

## CHAPTER EIGHT

### THE SURVEY

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#### 8.1 INTRODUCTION

This chapter forms part of Phase Three of the Mitroff model as described in Chapter One and is the third step in the triangulation method as described in Chapter Four.

In supplementation to the analyses that were performed and described in Chapter Seven, this chapter reports on the results of a questionnaire that was distributed to a selection of compilers and users of financial statements. The questionnaire sets out to determine the views and opinions of compilers and users of financial statements regarding the use of financial statements to determine financial health.

#### 8.2 THE SURVEY

Researchers have different perceptions about the usefulness of the financial statements a company is compelled by law to prepare. Some perceive the financial statements as a useful and trustworthy representation of the financial health of a company, whereas others differ.

Musvoto and Gouws (2012:833) explain that meaningfulness is fundamental to every type of measurement. Since accounting is considered to be a measurement discipline, one can expect that accounting information needs to be meaningful. However, in their study, Musvoto and Gouws (2012:833) find that accounting information is not meaningful. The reasons for their statement stem from the following observations:

- Meaningfulness of statements about measurement data is preserved under transformations that are permissible on that data. Permissible transformations are

transformations that leave the scale of measurement invariant. A scale of measurement specifies the statistical procedures that may be carried out on measurement information. The concept of meaningfulness is an all or nothing concept. A statement is meaningful or it is not.

- The object of measurement in accounting is value or cost. Monetary units are used to represent the value of the elements of financial statements. Therefore, meaningful statements about measurement information are only those that preserve the relationship between monetary units and value.
- In the accounting discipline there are no specified scales of measurement. Yet measurement information is meaningful once a scale of measurement is specified. This leads to the conclusion that accounting measurement information cannot be meaningful.
- The value of an element of the financial statement is ambiguous and cannot be empirically tested. Therefore the invariance of value cannot be established when a statistical procedure is performed on measurements of value. From this follows a conclusion that the meaningfulness of accounting information cannot be established.

Apart from the financial statements not being meaningful, Musvoto and Gouws (2011) also have an issue about the going concern assumption that is made in accounting. The going concern assumption states that the financial statement of an entity is prepared on the assumption that the entity will continue in operation for the foreseeable future. According to Musvoto and Gouws (2011:41), accounting literature indicates that one can measure the attributes of accounting phenomena under the going concern assumption. However, they argue that this is not possible. The reasons for their conclusion stem from the following:

- The going concern principle states that business activities can be assumed to flow non-stop through a business entity until the point of liquidation.
- Income is considered not to be an intrinsic property of an accounting entity. As a result, there is a lack of agreement among accounting professionals about the meaning or relevance of income.

- The going concern concept assumes profitability, as nobody would expect a company that continuously makes losses to continue into the foreseeable future. The going concern concept implies stability of the firm and the economy. A problem with the going concern principle is that one generalises from a limited number of observations. There are too many unknown variables in the future to assume a business will continue indefinitely.
- Assuming going concern implies the existence of a liquidating entity. Therefore, the intuitive beliefs that come from the economic environment suggest the existence of a business world consisting of specific entities.
- The concept of measurement is only applicable to empirical phenomena.

As a result of the discrepancies in researchers' finding regarding the usefulness of financial statements, a survey is a useful means to determine the perceptions of practitioners in the field of accounting. This refers to both the users and the compilers of financial statements.

### **8.3 SURVEY RESEARCH METHODOLOGY**

The methodology of the survey is presented in Chapter Four.

Table 8.1 presents to the reader the formal statements from which the statements in the questionnaire resulted.

**Table 8.1: The statements of experts on which the questionnaire was based**

No	Questionnaire statement	Original statement	Category
S1	Accounting data has the power to predict problems with financial health.	Brigham, Gapenski and Daves (1999) - The information contained in an annual report is used by investors to help form expectations about future earnings and dividends.	Accounting
S2	The annual report can help one to make financial decisions about a company.	Altman (1983) - A basic objective of financial statements is to provide information useful for making economic decisions.	Accounting
S3	Information in the financial statements is not enough to make deductions about the financial health of a company.	Anderson and Epstein (1996) - Research has shown that the annual report does not provide enough information.	Accounting
S4	It can happen that false information appears in the annual report.	Wheatley (1999) - Information is so vital to the continued existence of an organisation that people tend to fill gaps by making up information	Accounting
S5	It is important to consider interactions between financial statement items when evaluating a company.	Prigogine and Stengers (1984) - In general, interactions cannot be ignored.	Accounting
S6	It is the purpose of financial statements to provide information to make decisions about the financial health of a company possible.	Epstein and Pava (1993) - The annual report has as one of its main purposes that of being a communication tool to provide parties with an interest in a company with information about that company.	Accounting
S7	Models (e.g. the Altman model for financial distress) used to measure financial health cannot be trusted to give a perfect view of the state of a company.	Altman and Hotchkiss (2006) - In the Enron and WorldCom cases, and several other fraud cases that we are aware of, although tools like Z-score and EDF (expected default frequency) were available, losses were still incurred by even the most sophisticated investors and financial institutions. Having the models is simply not enough!	Ratios

	<b>Questionnaire statement</b>	<b>Original statement</b>	<b>Category</b>
S8	More than the numbers need to be considered when analysing the financial statements to determine financial health.	Goldberg (2001) - The interpreter and user of annual reports need to take a look at the underlying concepts that the data is based on. Nothing should therefore be left out, as it can have an influence on how other aspects ought to be interpreted.	Accounting
S9	I am willing to make decisions about a company based on historical information.	Qua-Enoo (2002) - Annual reports are simply made available too late to be thoroughly meaningful for decision-making and thus also prediction.	Accounting
S10	Predicting the future is one of the objectives of financial statements.	Epstein and Pava (1993) - In addition to the problem that annual reports are often the only information available to interested parties, there is the added responsibility on annual reports that they are used to predict the future. This has even become one of the objectives of accounting; together with comparison and evaluation.	Accounting
S11	Qualitative information is viewed as being of lesser importance.	Wheatley (1999) - Too much focus on quantitative measurement is a major problem in companies and other organisations.	Accounting
S12	Ratio analysis as a tool ought to be eliminated.	Altman and Hotchkiss (2006) - Starting in the 1960s, some practitioners, and certainly many academicians, had been moving toward the possible elimination of ratio analysis as an analytical technique in assessing firm performance.	Ratios
S13	Ratio analysis can serve a number of purposes and can even be used to indicate problems with financial health.	Beaver (Altman, 1983) claimed that his most important contribution was to suggest a framework for the evaluation of accounting data, not merely for failure prediction, but for any purpose.	Ratios
S14	Ratios are not as effective as some other measures of analysis.	Moriarity (Altman, 1983) found that simple "faces" (multidimensional graphics) were more effective bankrupt/non-bankrupt indicators than the ratios...	Ratios
S15	Ratios can be useful, but it depends on the selection of ratios.	Edmister (Altman, 1983) concluded that the predictive power of ratio analysis depends upon both the choice of analytical method and the selection of ratios.	Ratios
S16	So-called "fraud" revelations can cause enough damage to a company so that it fails.	Altman and Hotchkiss (2006) - But it did go under, primarily because of the fraud revelations and the attendant costs due to the loss of credit availability	Accounting

	<b>Questionnaire statement</b>	<b>Original statement</b>	<b>Category</b>
S17	The analysis of financial statements by means of ratios can be used to detect financial health problems.	Altman and Hotchkiss (2006) - The detection of company operating and financial difficulties is a subject that has been particularly amenable to analysis with financial ratios.	Ratios
S18	The information from financial statements can be used for decision-making.	Anderson and Epstein (1996) - Accounting can be regarded as one of the information systems in a company, because its main purpose is to provide relevant parties with meaningful information to facilitate decision-making.	Accounting
S19	The information in the annual report can be used for predictive purposes.	Altman (1983) - His (Beaver's) major finding was that financial ratios, or more generally, accounting data, have the ability to predict failure for at least five years before failure.	Accounting
S20	The information in the financial statements is not enough to base decisions on.	Gouws and Lucouw (1999) - A lot of important data is left out when the company is measured and interpreted by means of accounting and the resulting annual reports. The final numbers that are provided are only the proverbial 'tip of the iceberg'.	Accounting
S21	The narrative parts of the financial statements may be of more value than the numeric parts.	Qua-Enoo (2002) - More recent research has indicated that of all the different statements presented in an annual report, the chairman's report is deemed the most important.	Accounting
S22	There are measures other than the annual report that can be used to indicate the financial health of a company.	Altman and Hotchkiss (2006) - In general, ratios measuring profitability, liquidity, leverage, and solvency, and multidimensional measures, like earnings and cash flow coverage, prevailed as the most significant indicators of financial distress.	Ratios
S23	There are other sources of information that need to be consulted when analysing a company's financial health.	Hirshleifer and Teoh (2003) - Outside factors that also have an influence on the results in the annual report, such as the economic situation and market-related factors, are normally omitted.	Accounting
S24	There are various means to manipulate the financial statements.	DeFond and Jiambalvo (1991) - Both GAAP alternatives and overstatement errors can be used to enhance earnings	Accounting
S25	There is a relationship between the fairness of presentation in the financial statements and a company having financial difficulties.	Altman (1983) - An opinion expressing doubts concerning a company's ability to continue as a going concern is based on the uncertainty of the fairness of presentation of the financial statements.	Accounting

**Source:** Author's own

## 8.4 STATISTICAL ANALYSIS OF THE QUESTIONNAIRE

A total of 244 respondents gave feedback on the questionnaire, of which seven were eliminated because of the questionnaires being incomplete. That is a response rate of 47%. In this following section, the responses on each of the statements are evaluated.

The questionnaire consists of 25 items related to the usefulness of the financial statements as they are published in the annual report. All the data collected from the questionnaires is analysed and described in the sections that follow.

The figures that are used to base the mean, standard deviation, etc., on are based on a number allocated to each response that can possibly be given by a respondent. The numbers are allocated as follows:

1 = “Strongly disagree”

2 = “Disagree”

3 = “Neither agree nor disagree”

4 = “Agree”

5 = “Strongly agree”

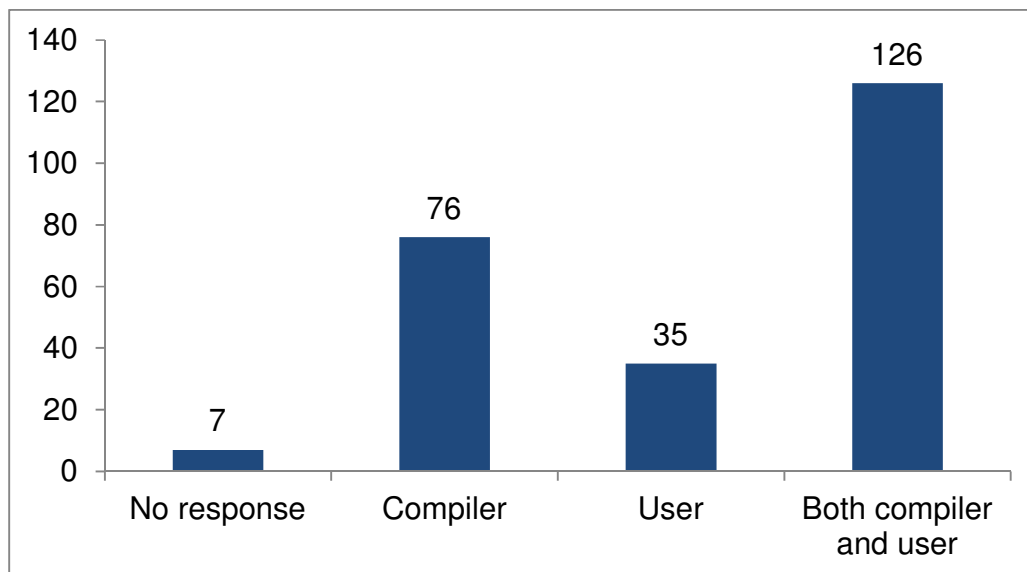
The data from the questionnaire is submitted to the BMDP Statistical Software Package<sup>®</sup> and for all the statements the following is calculated:

- Mean
- Median
- Standard deviation
- Frequency in number and percentage
- Factor analysis

### 8.4.1 Basic descriptive analysis

Figure 8.1 depicts in graphic format the profile of the respondents who took part in the survey. The majority of the participants are both compilers and users of financial statements.

**Figure 8.1: Respondents' experience with financial statements**



**Source:** BMDP<sup>®</sup> output

For basic descriptive, the following was calculated and presented in a summary in Table 8.2:

- Mean
- Standard deviation
- Median



**Table 8.2: Summary of means and standard deviations of the questionnaire statements**

No.	Statement	N	Mean	Standard Deviation	Median
S1	Accounting data in the annual report has the power to predict problems with financial health.	237	4.046	0.755	4
S2	The annual report can help one to make financial decisions about a company.	237	4.181	0.680	4
S3	Information in the annual report is not enough to make deductions about the financial health of a company.	237	2.612	1.109	2
S4	It can happen that false information appears in the annual report.	237	4.046	0.715	4
S5	It is important to consider interactions between financial statement items when evaluating a company.	237	4.376	0.573	4
S6	It is the purpose of financial statements to provide information to make decisions about the financial health of a company possible.	237	3.975	0.775	4
S7	Models (e.g. the Altman model for financial distress) used to measure financial health cannot be trusted to give a perfect view of the state of a company.	237	2.641	0.788	3
S8	More than the numbers need to be considered in one's analysis of the annual report to determine financial health.	237	4.300	0.769	4
S9	I am willing to make decisions about a company based on historical information.	237	3.207	0.980	4
S10	Predicting the future is one of the objectives of annual reports.	237	3.021	1.019	3
S11	Qualitative information in the annual report is generally viewed as being of lesser importance.	237	3.013	0.950	3
S12	Ratio analysis as a tool ought to be eliminated.	237	4.059	0.784	4
S13	Ratio analysis can serve a number of purposes and can even be used to indicate problems with financial health.	237	4.173	0.624	4

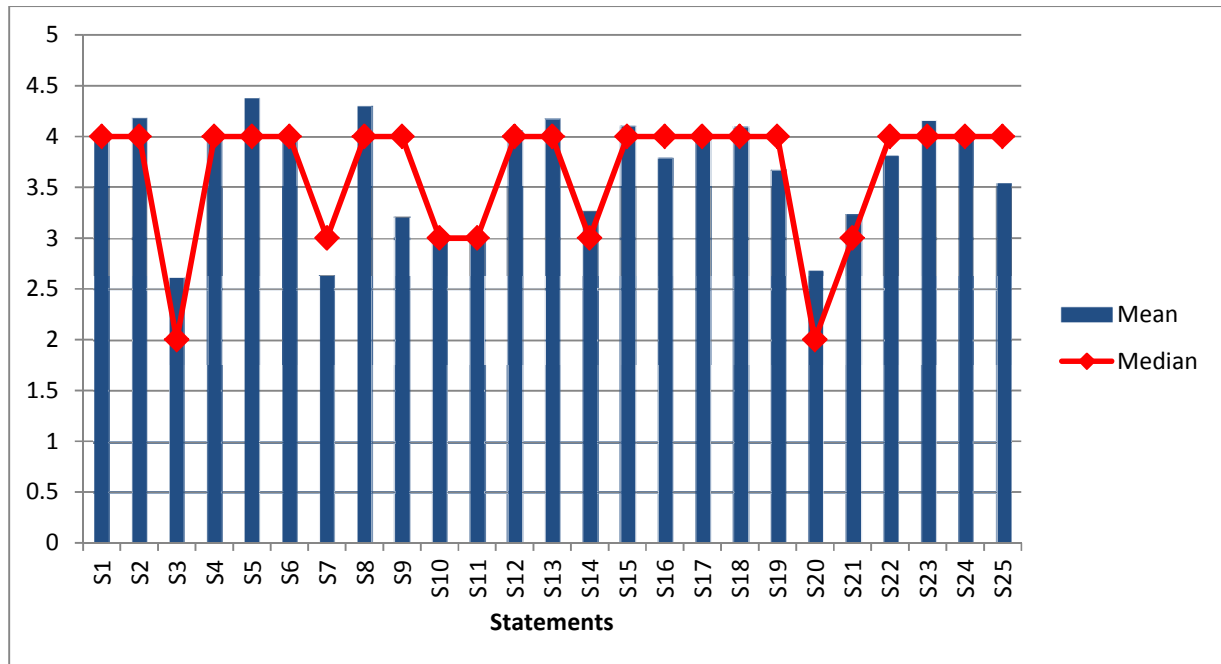
No.	Statement	N	Mean	Standard Deviation	Median
S14	Ratios are not as effective as some other measures of analysis.	237	3.266	0.834	3
S15	Ratios can be useful, but it depends on the selection of ratios.	237	4.105	0.522	4
S16	So-called “fraud” allegations can cause enough damage to a company so that it fails.	237	3.793	0.789	4
S17	The analysis of the financial statements in the annual report by means of ratios can be used to detect financial health problems.	237	3.992	0.560	4
S18	The information from financial statements can be used for decision-making.	237	4.093	0.582	4
S19	The information in the annual report can be used for predictive purposes.	237	3.675	0.786	4
S20	The information in the annual report statements is not enough to base decisions on.	237	2.692	1.047	2
S21	The narrative parts of the annual report may be of more value than the numeric parts.	237	3.232	0.888	3
S22	There are measures other than the annual report that can be used to indicate the financial health of a company.	237	3.814	0.701	4
S23	There are other sources of information that need to be consulted when analysing a company’s financial health.	237	4.156	0.501	4
S24	There are various means to manipulate the financial statements.	237	4.034	0.706	4
S25	There is a relationship between the fairness of presentation in the annual report and a company having financial difficulties.	237	3.549	0.880	4

**Source:** BMDP<sup>®</sup> output

The data in Table 8.2 is discussed in detail in Section 8.4.2.

In Figure 8.2 it can be seen that nine items had mean responses greater than the median response and 16 items had mean responses equal to or lower than the median response. For the majority of the items, respondents replied closely to a four (i.e. “Agree”) on the Likert scale.

**Figure 8.2: Mean and median distribution (n = 237)**



Source: BMDP<sup>®</sup> output

### 8.4.2 Frequencies

Tables 8.3 to 8.27 provide the frequencies of the responses per statement with a short description after each. The results are summarised at the end of the document, as well as in Chapter 9.

**Table 8.3: Accounting data in the annual report has the power to predict problems with financial health (S1)**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
Strongly disagree	1	0.42
Disagree	14	5.91
Neither agree nor disagree	14	5.91
<b>Agree</b>	<b>152</b>	<b>64.14</b>
<b>Strongly agree</b>	<b>56</b>	<b>23.63</b>

**Source:** BMDP<sup>©</sup> output

The 88% respondents who are in agreement with this positive statement about the use of accounting data indicates that the compilers and users of financial statements find the financial statements a useful indicator of financial health.

**Table 8.4: The annual report can help one to make financial decisions about a company (S2)**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
Strongly disagree	1	0.42
Disagree	6	2.53
Neither agree nor disagree	13	5.49
<b>Agree</b>	<b>146</b>	<b>61.60</b>
<b>Strongly agree</b>	<b>71</b>	<b>29.96</b>

**Source:** BMDP<sup>©</sup> output

With 92% of the respondents in agreement with this positive statement about the use of financial data, this indicates that the users and the compilers of financial statements believe financial data can be used for decision-making purposes.

**Table 8.5: Information in the annual report is not enough to make deductions about the financial health of a company (S3)**

Response	Frequency	Percent
<b>Strongly disagree</b>	<b>30</b>	<b>12.66</b>
<b>Disagree</b>	<b>107</b>	<b>45.15</b>
Neither agree nor disagree	37	15.61
Agree	51	21.52
Strongly agree	12	5.06

**Source:** BMDP<sup>©</sup> output

A little more than half of the respondents disagree with this negative statement. This means that the users and the compilers of financial statements believe that the information in the financial report is enough to make deductions about financial health. However, there was some diversity of response with 27% of respondents indicating that the annual report may well not be sufficient as a source of information.

**Table 8.6: It can happen that false information appears in the annual report (S4)**

Response	Frequency	Percent
Disagree	11	4.64
Neither agree nor disagree	22	9.28
<b>Agree</b>	<b>149</b>	<b>62.87</b>
<b>Strongly agree</b>	<b>55</b>	<b>23.21</b>

**Source:** BMDP<sup>©</sup> output

86% of the respondents who are in agreement with this negative statement indicate that the annual report cannot be considered to be completely true and trustworthy.

**Table 8.7: It is important to consider the interactions between financial statement items when evaluating a company (S5)**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
Strongly disagree	1	0.42
Neither agree nor disagree	5	2.11
<b>Agree</b>	<b>134</b>	<b>56.54</b>
<b>Strongly agree</b>	<b>97</b>	<b>40.93</b>

**Source:** BMDP<sup>®</sup> output

With 97% of respondents in agreement with this statement, it is clear that compilers and users of financial statements believe the figures at face value are not sufficient as an indication of financial health.

**Table 8.8: It is the purpose of financial statements to provide information to make decisions about the financial health of a company possible (S6)**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
Disagree	18	7.59
Neither agree nor disagree	20	8.44
<b>Agree</b>	<b>149</b>	<b>62.87</b>
<b>Strongly agree</b>	<b>50</b>	<b>21.10</b>

**Source:** BMDP<sup>®</sup> output

84% of the respondents who are in agreement with this neutral statement indicate that a perception exists that the financial statements are indeed prepared for the purpose of decision-making.

**Table 8.9: Models (e.g. the Altman model for financial distress) used to measure financial health cannot be trusted to give a perfect view of the state of a company (S7)**

Response	Frequency	Percent
Strongly disagree	14	5.91
Disagree	87	36.71
<b>Neither agree nor disagree</b>	<b>108</b>	<b>45.57</b>
Agree	26	10.97
Strongly agree	2	0.84

**Source:** BMDP<sup>©</sup> output

Statement 7 unleashes diversity in responses from the respondents. Almost half of the respondents preferred not to give a clear opinion on this negative statement.

**Table 8.10: More than only numbers need to be considered when one analyses the annual report to determine financial health (S8)**

Response	Frequency	Percent
Strongly disagree	2	0.84
Disagree	10	4.22
Neither agree nor disagree	3	1.27
<b>Agree</b>	<b>122</b>	<b>51.48</b>
<b>Strongly agree</b>	<b>100</b>	<b>42.19</b>

**Source:** BMDP<sup>©</sup> output

Even though the majority of respondents agreed with prior statements about the purpose and uses of financial information in previous statements, a majority of 94% of respondents agree through their responses to this statement that more than the financial statements need to be considered when a company is evaluated for financial health.

**Table 8.11: I am willing to make decisions about a company based on historical information (S9)**

Response	Frequency	Percent
Strongly disagree	8	3.38
Disagree	62	26.16
Neither agree nor disagree	48	20.25
Agree	111	46.84
Strongly agree	8	3.38

**Source:** BMDP<sup>®</sup> output

Statement 9 results in a diversity of responses with only 51% of respondents indicating that they are willing to make decisions about a company based on the historical information that is available about the company.

**Table 8.12: Predicting the future is one of the objectives of annual reports (S10)**

Response	Frequency	Percent
Strongly disagree	10	4.22
Disagree	78	32.91
Neither agree nor disagree	58	24.47
Agree	79	33.33
Strongly agree	12	5.06

**Source:** BMDP<sup>®</sup> output

Statement 10 results in a diversity in the responses from respondents. This indicates that respondents are in disagreement with each other as to the predictive power of the information in the financial statements.



**Table 8.13: Qualitative information in the annual report is generally viewed as being of lesser importance (S11)**

Response	Frequency	Percent
Strongly disagree	5	2.11
Disagree	83	35.02
Neither agree nor disagree	60	25.32
Agree	82	34.60
Strongly agree	7	2.95

**Source:** BMDP<sup>©</sup> output

The diversity in responses derived from this negative statement indicates that the respondents are in disagreement as to the perceived usefulness of the qualitative information that is included in the annual report.

**Table 8.14: Ratio analysis as a tool ought to be eliminated (S12)**

Response	Frequency	Percent
<b>Strongly disagree</b>	<b>63</b>	<b>26.58</b>
<b>Disagree</b>	<b>141</b>	<b>59.49</b>
Neither agree nor disagree	18	7.59
Agree	14	5.91
Strongly agree	1	0.42

**Source:** BMDP<sup>©</sup> output

86% of the respondents disagree with this negative statement about ratio analysis, indicating that the compilers and users of financial statements believe that there is a place for ratio analysis in the accounting environment.

**Table 8.15: Ratio analysis can serve a number of purposes and can even be used to indicate problems with financial health (S13)**

Response	Frequency	Percent
Disagree	7	2.95
Neither agree nor disagree	8	3.38
<b>Agree</b>	<b>159</b>	<b>67.09</b>
<b>Strongly agree</b>	<b>63</b>	<b>26.58</b>

Source: BMDP<sup>®</sup> output

To confirm the result from Statement 12, the responses to this positive statement about ratio analysis indicate that 94% of respondents do believe in the use of ratio analysis.

**Table 8.16: Ratios are not as effective as some other measures of analysis (S14)**

Response	Frequency	Percent
Strongly disagree	1	0.42
Disagree	47	19.83
Neither agree nor disagree	86	36.29
Agree	94	39.66
Strongly agree	9	3.80

Source: BMDP<sup>®</sup> output

As with Statement 7, the diversity of responses to this negative statement about ratio analysis indicates that the respondents are in disagreement amongst each other regarding the use of other methods of analysis than financial ratios.

**Table 8.17: Ratios can be useful, but it depends on the selection of ratios (S15)**

Response	Frequency	Percent
Disagree	3	1.27
Neither agree nor disagree	12	5.06
<b>Agree</b>	<b>179</b>	<b>75.53</b>
<b>Strongly agree</b>	<b>43</b>	<b>18.14</b>

Source: BMDP<sup>®</sup> output

A majority of 94% of respondents indicate that ratios are most useful if the best and most appropriate ones are selected for the purposes they are to be used for.

**Table 8.18: So-called “fraud” allegations can cause enough damage to a company so that it fails (S16)**

Response	Frequency	Percent
Disagree	20	8.44
Neither agree nor disagree	43	18.14
<b>Agree</b>	<b>140</b>	<b>59.07</b>
<b>Strongly agree</b>	<b>34</b>	<b>14.35</b>

Source: BMDP<sup>®</sup> output

73% of the respondents recognise the negative effect that “fraud” allegations can have on the image of a company and that it can cause a company to fail.

**Table 8.19: The analysis of the financial statements in the annual report by means of ratios can be used to detect financial health problems (S17)**

Response	Frequency	Percent
Disagree	6	2.53
Neither agree nor disagree	20	8.44
<b>Agree</b>	<b>181</b>	<b>76.37</b>
<b>Strongly agree</b>	<b>30</b>	<b>12.66</b>

Source: BMDP<sup>®</sup> output

As with previous positive statements about the use of financial ratios, the majority of respondents (89%) believe that ratio analysis is a useful means of analysis and can therefore be applied to establish the financial health of a company.

**Table 8.20: The information from financial statements can be used for decision-making (S18)**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
Disagree	2	0.84
Neither agree nor disagree	24	10.13
<b>Agree</b>	<b>161</b>	<b>67.93</b>
<b>Strongly agree</b>	<b>50</b>	<b>21.10</b>

**Source:** BMDP<sup>®</sup> output

As per similar statements previously, 89% of the respondents are in agreement with this positive statement that the information contained in the financial statements is useful for decision-making purposes.

**Table 8.21: The information in the annual report can be used for predictive purposes (S19)**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
Strongly disagree	2	0.84
Disagree	22	9.28
Neither agree nor disagree	46	19.41
<b>Agree</b>	<b>148</b>	<b>62.45</b>
<b>Strongly agree</b>	<b>19</b>	<b>8.02</b>

**Source:** BMDP<sup>®</sup> output

A majority of 70% of respondents place their trust in the predictive power of the information in the annual report.

**Table 8.22: The information in the annual report's financial statements is not enough to base decisions on (S20)**

Response	Frequency	Percent
<b>Strongly disagree</b>	<b>24</b>	<b>10.13</b>
<b>Disagree</b>	<b>99</b>	<b>41.77</b>
Neither agree nor disagree	46	19.41
Agree	62	26.16
Strongly agree	6	2.53

**Source:** BMDP<sup>©</sup> output

A narrow majority of 52% of respondents disagree with the negative statement about the usefulness of financial statements for making decisions. A large proportion of the respondents preferred not to agree or disagree with the statement.

**Table 8.23: The narrative parts of the annual report may be of more value than the numeric parts (S21)**

Response	Frequency	Percent
Strongly disagree	2	0.84
Disagree	52	21.94
Neither agree nor disagree	86	36.29
Agree	83	35.02
Strongly agree	14	5.91

**Source:** BMDP<sup>©</sup> output

The diversity in responses from this neutral statement about the use of narrative and numeric parts of the annual report indicates that the respondents are in disagreement regarding the use of narrative vs. numeric information.

**Table 8.24: There are measures other than the annual report that can be used to indicate the financial health of a company (S22)**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
Disagree	18	7.59
Neither agree nor disagree	30	12.66
<b>Agree</b>	<b>167</b>	<b>70.46</b>
<b>Strongly agree</b>	<b>22</b>	<b>9.28</b>

**Source:** BMDP<sup>®</sup> output

80% of the respondents indicated that they are aware of other means that can be used to determine or evaluate the financial health of a company.

**Table 8.25: There are other sources of information that need to be consulted when analysing a company's financial health (S23)**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
Disagree	2	0.84
Neither agree nor disagree	8	3.38
<b>Agree</b>	<b>178</b>	<b>75.11</b>
<b>Strongly agree</b>	<b>49</b>	<b>20.68</b>

**Source:** BMDP<sup>®</sup> output

In line with the responses derived in Statements 3, 8 and 20, 96% of respondents are in agreement with this statement, which claims that more than the financial statements or the annual report needs to be considered when the financial health of a company is being evaluated.

**Table 8.26: There are various means to manipulate the financial statements (S24)**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
Strongly disagree	1	0.42
Disagree	9	3.80
Neither agree nor disagree	22	9.28
<b>Agree</b>	<b>154</b>	<b>64.98</b>
<b>Strongly agree</b>	<b>51</b>	<b>21.52</b>

Source: BMDP<sup>®</sup> output

87% of the respondents agree with this negative statement about financial statements, indicating an awareness that the financial statements can be manipulated and is therefore not to be completely trusted.

**Table 8.27: There is a relationship between the fairness of presentation in the annual report and a company having financial difficulties (S25)**

<b>Response</b>	<b>Frequency</b>	<b>Percent</b>
Strongly disagree	1	0.42
Disagree	36	15.19
Neither agree nor disagree	55	23.21
<b>Agree</b>	<b>122</b>	<b>51.48</b>
<b>Strongly agree</b>	<b>23</b>	<b>9.70</b>

Source: BMDP<sup>®</sup> output

A majority of 61% of the respondents agree that financial difficulties are related to fairness of presentation in the annual report.

The results from a question-by-question analysis of the statements that were contained in the questionnaire indicates that the users and compilers of financial statements place significant trust in the trustworthiness of financial statements and their use for decision-making purposes. In addition, the use of ratio analysis is perceived to be of significant use in evaluating a company's financial statements. However, most respondents agree

that additional information needs to be sourced and consulted in order to deliver accurate and trustworthy analyses of a company's financial health position.

There was diversity in the responses regarding the predictive power of financial statements since few recognise prediction as an objective of financial statements, while many indicate that financial statements can be used for that purpose.

Most of the respondents agreed that financial statement information can be manipulated and falsified and can therefore in effect not be trusted to provide an accurate indication about financial health.

The responses obtained by posing statements regarding other models of financial analysis resulted in diverse responses from the compilers and users of financial statements.

### **8.4.3 Factor analysis**

Factor analysis is a means to attempt to identify underlying variables or factors that explain the pattern of correlations within a set of observed variables. Factor analysis is often used in data reduction to identify a small number of factors that explain most of the variance that is observed in a much larger number of manifest variables.

The main applications of factor analytic techniques are therefore to (1) reduce the number of variables and (2) detect structure in the relationships between variables so as to classify variables. Therefore, factor analysis is applied as a data reduction or structure detection method.

The variables should be quantitative at the interval or ratio level. Categorical data is not suitable for factor analysis. Data for which Pearson correlation coefficients can sensibly be calculated should be suitable for factor analysis.



Assumptions that are made for factor analysis are that the data should have a bivariate normal distribution for each pair of variables, and observations should be independent. The factor analysis model specifies that variables are determined by common factors (the factors estimated by the model) and unique factors (which do not overlap between observed variables). The computed estimates are based on the assumption that all unique factors are uncorrelated with each other and with the common factors.

Three constructs were identified for the questionnaire survey and were described in Chapter Four. These constructs are related to the three factors that the questionnaire can be divided into and which are to be illustrated here. The three factors can then prove the validity of the three constructs. The constructs are discussed again at the end of the section.

The factor analysis was performed on the results from the questionnaire, using Oblique Rotation, the Direct Oblimin method. The results from the factor analysis are described in the sections that follow.

A first and second factor analysis performed in the BMDP<sup>®</sup> Statistical Software Package indicated those statements that do not have any relation to the three factors. These statements are disregarded for the rest of the factor analysis. The statements that are taken out of the analysis are S1, S5, S7, S11 and S16. This leaves a remaining 20 statements from which the three factors (constructs) that were initially identified can be proven or disproven.

Table 8.28 provides the rotated factor loadings for the final round of factor analysis. It shows the various items that belong to the three factors and the rotated loading on each item. The highest loading for each statement is shown in bold.

**Table 8.28: Rotated Factor Loadings**

No.	Statement	Factor 1	Factor 2	Factor 3
S2	The annual report can help one to make financial decisions about a company.	<b>0.405</b>	0.233	-0.086
S3	Information in the annual report is not enough to make deductions about the financial health of a company.	<b>0.245</b>	0.070	-0.269
S4	It can happen that false information appear in the annual report.	0.042	0.170	<b>0.339</b>
S6	It is the purpose of the annual report to provide information sufficient to make decisions about the financial health of a company possible.	<b>0.427</b>	0.045	0.153
S8	More than the numbers need to be considered one analyses the annual report to determine financial health.	-0.100	0.007	<b>0.259</b>
S9	I am willing to make decisions about a company based on historical information.	<b>0.583</b>	-0.045	-0.076
S10	Predicting the future is one of the objectives of annual reports.	<b>0.547</b>	-0.110	0.008
S12	Ratio analysis as a tool ought to be eliminated.	-0.114	<b>0.630</b>	-0.045
S13	Ratio analysis can serve a number of purposes and can even be used to indicate problems with financial health.	-0.108	<b>0.887</b>	0.133
S14	Ratios are not as effective as some other measures of analysis.	0.083	<b>0.450</b>	-0.17
S15	Ratios can be useful, but it depends on the selection of ratios.	0.013	0.202	<b>0.348</b>
S17	The analyses of the financial statements in the annual report by means of ratios can be used to detect financial health problems.	0.254	<b>0.543</b>	0.188

No.	Statement	Factor 1	Factor 2	Factor 3
S18	The information from financial statements can be used for decision-making.	<b>0.469</b>	0.255	0.095
S19	The information in the annual report can be used for predictive purposes.	<b>0.619</b>	0.005	0.086
S20	The information in the annual report statements is not enough to base decisions on.	<b>0.457</b>	-0.121	-0.294
S21	The narrative parts of the annual report may be of more value than the numeric parts.	-0.066	-0.169	<b>0.293</b>
S22	There are measures other than the annual report that can be used to indicate the financial health of a company.	-0.142	-0.201	<b>0.388</b>
S23	There are other sources of information that need to be consulted when analysing a company's financial health.	0.081	0.078	<b>0.619</b>
S24	There are various means to manipulate the financial statements.	0.032	-0.013	<b>0.447</b>
S25	There is a relationship between the fairness of presentation in the annual report and a company having financial difficulties.	0.218	-0.107	<b>0.479</b>

**Source:** BMDP<sup>®</sup> output

Table 8.29 shows the Eigenvalues drawn from the factor analysis. Even though all Eigenvalues greater than one is usually chosen as possible factors, this study initially identified three possible factors resulting from the analysis. For that reason the factor analysis was structured to deliver only three factors.

**Table 8.29: Histogram of Eigenvalues of unaltered correlation matrix**

1	3.31621	*****
2	2.49176	*****
3	1.91032	*****
4	1.40414	*****
5	1.14668	*****
6	1.07497	*****
7	0.97955	*****
8	0.95047	*****
9	0.86084	*****
10	0.78508	*****
11	0.73873	*****
12	0.66861	*****
13	0.61856	*****
14	0.56639	*****
15	0.52520	*****
16	0.48938	*****
17	0.44720	*****
18	0.38475	*****
19	0.33990	*****
20	0.30127	*****

**Source:** BMDP<sup>®</sup> output

In Table 8.30 is presented the total percentage variance explained in cumulative form for the three identified factors. The total variance is defined in the BMDP Statistical Software Package<sup>®</sup> as the sum of the positive Eigenvalues of the correlation matrix.

**Table 8.30: Total variance explained**

Factor	Variance explained	Cumulative proportion of variance		Carmines theta
		In data space	In factor space	
1	2.4249	0.1212	0.4208	0.6185
2	1.9307	0.2178	0.7559	
3	1.4066	0.2881	1.0000	

**Source:** BMDP<sup>®</sup> output

To test the internal reliability of the factor analyses, a Cronbach's Alpha ( $\alpha$ ) was calculated for each. Cronbach's Alpha is a coefficient of reliability (Cronbach, 1951). Cronbach's Alpha generally increase as the inter-correlations among test items increase, and is thus known as an estimate of internal consistency of the reliability of test scores. Because inter-correlations among test items are maximized when all items measure the same construct, Cronbach's Alpha is widely believed to indirectly indicate the degree to which a set of items measures a single uni-dimensional latent construct. Refer to Table 8.31 below for the Cronbach Alpha values for this study.

**Table 8.31: Cronbach Alpha Reliability Coefficient for the three identified factors**

Factor	Variables	Alpha
Factor 1	Raw	0.692084
	Standardized	0.708519
Factor 2	Raw	0.702871
	Standardized	0.719509
Factor 3	Raw	0.570900
	Standardized	0.594185

**Source:** BMDP<sup>®</sup> output

Table 8.32 on the next page indicates how Cronbach's Alpha can be interpreted. Even though the Cronbach Alpha value for Factor 3 is poor, a decision was made to include it in the analysis since the factor does correlate with one of the factors that were initially identified and defined in the form of constructs.

**Table 8.32: Rule of thumb in interpreting Cronbach's Alpha**

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.8 \leq \alpha < 0.9$	Good
$0.7 \leq \alpha < 0.8$	Acceptable
$0.6 \leq \alpha < 0.7$	Questionable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

**Source:** Rina Owen, statistician

The results of the factor analysis are described in detail in the sections that follow.

**a. Analysis of Factor 1**

Factor 1 can be described as being concerned with *the decision-making and prediction-generating power of financial statements*. The items shown in Table 8.33 were identified as being part of factor 1.

**Table 8.33: Statements that form part of Factor 1**

No.	Statement
S2	The annual report can help one to make financial decisions about a company.
S3	Information in the annual report is not enough to make deductions about the financial health of a company.
S6	It is the purpose of the annual report to provide information sufficient to make decisions about the financial health of a company possible.
S9	I am willing to make decisions about a company based on historical information.
S10	Predicting the future is one of the objectives of annual reports.

No.	Statement
S18	The information from financial statements can be used for decision-making.
S19	The information in the annual report can be used for predictive purposes.
S20	The information in the annual report's statements is not enough to base decisions on.

Source: BMDP<sup>©</sup> output

### b. Analysis of Factor 2

Factor 2 can be described as being concerned with *the use of ratios when analysing a company's financial health*. The items shown in Table 8.34 were identified as being part of Factor 2.

**Table 8.34: Statements that form part of Factor 2**

No.	Statement
S12	Ratio analysis as a tool ought to be eliminated.
S13	Ratio analysis can serve a number of purposes and can even be used to indicate problems with financial health.
S14	Ratios are not as effective as some other measures of analysis.
S17	The analyses of the financial statements in the annual report by means of ratios can be used to detect financial health problems.

Source: BMDP<sup>©</sup> output

### c. Analysis of Factor 3

Factor 3 can be described as being concerned with *whether other sources of information need to be consulted when evaluating the financial health of a company*. The items shown in Table 8.35 were identified as being part of factor 3.

**Table 8.35: Statements that form part of Factor 3**

No.	Statement
S4	It can happen that false information appear in the annual report.
S8	More than just the numbers need to be considered one analyses the annual report to determine financial health.
S15	Ratios can be useful, but it depends on the selection of ratios.
S21	The narrative parts of the annual report may be of more value than the numeric parts.
S22	There are measures other than the annual report that can be used to indicate the financial health of a company.
S23	There are other sources of information that need to be consulted when analysing a company's financial health.
S24	There are various means to manipulate the financial statements.
S25	There is a relationship between the fairness of presentation in the annual report and a company having financial difficulties.

Source: BMDP<sup>©</sup> output

### d. Factor scores and interpretation

In the previous section the following three factors were identified, evaluated and discussed:

Factor 1: The decision-making and prediction-generating power of financial statements

Factor 2: The use of ratios when analysing a company's financial health



Factor 3: The use of more than financial information from the financial statements when analysing a company's financial health

Three constructs for the survey analysis were described in Chapter Four. They are:

- **Construct 1:** Financial statements can be used for decision-making and predicting of the future
- **Construct 2:** Ratio analysis is useful when analysing a company's financial health
- **Construct 3:** There is a need to use more than financial information from the financial statements when analysing a company's financial health

The mean values in Table 8.36 indicate that respondents mostly agree with the statements in all three factors. In terms of minimum and maximum scores, respondents tended to agree with the statements in factors 1 and 2 as maximum scores between 4.75 and 5.00 were recorded. This was not completely the case with Factor 3. A number of respondents agreed with the statements, but the rest tended towards not agreeing or disagreeing.

**Table 8.36: Descriptive statistics summary for the three factors**

Variable	N	Mean	Standard Deviation	Sum	Minimum	Maximum
Factor 1	237	3.43196	0.50137	813.375	1.75	4.750
Factor 2	237	3.87236	0.51596	917.750	1.75	5.000
Factor 3	237	3.90454	0.36122	925.375	2.75	4.875

**Source:** BMDP<sup>®</sup> output

Factor 1 has a mean response of 3.432 (SD = 0.501). This means that respondents are somewhat in agreement that financial statements can be used for decision-making and prediction-generating purposes.

For Factor 2, the mean response of 3.782 (SD = 0.516) is indicative of respondents agreeing that ratio analysis is only of some use when evaluating financial statements

The mean response for Factor 3 is 3.905 (SD = 0.361) which indicates a positive to neutral feeling amongst respondents regarding the use of additional information sources when analysing a company's financial health.

Factor 1 describes Construct 1, indicating that it holds true. By virtue of the results of the questionnaire, it can be seen that the users and the compilers of financial statements agree to the usefulness of financial statements in decision-making and predicting the future.

Factor 2 describes Construct 2, indicating that it holds true. The results of the questionnaire indicate that the users and the compilers of financial statements agree to the usefulness of ratios in analysing the financial health of a company from the financial statements.

Factor 3 describes Construct 3, indicating that it holds true. From the questionnaire results it is clear that the users and the compilers of financial statements agree that more than only the information in the financial statements need to be used when evaluating the financial health of a company.

## **8.5 SUMMARY**

An analysis of the statements in a questionnaire that was completed by a sample of users and compilers of financial statements indicates that the users and compilers of financial statements are convinced of the usefulness of the financial statements.

Responses from 237 users and compilers of financial statements were analysed using basic statistics such as the mean, standard deviation and median as well as a detailed factor analysis. The factors from the factor analysis relate back to three constructs that were described in Chapter Four. By means of the factor analysis relating back to the

constructs, the following observations can be made regarding the experience and subjective opinions of the users and compilers of financial statements:

- Financial statements are useful for decision-making and prediction purposes
- Ratio analysis (interactions between financial statement items) can be useful when analysing a company's financial health
- Other information than only financial information from the financial statements needs to be considered when analysing a company's financial health

In Chapter Nine the findings from all the empirical research are discussed and the stage for further research is set.

## CHAPTER NINE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

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#### 9.1 INTRODUCTION

This chapter forms part of Phase Four of the Mitroff model as described in Chapter One.

Financial analysis has proven to be useful for a variety of purposes in the past, one example being the prediction and identification of financial distress. It is therefore possible that analyses of annual reports have the potential to be helpful also for other purposes. In this study the aim falls specifically on the use of financial analysis to reveal financial health by means of the detection of a risk for accounting irregularities.

Based on the structure that the Mitroff model provides in Chapter One, this chapter presents the results of the research study, relating it back to the research objectives that were identified in Chapter One and described in Chapter Four.

#### 9.2 CONCLUSIONS

The study commences with a literature review in Chapter Two which discusses irregularities that take place in companies in general and provides a particular focus on accounting irregularities. From the available literature it can be observed that accounting irregularities is a real problem in the corporate environment and that they affect various parties. These parties include the tax authorities, the securities exchanges, investors and creditors. Accounting irregularities especially cause a problematic situation for those parties that have a contractual relationship with and a legitimate interest in a company, such as investors and creditors. These entities do not have access to the internal functioning or information of a company, which makes it difficult for them to detect cases of accounting irregularities.

An overview of the uses for financial statement analysis in Chapter Three has shown that it can be applied for various purposes. Perhaps one of the most significant uses is the ability to predict possible financial distress in a company. It gives an indication that financial statement analysis might very well be useful for the detection and identification of accounting irregularities. For that reason, the study focuses on analysing the annual reports, including the financial statements, of five companies that have been identified as having experienced alleged accounting irregularities in the past. The purpose of the study is to determine whether an analysis of the annual report of a company can help interested parties to detect and identify, through certain characteristics, an increased level of risk for accounting irregularities.

In Chapter Four the research methodology of the empirical research is discussed in detail. This gives the reader a detailed background of how the study was approached and how the research was conducted.

The following sections describe how the research objectives were met.

### **9.2.1 Characteristics that are displayed by companies with a higher risk of accounting irregularities**

Relating to the first research objective as stated in Chapters One and Four, Chapter Five is dedicated to an analysis of the findings of various researchers with regard to the characteristics which companies with increased accounting irregularities risk display. From the literature, an initial set of 22 characteristics were identified as being useful in detecting and identifying accounting irregularities. Further analysis determined that four of the characteristics that were initially identified displayed inconsistent results when one observes the results of different researchers.

From the initial 22 characteristics that were identified, 18 characteristics remained. These characteristics are the ones which previous researchers agreed were significantly

useful in the detection and identification of accounting irregularities. These characteristics are (in alphabetical order):

1. complex accounting transactions often involving subjective judgements and significant related-party transactions;
2. problematic relationships with auditors;
3. poor cash flow patterns;
4. companies that are younger than the average age in the industry;
5. inadequate control systems and procedures;
6. non-formalised company culture;
7. high debt levels;
8. problematic behaviour by directors and dubious character of leadership;
9. financial distress;
10. decentralised geographic location;
11. volatile industries and/or a high level of competition;
12. poor liquidity;
13. autocratic management behaviour and character and/or high turnover, an emphasis on short-term performance and/or conflicts of interest;
14. problematic personnel behaviour and character;
15. unexplained changes in receivables and inventory levels;
16. remuneration policies based on shorter-term performance;
17. a shareholding structure with high levels of internal shareholding; and
18. complex organisational structures.

For the subjective quantitative and qualitative analyses of five case study companies, the above are the characteristics that the focus falls on since these have been proven as useful to all parties with an interest in a company. The actual usefulness of these characteristics was proved or disproved through various analyses performed on data from the case study companies.

### **9.2.2 Identification of companies with known violations of accounting irregularities**

The second research objective is answered in Chapter Six, which is devoted to an analysis of the media to identify companies that had proven allegations of accounting irregularities against them. Once the companies are identified, they serve as case studies that the researcher can use in empirical analyses in order to observe the presence or non-presence of the characteristics that were presented in the first research objective.

From an initial selection of nine companies, the following five were chosen:

1. Beige Holdings Limited;
2. Johannesburg Consolidated Investments (JCI) Limited;
3. Macmed Healthcare Limited;
4. Saambou Holdings Limited; and
5. Tigon Limited.

The so-called “case study” companies are supplemented with five companies from the same industry that did not have any allegations of accounting irregularities against them. The results that came from an analysis of the case study companies and its related control samples are discussed in the section related to the next research objective.

### **9.2.3 Quantitative and qualitative analyses of five case study companies**

The third research objective lead to Chapter Seven, in which a complete analysis of the quantitative and qualitative data from the annual reports of the five case study companies is discussed. These analyses are done in order to prove or disprove the relevance of the characteristics that were identified in Chapter Five.

The companies that were used in the analyses were identified through media searches as having been implicated in accounting irregularity scandals. To summarize and

conclude the observations from the analyses of the five individual case studies, the 18 characteristics that were identified as being useful in the detection and identification of accounting irregularities were used. Additionally to proving the usefulness of the initial characteristics, there were also further observations of characteristics that were not previously identified, but which appeared to be significant.

It is important to take into account that it does not necessarily indicate the presence of accounting irregularities if a company displays certain characteristics associated with accounting irregularities. However, if these characteristics can lead to the detection and identification of accounting irregularities, it is worth it to take note of them. The next few paragraphs explain in summarised format the usefulness of the various characteristics as previously identified, as well as the additional characteristics that appeared to be present in alleged cases of accounting irregularities.

**a. The characteristics that proved to be of use as indicators of accounting irregularities**

Through the financial analysis of the five case-study companies, nine of the 18 characteristics proved to be useful as indicators of accounting irregularities. The characteristics are:

1. cash flow for operations;
2. company age;
3. company culture;
4. directors' behaviour and character;
5. financial distress;
6. geographic location;
7. industry;
8. management behaviour and character; and
9. receivables and inventory.



The first characteristic that holds possibilities for the detection and identification of accounting irregularities is the cash flow position of the company. Poor cash flow was identified as a positive indicator of an increased risk for accounting irregularities.

Another characteristic that proved to be of use is the age of a company. Age in this context is the length of time a company has been listed on the Johannesburg Securities Exchange (JSE) South Africa. It was found that problems are more likely to occur in companies that have been listed for a shorter length of time. This may be a result of the fact that a newly listed company may struggle to cope in the competitive environment of listed companies and to comply with the listing requirements.

Company culture, together with the directors' and management's behaviour and character, plays a significant role in the way companies are directed and managed, and what types of people are employed. It appears from the case studies that the majority of companies had a board of directors and/or management team that were largely goal-driven and competitive and that concentrated on performance. It seems likely that when these characteristics are present it may lead to a greater likelihood of accounting irregularities, especially if managers are required to deliver results and performance targets that are difficult to obtain. If the management team is not able to deliver the required performance or reach the stated goals, this may lead to their searching for other, perhaps unethical or even fraudulent, means to artificially improve the company's position and performance. It is not the intention of this observation to claim that it is bad when the characteristics of being goal-driven, competitive and concentrated on performance is part of company culture and present in a board of directors or a management team. However, if these traits are expressed forcefully in the annual report it may be an indicator of increased accounting irregularities risk.

It was found that all of the companies experienced an increased degree of financial distress over the periods in which the irregularities occurred. It was previously recognised that debt levels may in some cases have been deliberately understated to cause the financial statements to appear more favourable. But the financial distress

measure (Altman's Z-score) is a ratio calculated on the basis of various financial statement items and will therefore show financial distress even in a case where a company has artificially manipulated its debt to appear lower. Financial distress therefore appears to be a useful indicator of an increased accounting irregularities risk.

With regard to geographic locations, it was found that all the companies had remote operations, either in South Africa or outside the country's borders. Remote locations may, amongst other factors, have an effect on the extent of control that can be exercised, and is therefore an indicator of an increased accounting irregularities risk.

It is difficult to identify specific industries in which irregularities are most likely to occur. Two of the companies from the case studies operated in the health and pharmaceutical sector, but on the basis of such a small sample there is no significant proof that companies in the health and pharmaceutical sector can be identified as having a greater risk of accounting irregularities. Overall, it was found that irregularities are more likely to occur if the sector in which the company operates experiences difficulties in terms of economic and financial factors. Therefore even though no specific industries can be identified as showing an increased risk of accounting irregularities, if an industry experiences difficulties in general, it does appear to be a positive indicator of increased accounting irregularities risk.

Receivables and inventory showed significant increases and decreases in most of the companies. Even though no distinctive pattern can be identified, it appears that companies with an increased risk of accounting irregularities tend to show significant changes in receivables and inventory. For that reason receivables and inventory have the potential to act as indicators of increased accounting irregularities risk.

**b. The characteristics that proved not to be useful indicators of accounting irregularities**

From the characteristics that were initially identified, the following nine characteristics proved to be of limited use as indicators of an increased risk of accounting irregularities:

1. complexity of accounting transactions;
2. company-auditor relationships;
3. control structure and procedures;
4. debt levels;
5. liquidity;
6. personnel behaviour;
7. remuneration;
8. shareholding; and
9. organisational structure.

Some of the inconclusive results arise from a lack of publicly available information about the specific characteristics. Characteristics that cannot be observed due to limited information include the complexity of transactions, information about organisational structure, personnel behaviour, personnel character and relationships with auditors. As a result of insufficient information about these characteristics, it is not possible to make any sound judgement on their ability to assist users of statements in detecting and identifying accounting irregularities. It was found that the remuneration of directors and managers can only be used effectively if remuneration is based on company performance. However, the companies in the case studies did not report the basis of remuneration policies, rendering this characteristic as also not being useful to indicate the presence of an increased risk of accounting irregularities due to a lack of information.

A further characteristic that proved to be less useful was a company's control structure and procedures. As part of proper corporate governance principles, companies are compelled to have control systems in place and need to report on such control systems

in the annual report. It is, however, difficult to determine from the annual report whether such systems are properly maintained and whether the management of the companies have any opportunity to override the system in order to manipulate the accounting records. Therefore, even though they are part of the annual report, control systems and procedures are not useful indicators of increased accounting irregularities risk.

Debt level was another characteristic that was found to be a less useful indicator of accounting irregularities risk. Contrary to what one may initially suspect, the debt levels of the companies with accounting irregularities problems were on average lower than those of the sector in which they operated. This may indicate the presence of manipulation to depress debt levels, but it is not possible to accurately and reliably assess this characteristic without internal company information.

Most of the case study companies displayed strong liquidity positions at stages when the respective sectors did not have adequate working capital to sustain acceptable liquidity levels. It may be an indication that a company is overstating its assets or understating its liabilities if its liquidity appears more favourable than that of the sector it operates in. However, due to inconclusive results, liquidity is not a reliable means to assess accounting irregularities risk.

From the analysis of the annual reports of the case study companies, it does not appear that there is a link between the shareholding structure of a company and its likelihood to engage in any manipulation of accounting records and accounting irregularities.

**c. Additional characteristics that proved to be of use as indicators of accounting irregularities**

Additional observations have been made in the analyses of the case study companies. These can serve the purpose of additional characteristics that need to be observed when a company is analysed for possible accounting irregularities. The additional observations are:

1. acquisitions, mergers and other changes to a company's size and structure;
2. a tendency to avoid paying out dividends;
3. share price ratios that follow a decreasing trend over the period in which accounting irregularities occurred;
4. only small values are reported for tax charges or tax liabilities compared to figures reported by other companies in the related sector;
5. financial statement line items that show a tendency for changes that were contrary to those of the sector;
6. a leading or lagging effect with regard to significant changes in the financial statements of the company and the sector; and
7. the period in which irregularities occurred before irregularities were detected and identified was in most cases no longer than two years.

In terms of acquisitions, mergers and other changes to a company's size and structure, a drive for growth and expansion may be an indicator of accounting irregularities. Such initiatives give the directors and/or management a motive for manipulating accounting records, because of the significant amount of resources such restructuring requires. Acquisitions, mergers and other major changes are especially useful for indicating the presence of increased accounting irregularities risk and/or possible accounting irregularities occurrences when other companies in the sector do not seek to expand in the same way.

In the analyses of the case studies it was found that companies that are more likely to engage in activities which result in accounting irregularities are less likely to pay out dividends. A lack of dividends may indicate that a company is under pressure and is more likely to resort to inappropriate or fraudulent actions. It can, however, also be a positive indication that the company has projects to invest in and prefers to use retained earnings. This characteristic therefore needs to be considered in conjunction with other issues, for example, the state of the economy and the situation in the sector, in order to determine whether there may be other reasons behind the decision not to pay out dividends.

For each of the case studies, the share price ratios followed a decreasing trend over the period in which accounting irregularities occurred. It was also found that the case study companies only reported small amounts for tax charges or tax liabilities compared to figures reported by other companies in the related sectors.

Many of the financial statement line items of the case study companies showed a tendency for changes that were contrary to those of the sector. This may indicate that the companies manipulated their records to show more favourable results, while other companies in the sector did not take such measures to artificially improve performance. This leads to different trends to what is observed in the sector. It was also found that companies who engaged in fraudulent financial reporting schemes attempted to conceal the fact by giving the readers of the annual report warnings beforehand in the chairman's report and other narrative notes and disclosures. This was done by indicating to readers that items which generally indicate accounting irregularities, for example, working capital, may change significantly in future. There may be legitimate reasons for such anticipated changes, but it is to the benefit of interested parties to be aware of the possibility of misstatements.

Another observation that was made in the comparison with sector figures was that, in some of the case studies, there was a leading or lagging effect with regard to significant changes in the financial statements of the company and the sector. This means that significant changes in the financial statements of the company often occurred in the year before or after significant changes occurred in the sector. The period in which irregularities occurred in the case study companies before the irregularities were detected and identified were also, in most cases, no longer than two years. This characteristic indicates that cases of accounting irregularities are often poorly hidden and may therefore be detected rather easily.

In the section describing statistical analyses of share price data, some of the additional observations are confirmed.

#### **9.2.4 Statistical analyses of share price data**

The fourth research objective is also answered in Chapter Seven. Econometric statistical methods were used to analyse the share price data of the case study companies for significant events that may have had an impact on the share price of the companies. The statistical methods that were used are event studies, regression analyses and structural break analyses. The aim was to identify dates when significant events occurred, in order to compare those dates with the periods that the companies had alleged irregularities in the financial statements.

The event studies indicated that a number of significant events happened in the alleged periods when accounting irregularities occurred. Some of the dates correlate closely with the dates when irregularities were committed by means of the financial statements. For several of the dates with significant events, no news data about the company under review was available, indicating that the event impacting on the share price and volume of trade may have been an occurrence internal to the company. For those dates with published news data, there was a tendency for the news data to relate to events or characteristics that may indicate a higher risk of accounting irregularities, as it was identified in the financial analyses of the case study companies. These events or characteristics refer mostly to acquisitions, mergers and restructurings as well as financial distress.

It is interesting to note that Saambou Ltd., unlike the other companies, had news events on almost all the dates that were identified as significant in the event study. The management and directors of Saambou Ltd. were found to be falsely accused of accounting irregularities, indicating that its behaviour was indeed different to that of a company that perpetrate accounting irregularities. The fact that Saambou Ltd. had legitimate news events on dates identified as significant, while other companies did not, may act as proof that case study companies tend to commit hidden activities that affect its share price.

The regression analysis leads to the identification of certain dates as outliers. On those dates the share returns of the company showed distinctly different behaviour to the returns of the market. The results from the evaluation of these dates resulted in observations similar to those of the event study. A number of the outliers (some with and some without related news events) corresponded with the findings regarding irregularity-indicating characteristics as identified in the analysis of the case study companies.

The structural break analyses did not indicate any distinctive structural breaks in the periods when alleged accounting irregularities took place in the companies. For each company, one date could be identified as being the date on which the most statistically significant change happened over the five-year period. These dates that were identified for each of the companies correlated with the period when accounting irregularities first occurred in the financial statements of the companies.

Even though the dates as identified in the structural break analyses did not relate to any significant dates as identified in the event studies, it was on or close to dates when announcements were made regarding restructurings, financial distress or the publication of the year-end annual report. With these findings being consistent with the findings from the financial analyses of the case study companies, it indicates that the presence of these characteristics is perhaps the most important to observe where accounting irregularities are suspected.

### **9.2.5 Questionnaire survey to users and compilers of financial statements**

The sixth and final research objective was dealt with by means of a questionnaire that was distributed to 500 potential respondents in order to observe the experience of the users and compilers of financial statements regarding the use of financial information to evaluate financial health. 244 responses were obtained and statistically analysed using the BMDP Statistical Software Package<sup>®</sup>.



Descriptive statistics from the responses to 25 statements posed in the questionnaire indicated that the majority of the users and compilers of financial statements feel positive about the use of financial statements in the analysis of a company's financial health. They also indicate that financial statements can be used for more superior purposes such as decision-making and even predictions. Together with this the respondents were positive about the usefulness of ratios in financial analyses.

However, a majority of respondents do admit that the information in financial statements can be manipulated or fabricated and by implication cannot be trusted completely. In addition, a majority of the respondents admit to not paying a lot of attention to the narrative or qualitative sections of an annual report.

The questionnaire confirms the literature and the three constructs that were stated in Chapter Four as follows:

- Financial statements are useful for decision-making and prediction purposes
- Ratio analysis (interactions between financial statement items) can be useful when analysing a company's financial health
- Other information than only financial information from the financial statements needs to be considered when analysing a company's financial health

### 9.2.6 Back to the problem statement

In Chapter One the following problem statement was proposed: ***Certain interested parties of a company have limited access to the necessary resources needed in order to evaluate the financial health of a company. The use of financial analysis and interpretation in conjunction with clear characteristics or indicators from published financial statements can make it possible to investigate and comprehend the financial health of a company.***

This comprehensive study proved that there is merit and potential in the use of financial analysis and interpretation as a foundation to comprehend financial health. The following

section set out recommendations that the author propose to those with an interest in a company's financial health.

### **9.3 RECOMMENDATIONS**

From this study it can be seen that it is possible to detect and identify an increased risk of accounting irregularities in the financial statements of a company. There are a number of characteristics that may act as possible indicators of accounting irregularities risk and/or the presence of accounting irregularities occurrences for companies in South Africa. The analysis of financial statements can therefore be regarded as useful in the detection and identification of accounting irregularities. An attitude of scepticism and close scrutiny of the annual report for the characteristics identified in this study have the potential to reveal more about a company's activities than the management of a company may want the report to do.

All cases of accounting irregularities are different, with each company having a different reason for engaging in the manipulation of accounting records and accounting irregularities and each also finding a different way to perpetrate the irregularities. This implies that the presence and character of the different indicators will be different in each case. It is therefore necessary that an investor or other interested party observe all the characteristics mentioned above and preferably compare it with figures from the relevant industries in a cross sectional analysis as well as over time in a time-series analysis.

Even though comparing a company's financial figures and qualitative disclosures with sector figures may be helpful in detecting and identifying irregularities, this may in some cases not be possible due to a lack of available information and limited time. If a reader of the annual report is, however, concerned about a figure or comment in the annual report, it is recommended that the figure or comment is compared with the annual report of a similar company. An example of the predictive power of this practice is poor performance by a company being explained away as the result of a poor economic

environment. If a company in the same sector does not report similar poor economic conditions, it may be a ruse to explain away poor performance or other hidden problems.

A final word of recommendation is that the parties with a legitimate interest should take note of the additional benefits attached to analysing the annual report with accounting irregularities in mind. It ensures that the reader pays attention to a variety of different quantitative and qualitative items that may be overlooked under normal circumstances. An analysis of the annual report with the goal of detecting and identifying accounting irregularities risk and possible accounting irregularities occurrences provides opportunities to reveal other problems as well, for example, financial distress. When one is observing an annual report with another goal in mind, for example, detecting financial distress, irregularities will not necessarily be detected and/or identified.

#### **9.4 OPPORTUNITIES FOR FURTHER RESEARCH**

The topic of accounting irregularities and their detection is by no means exhausted. Not only does this study provide ample opportunity for further research, but the research from this study be combined with the studies and findings of other researchers. The paragraphs below describe a few studies that the researcher found while busy with the literature review. These are all ideas and concepts that can be tested in a South African environment and in conjunction with the study conducted here.

Sharma and Panigrahi (2012:41) suggest that using financial statement data alone may not be enough to detect accounting irregularities. They identify the importance of data mining techniques. A comprehensive classification framework or a systematic review of data mining application in financial accounting irregularity detection can be created.

Huang, Tsaih and Lin (2012:241) claim that the use of neural network tools looks promising to identify irregularities. In contrast with “normal” accounting irregularities studies focusing on the prediction of accounting irregularities, neural networks involve a

better understanding of corporate behaviour. The study has shown that the proposed approach is helpful in obtaining knowledge that can better assist in interpreting the behaviour that leads to accounting irregularities. Such understanding helps creditors evaluate the integrity of financial statements to facilitate their investment or credit decision-making.

Even though accounting is regarded as part of the social sciences, the use of the natural sciences cannot be excluded. This can be observed by the use of statistical analysis as was performed in this study. Another example is Haynes (2012:40) who found that it is possible to detect accounting misstatements by means of Benford's Law. Benford's Law states that the distribution of first digits from real world observations will not be uniform, but will follow a trend where numbers with lower first digits (1, 2...) occur more frequently than those with higher first digits (...8,9). Data from the financial records of organisations with known misstatements was analysed and the data did not conform to Benford's Law. Therefore, the use of Benford's Law can act as an early warning sign of possible misstatement and needs to be researched in depth.

The detection and identification of accounting irregularities relies on useful information that has the potential to reveal things about a company. O'Leary (2012:11) recommends the use of social media to find out more about what a company does. Because social media is an informal platform of communication, it is very likely that inside information can leak out. Therefore, it may be of use to also analyse information from social media sources when similar studies are performed in future.

## **9.5 CONCLUDING COMMENTS**

Accounting irregularities risk and accounting irregularities occurrences are not easy to detect and identify. The perpetrators of irregularities do their best to hide them from interested parties and authorities. However, the occurrence of irregularities is a possibility that parties with a legitimate interest in a company needs to be aware of. Individuals who read company annual reports have to consider the possibility that

accounting irregularities are present in the financial statements and that he or she therefore ought to read the annual report with a degree of scepticism.

This study has revealed that some quantitative and qualitative items from the annual report may be useful as indicators to detect and identify accounting irregularities at an early stage. By means of financial analyses and interpretation thereof, it is thus possible to comprehend the financial health of an organisation.

The reader has to bear in mind that the indicators identified in this study are not necessarily a sure sign of the presence of irregularities. However, the simultaneous occurrence of a number of characteristics may indeed indicate the possibility of irregularities and merit further investigation. Considering the possibility of accounting irregularities at all times may ensure that such cases are revealed sooner rather than later.