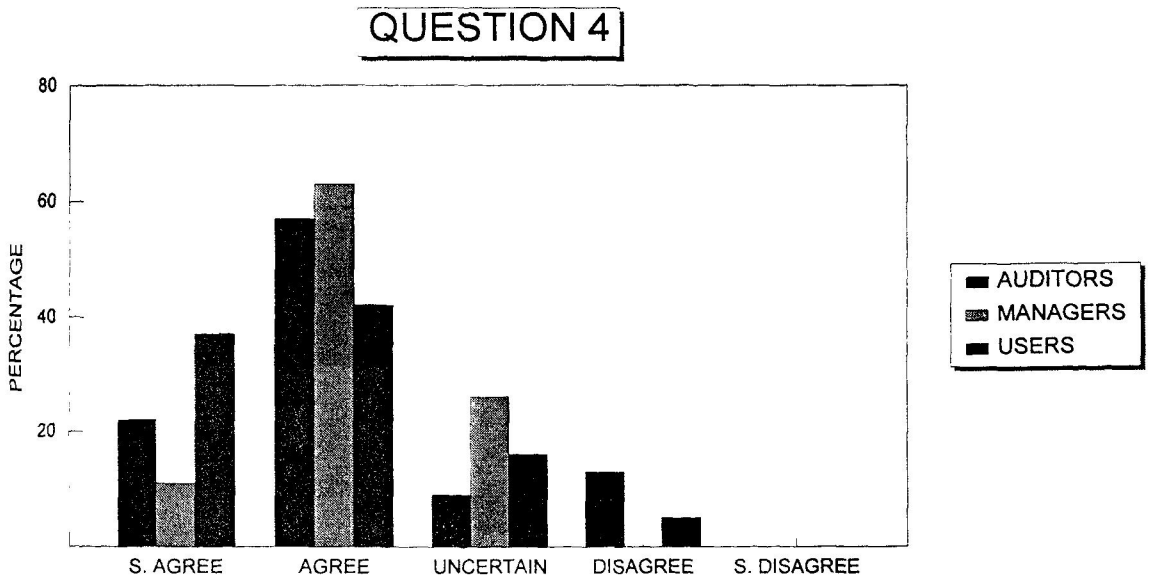
The groups were all in favour of the disclosure of environmental information in the annual financial statements. There were no significant differences between the responses of the different groups. The annual financial statements seem increasingly to be regarded as a source of information regarding all the activities of an organisation.

4. More comprehensive environmental disclosure of a financial nature is needed

		Strongly Agree	Agree	Uncertain or Does not matter	Disagree	Strongly Disagree	Did not Answer	Average/ % Agree
Auditors	No of resp.	5	13	2	3	0	0	3.9
Auditors	Percentage	22	56	9	13	0	0	78
Managers	No of resp.	2	12	5	0	0	0	3.8
Managers	Percentage	11	63	26	0	0	0	74
Users	No of resp.	7	8	3	1	0	0	4.1
Users	Percentage	37	42	16	5	0	0	79

Significant differences according to Fisher's exact test at the 5% level:

None



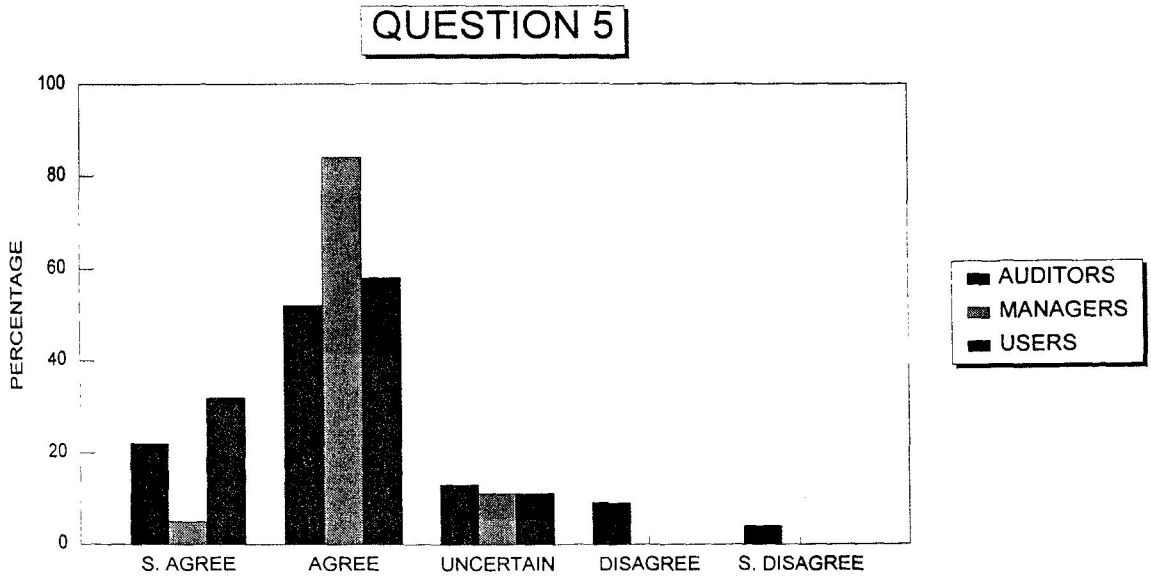
The respondents of the various groups were equally in favour of environmental disclosure of a financial nature. As in the first empirical study, auditors seem to be more positive about financial information than managers. The difference is not significant though.

5. More comprehensive environmental disclosure of a non-financial nature is needed, such as descriptive information or information in physical units

		Strongly Agree	Agree	Uncertain or Does not matter	Disagree	Strongly Disagree	Did not Answer	Average/ % Agree
Auditors	No of resp.	5	12	3	2	1	0	3.8
Auditors	Percentage	22	52	13	9	4	0	74
Managers	No of resp.	1	16	2	0	0	0	3.9
Managers	Percentage	5	84	11	0	0	0	89
Users	No of resp.	6	11	2	0	0	0	4.2
Users	Percentage	32	57	11	0	0	0	89

Significant differences according to Fisher's exact test at the 5% level:

None



The respondents were also equally in favour of the disclosure of environmental information of a non-financial nature. Again, as in the first study, managers seem to be more positive about non-financial information disclosure than auditors, although the difference is not significant.

6. Auditors and Managers — The following items should be disclosed by organisations:

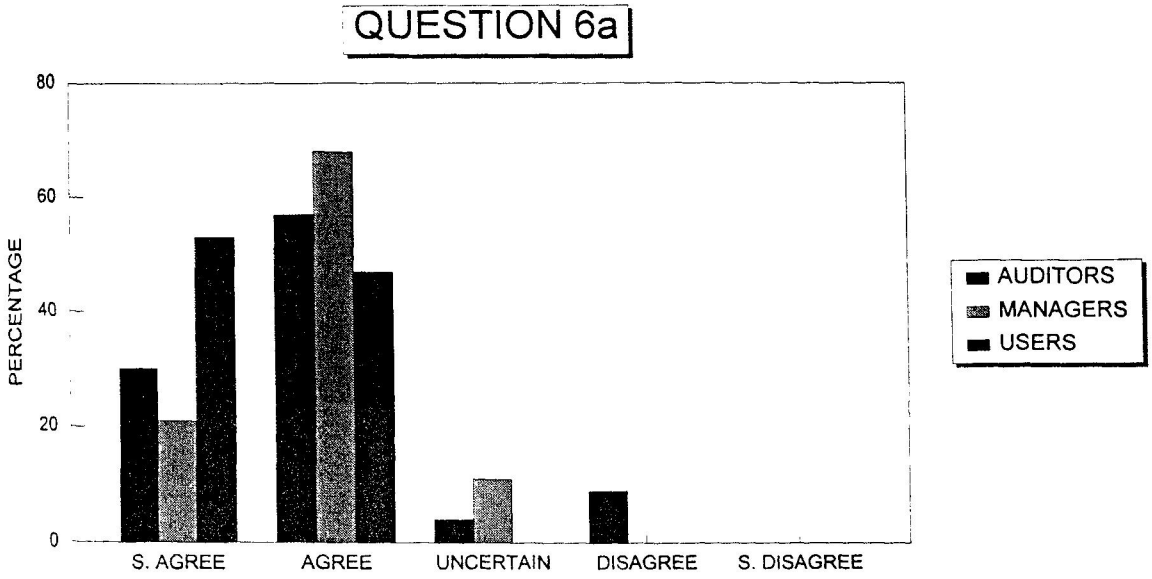
Users — The following items should be disclosed by organisations, because it is useful to me:

a) a descriptive overview of the major environmental risks and impacts of the organisation

		Strongly Agree	Agree	Uncertain or Does not matter	Disagree	Strongly Disagree	Did not Answer	Average/ % Agree
Auditors	No of resp.	7	13	1	2	0	0	4.1
Auditors	Percentage	30	57	4	9	0	0	87
Managers	No of resp.	4	13	2	0	0	0	4.1
Managers	Percentage	21	68	11	0	0	0	89
Users	No of resp.	10	9	0	0	0	0	4.5
Users	Percentage	53	47	0	0	0	0	100

Significant differences according to Fisher's exact test at the 5% level:

None



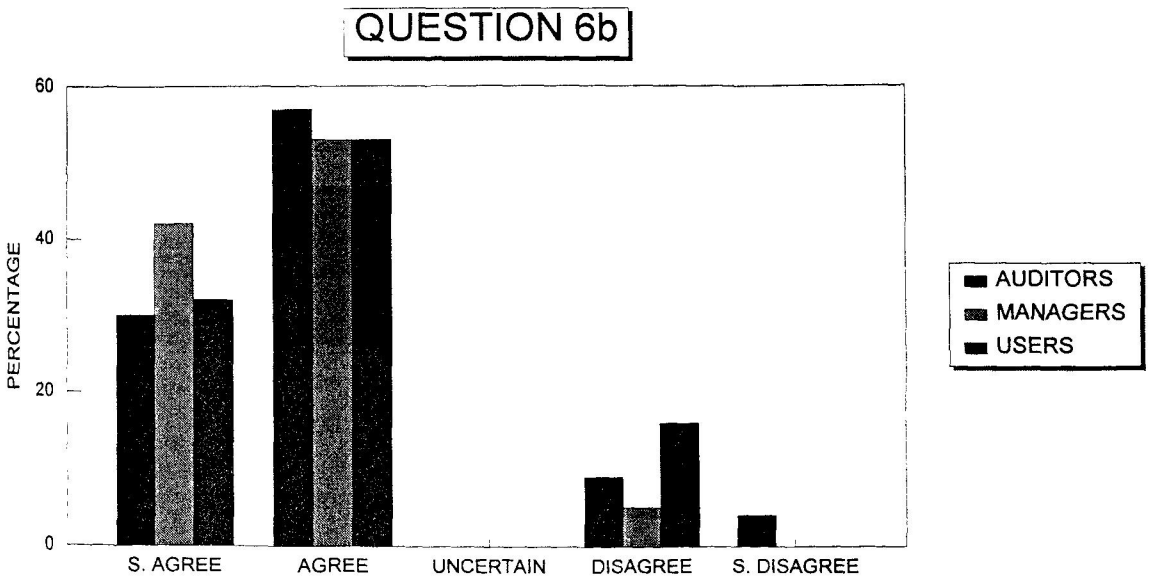
The groups were all in favour of this specific kind of environmental reporting. There were no specific differences between the responses of the groups.

b) the environmental policy of the organisation

		Strongly Agree	Agree	Uncertain or Does not matter	Disagree	Strongly Disagree	Did not Answer	Average/ % Agree
Auditors	No of resp.	7	13	0	2	1	0	4.0
Auditors	Percentage	30	57	0	9	4	0	87
Managers	No of resp.	8	10	0	1	0	0	4.3
Managers	Percentage	42	53	0	5	0	0	95
Users	No of resp.	6	10	0	3	0	0	4.0
Users	Percentage	32	52	0	16	0	0	84

Significant differences according to Fisher's exact test at the 5% level:

None



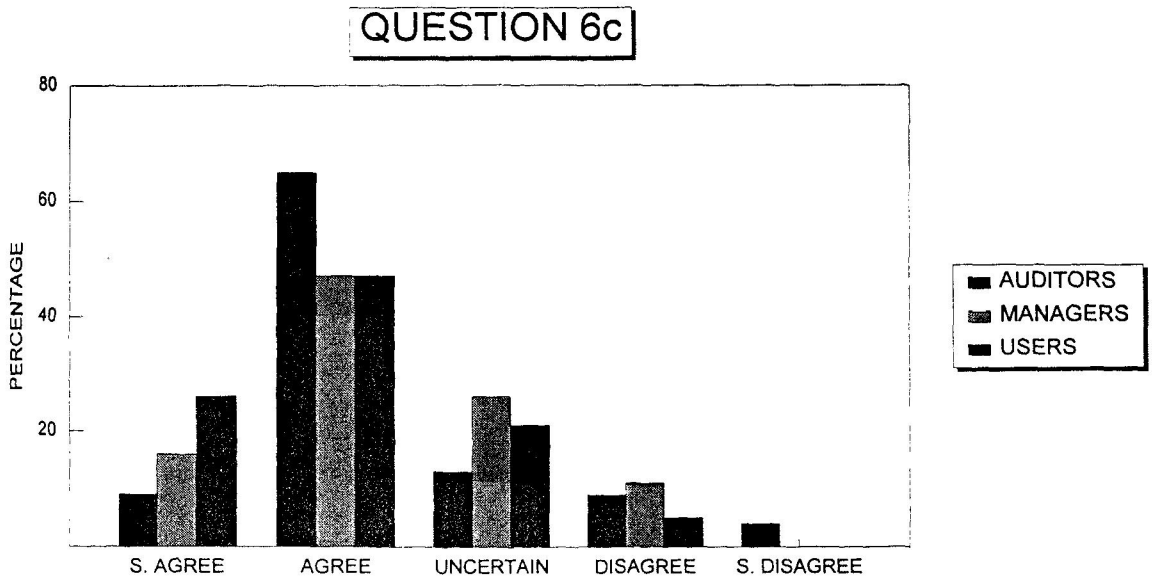
The respondents felt that the environmental policy of an organisation should be published as part of its annual financial statements. The groups had no significant difference between their responses to this question.

c) measurable targets in physical units and Rand amounts, where applicable, based on the environmental policy e.g. emissions

		Strongly Agree	Agree	Uncertain or Does not matter	Disagree	Strongly Disagree	Did not Answer	Average/ % Agree
Auditors	No of resp.	2	15	3	2	1	0	3.7
Auditors	Percentage	9	65	13	9	4	0	74
Managers	No of resp.	3	9	5	2	0	0	3.7
Managers	Percentage	16	47	26	11	0	0	63
Users	No of resp.	5	9	4	1	0	0	4.0
Users	Percentage	26	48	21	5	0	0	74

Significant differences according to Fisher's exact test at the 5% level:

None



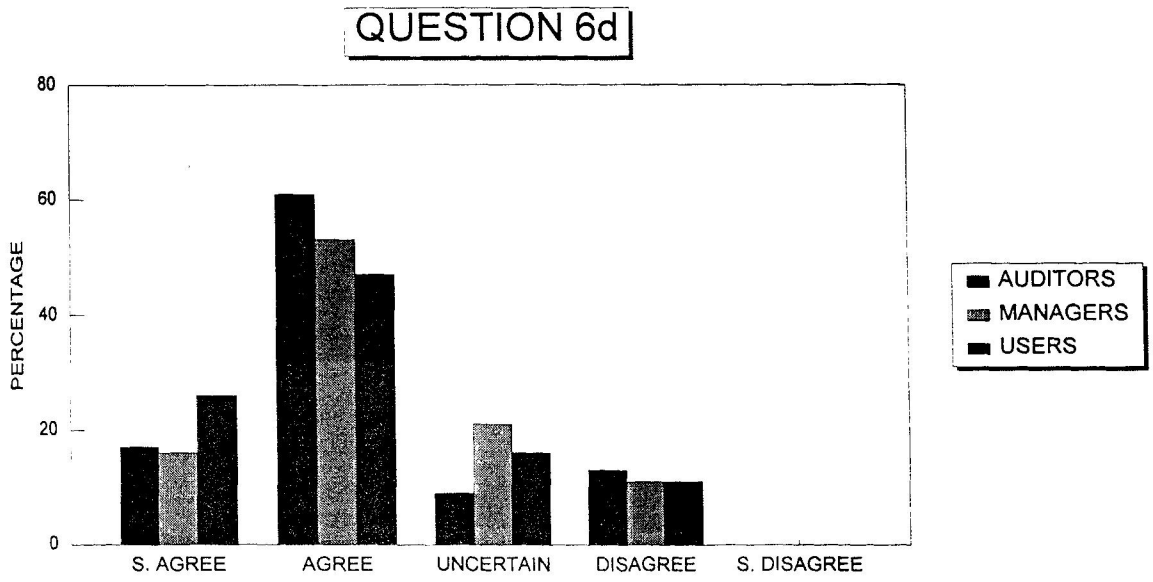
Auditors, managers and users agreed that measurable targets based on the environmental policy of an organisation should be disclosed. There were no significant differences between the responses of the three groups.

d) performance against environmental targets and comparative figures (previous year)

		Strongly Agree	Agree	Uncertain or Does not matter	Disagree	Strongly Disagree	Did not Answer	Average/ % Agree
Auditors	No of resp.	4	14	2	3	0	0	3.8
Auditors	Percentage	17	61	9	13	0	0	78
Managers	No of resp.	3	10	4	2	0	0	3.7
Managers	Percentage	16	52	21	11	0	0	68
Users	No of resp.	5	9	3	2	0	0	3.9
Users	Percentage	26	47	16	11	0	0	74

Significant differences according to Fisher's exact test at the 5% level:

None



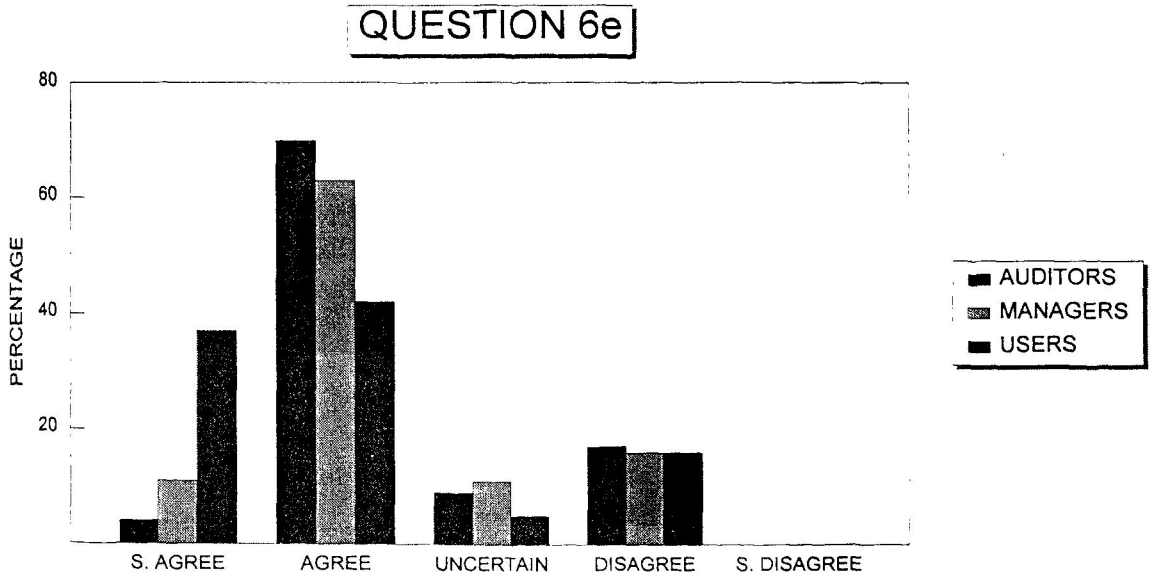
The three groups were again equally positive about reporting performance against environmental targets and comparative figures. Targets would be of no use unless the actual performance is known. It therefore stands to reason that someone who is in favour of targets (last question) being published would be in favour of performance on targets (this question) being published.

e) environmental costs (energy; waste handling, treatment and disposal; legal compliance; packaging; fines; rehabilitation; recycling; etc.) by category, charged to operating expenses during the period

		Strongly Agree	Agree	Uncertain or Does not matter	Disagree	Strongly Disagree	Did not Answer	Average/ % Agree
Auditors	No of resp.	1	16	2	4	0	0	3.6
Auditors	Percentage	4	70	9	17	0	0	74
Managers	No of resp.	2	12	2	3	0	0	3.7
Managers	Percentage	11	62	11	16	0	0	73
Users	No of resp.	7	8	1	3	0	0	4.0
Users	Percentage	37	42	5	16	0	0	79

Significant differences according to Fisher's exact test at the 5% level:

Auditors vs Users



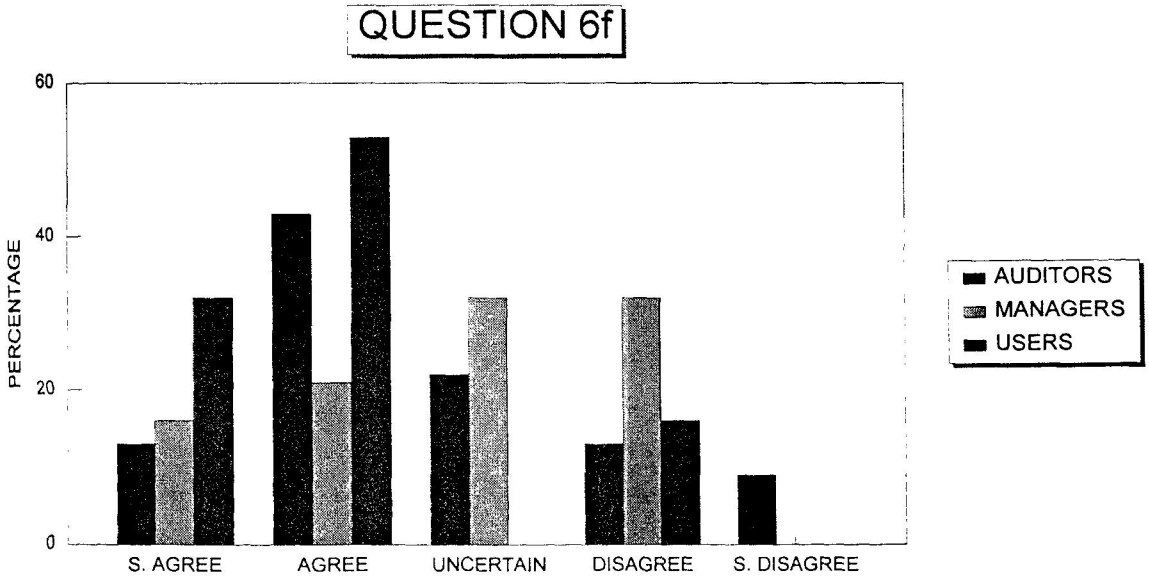
All the groups were in favour of the separate disclosure of environmental costs. Users were significantly more in favour of this kind of disclosure than auditors. Although the difference is not significant, it would seem on the face of it as if managers are more positive than auditors. The trend in other questions was for the difference to be the other way around.

f) independent third party attestation of all the aspects agreed to above

		Strongly Agree	Agree	Uncertain or Does not matter	Disagree	Strongly Disagree	Did not Answer	Average/ % Agree
Auditors	No of resp.	3	10	5	3	2	0	3.4
Auditors	Percentage	13	43	22	13	9	0	57
Managers	No of resp.	3	4	6	6	0	0	3.2
Managers	Percentage	16	20	32	32	0	0	36
Users	No of resp.	6	10	0	3	0	0	4.0
Users	Percentage	32	52	0	16	0	0	84

Significant differences according to Fisher's exact test at the 5% level:

Managers vs Users



The groups agreed with the disclosure of third party environmental audits. Managers were an exception if the percentage agreed method were to be used. Users were significantly more in favour of this kind of reporting than managers. This is in line with the pattern that emerged throughout the analysis of the responses to both the questionnaires. Managers seem to be reluctant to concede to the demand from users for information.

A summary of the research results of section 2 is given in Figure 5.1 and Table 5.5.

FIGURE 5.1: SUMMARY OF THE RESULTS OF THE SECOND SURVEY

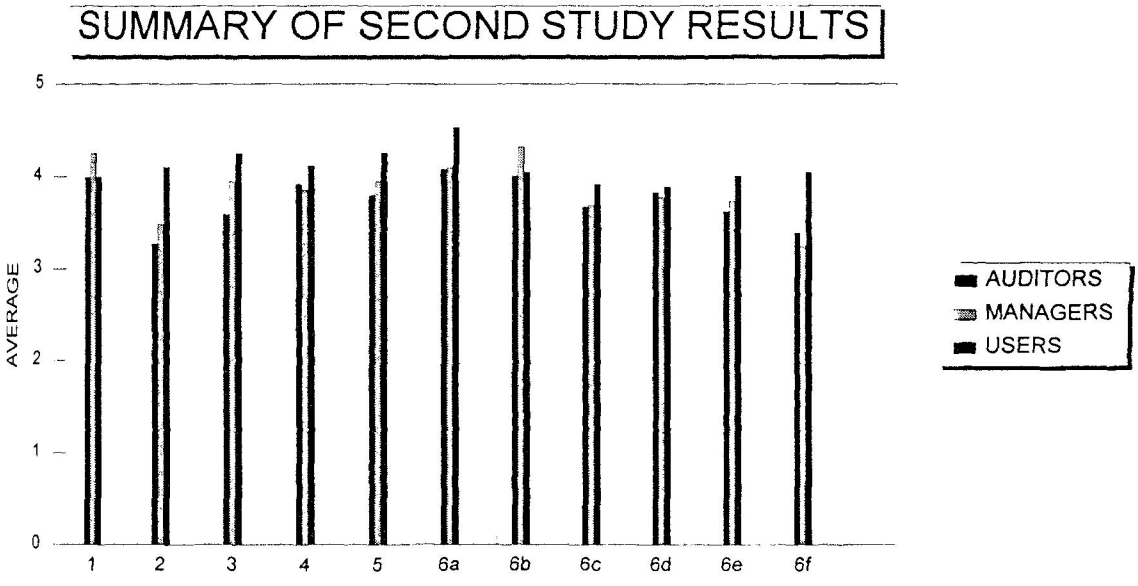


TABLE 5.5: SUMMARY OF SECTION 2 OF THE EMPIRICAL STUDY

	AUDITORS Average	AUDITORS % positive	MANAGERS Average	MANAGERS % positive	USERS Average	USERS % positive
ENVIRONMENTAL DISCLOSURE						
1 More disclosure voluntary	4.0	78	4.2	89	4.0	84
2 More disclosure compulsory	3.3	57	3.5	58	4.1	90
3 Part of annual statements	3.6	70	3.9	84	4.2	89
4 More financial information	3.9	78	3.8	74	4.1	79
5 More non-financial	3.8	74	3.9	89	4.2	89
SPECIFIC DISCLOSURES						
6a Overview of risks/impacts	4.1	87	4.1	89	4.5	100
6b Environmental policy	4.0	87	4.3	95	4.0	84
6c Measurable targets	3.7	74	3.7	63	4.0	74
6d Performance on targets	3.8	78	3.7	68	3.9	74
6e Environmental costs	3.6	74	3.7	73	4.0	79
6f Environmental audit	3.4	57	3.2	36	4.0	84

In the average column, 3 would indicate no preference, whereas 5 would indicate that everyone answered "strongly agree"

5.9 Willingness of Individuals of the Three Groups to Support More Comprehensive Corporate Environmental Reporting

As before, an average score of above 3 would indicate a willingness to support more disclosure. If more than 50% of those who returned questionnaires agreed, this would be an even stronger indication of willingness to support more disclosure. The questions that were aimed at establishing the willingness to support more disclosure were to be found in the second section of the questionnaire (refer to Appendixes 17 and 18).

The aggregate of these responses is contained in Table 5.6.

TABLE 5.6: AGGREGATE OF ANSWERS TO THE SECOND SECTION OF THE QUESTIONNAIRE

		Aggregate of Second Section	Aggregate of Second Section Question 6
Auditors	- Average	3.7	3.8
	- % Agreed	74	76
Managers	- Average	3.8	3.8
	- % Agreed	75	71
Users	- Average	4.1	4.1
	- % Agreed	84	83

The aggregates in the first column of Table 5.6 contain the responses to diverse questions. Question 6 of the second section of the questionnaire required respondents to indicate their response to 6 different types of environmental reporting. The aggregates for question 6 only were calculated and form the second column of Table 5.6. The figures in the two columns are almost identical.

Since the averages are all above 3 and the percentages are all above 50, all three groups are willing to support more comprehensive corporate environmental reporting.

5.10 Recommendations for the Accounting Profession and Government regarding Minimum Requirements for Corporate Environmental Reporting in South Africa

In Chapter 4 recommendations were made based on the questions in the first survey. The most popular 9 types of environmental reporting (out of a possible 19) were taken as a preliminary recommendation. The environmental reporting type in the ninth position had the approval of 72% of users. In this survey, none of the specific types of environmental reporting in the questionnaire had the approval of less than 74% of users. It would, therefore, be difficult to exclude any of these types of disclosure. Therefore, the following types should be added to the recommendation made in section 4.11:

- measurable targets in physical units and rand amounts, where applicable, based on the environmental policy e.g. emissions
- environmental costs (energy; waste handling; treatment and disposal; legal compliance; packaging; fines; rehabilitation; recycling; etc.) by category, charged to operating expenses during the period
- independent third party attestation of all environmental reporting.

The constraints of cost/benefit and information overload will have to be born in mind in the final recommendation to be made in Chapter 6. Independent third party attestation might be a contentious issue, as the results of the two surveys were significantly different (refer to section 5.12 below).

5.11 Conclusions

The results of the questionnaire could be used to make many deductions and arrive at many conclusions. However, deductions and conclusions are limited to relate only to hypothesis 2 outlined in Chapter 1.

The problems encountered in the first empirical study (refer to sections 4.5 and 4.12) were addressed in the second study. The response rate was acceptable in the second study. Furthermore, the responses in the user group consisted of individuals who were more representative of users of financial statements than those in the first study. Forty percent of the users were still accountants, but this figure reduced to only (4/19) 21% of respondents. The accountants were also proven to be users on other counts such as being company shareholders, employees and customers. A further improvement was therein that the likely responses of the non-respondents were established.

The results of the second empirical test are, therefore, in all respects more reliable than those of the first test.

Hypothesis 2 Support more reporting

Auditors, managers and users of financial statements support more comprehensive corporate environmental reporting.

Recommendations for the accounting profession and government regarding minimum requirements for corporate environmental accounting in South Africa

The specific types of environmental reporting given below should be added to the preliminary list given in section 4.12. The recommendation will be reconsidered in its entirety before it is finalised in Chapter 6.

- measurable targets in physical units and rand amounts, where applicable, based on the environmental policy e.g. emissions

- environmental costs (energy; waste handling; treatment and disposal; legal compliance; packaging; fines; rehabilitation; recycling; etc.) by category, charged to operating expenses during the period
- independent third party attestation of all environmental reporting.

5.12 Comparison Between the Results of the First and the Second Study

The results of the second empirical study were compared to the results obtained in the first study by way of Fisher's exact test at the 5% level. For example, the auditors' responses to Question 1 in the second study were compared to the auditors' responses to Question 2 of section 3 of the first study. This resulted in 33 tests, one for each of the three groups for each of the 11 questions. The results of the tests are tabulated in Appendix 27.

The tests indicate that there are no significant differences between the responses to the first and the second surveys, apart from Question 6f of the second study. That question deals with independent attestation of environmental reporting. Significant differences were found in the auditor, manager and the user categories.

The three groups were all significantly more in favour of reporting the results of independent performed environmental audits in the second study than in the first.

The differences in this question on the reporting of environmental audits did not, however, lead to a difference in the conclusion reached regarding the second hypothesis.

The reason for the difference found in the responses to this last question of the second survey compared to the relevant question in the first could be related to the length of the two questionnaires. In the second study, the question came after 5 other examples of specific disclosures on which respondents had to give their opinion. In the first study it came after 18 such examples. In the first survey respondents may, therefore, have been more concerned

about the additional burden that the disclosure of the many examples of environmental information would impose on a company. Other considerations might have been cost/benefit (refer to section 2.7.1) and information overload (refer to section 2.7.4).

Respondent may feel that too much information will not be fully absorbed and utilised by users and will cost more to produce than the benefits derived from doing so. This could be the reason for a more positive response to the same proposition in a situation where fewer alternatives were suggested.

A smaller number of environmental items to be reported will apparently be more acceptable (refer to section 4.10). A recommendation in this regard will be made in the final chapter.