

CHAPTER 9

THE METHODOLOGY USED TO ESTABLISH THE AUTHENTIC ESSENCE OF THE FINANCIAL LITERACY CONSTRUCT

Research is an activity that we all undertake to learn more about our environment and the impact we have upon it. Research is labelled in many different ways: “academic”, “scientific”, “fundamental” and “applied”, to give just four examples. However, none of these labels changes the most important aspect of research itself – namely, that research is about discovery.

(Ryan et al 2002:1)

9.1 INTRODUCTION

The main objective of the empirical research was to gain a first-hand, holistic understanding of the financial literacy phenomenon and its relationship with financial information and decision making. The research also endeavoured to illustrate that the financial literacy concept acquires meaning, or even new meaning, within a conceptual framework such as the interface model depicted in chapter 8. Mouton and Marais (1990:60) concur that “the aim in empirical research is to operationalise such constructs in a meaningful manner by making them either measurable or observable”. In order to observe, the researcher obtained more information about the specific phenomenon by conducting personal interviews and using questionnaires.

The aim of this chapter is to introduce the empirical research methodology used to establish the authentic essence of the financial literacy construct and to improve the financial literacy interface model as presented in chapter 8. For the purpose of this study, methodology refers to “the coherent group of methods that complement one another and that have the ‘goodness of fit’ to deliver data and findings that will reflect the research question and suit the research purpose” (Henning 2004:36). The methods used to suit this specific research purpose will subsequently be discussed.

The chapter first highlights the research methods used and gives an overview of the development of the research instruments. Even though the preceding literature review (chs 1 - 7) and the construction of the model (ch 8) adopted a multidisciplinary approach to understand the present stance of the financial literacy concept, the identification of individual decision makers' perception of the financial literacy construct and the usefulness of financial information for decision-making purposes needed further clarification. The purpose of the literature review was to find out what has been done in the field of financial literacy, and the use of information for decision making in organisations was thus described. The chapter explains that interviews and questionnaires were used as data collection methods. It also emphasises that the finalisation of the questionnaire was dependent on the feedback received from the interviews.

9.2 THE RESEARCH METHODS USED

In this study, use was made of a literature review and survey research. A literature review was mostly conducted in chapters 2 to 7. To implement the survey research, interviews were used to adapt and attune the questionnaire. Interviews deemed necessary because the literature review did not show substantive evidence of research into financial literacy in organisations. The researcher therefore needed to establish financial role players' perception of the financial literacy construct before the questionnaire could be finalised. The questionnaire, in turn, was designed to investigate the respondents' perception of the content and structure of the financial literacy concept, the financial literacy proficiencies needed by decision makers in organisations and the attributes of financial information for decision making.

A predominantly qualitative research approach was followed. De Vos et al (2005:269) contend that "in quantitative research the design determines the researcher's choices and actions, while in qualitative research the researcher's choices and actions will determine the design or strategy". During the course of

the study, interviews as a data collection method were only considered once the questionnaire had been designed. As explained, the interviews were deemed necessary when statements in the questionnaire had to be formulated especially pertaining to the financial literacy concept.

9.2.1 Literature review

A literature study was conducted to review the available body of knowledge on financial literacy and financial information with regard to decision making in organisations. An *interdisciplinary* approach which spanned several disciplines, including Financial and Management Accounting, Education, Management Information Systems and Business Management was adopted. According to Koornhof (1998:21): “An interdisciplinary research approach complements Systems Theory as Systems Theory adopts a holistic view of science.” A systems theory was used to conduct the interdisciplinary literature review on the financial information system and the human behaviour system. The literature review or “scholarship review”, as referred to by Mouton (2001:87), not only saves time in the sense that it helps to avoid duplication of previous studies, but it also “provides clues and suggestions about what paths to follow”. From the literature review, subject ideas, issues and problems were identified and general conclusions drawn about the financial literacy phenomenon.

Although the sample of references was taken from relevant books, periodical articles, theses, dissertations and technical reports, it was not exhaustive for the topic of research. Apart from researching the most recent and authoritative theorising on the subject, the literature review was also used to find out what the accepted empirical findings in the field of study are (Mouton 2001:87). Ryan et al (2002:181) consider the critical analysis of the literature as one area that distinctively links methodology to method. A critical evaluation of the literature was therefore not only necessary to demarcate and evaluate the existing body of knowledge, but also to initiate the empirical research.

9.2.2 Interviewing as orientation

As opposed to consumers' financial literacy, little has been published on the financial literacy needs and proficiencies of decision makers using financial information in organisations, especially in a South African context. Because this study adopts an organisational rather than a consumer approach to the financial literacy construct, the development of a questionnaire as the basis for an empirical research was challenging. It was therefore decided to use qualitative interviews with leading role players in organisations to gain insight into their perceptions of the financial literacy construct and decision making in situations of uncertainty, in order to develop the proposed questionnaire.

Qualitative interviews are frequently used as an information collection method, especially if one is trying to introduce a fairly new topic to a population. Kvale (in Sewell 2001:1) defines qualitative interviews as "attempts to understand the world from the participant's point of view, to unfold the meaning of people's experiences, [and] to uncover their lived world prior to scientific explanations". Qualitative interviews can either be *unstructured* or *semi-structured*. De Vos et al (2005:292 & 296) explain that while unstructured interviews are conducted without utilising any of the researcher's prior information, experience or opinions in a particular area, the semistructured interview is organised around areas of particular interest in order to gain a detailed picture of a participant's beliefs about or perceptions of a particular topic. According to Terre Blanche and Durrheim (1999:281-282), some of the advantages of using semistructured interviews are that in-depth information can be derived and that interviewees can ask for clarification of the questions if needed. For the purposes of this study, the semistructured one-to-one interview was used to gain a fuller picture of the financial literacy dilemma in organisations as perceived by the interviewees.

Both the unstructured and semistructured interviews can also be regarded as *open-ended* or *guided interviews*. The open-ended interview explores new territory with the participant, whereas the guided interview is used when the

information required is about a certain topic, the structure of the topic is known and the answer cannot be anticipated (De Vos et al 2005:292). The guided interview approach, in which different interviewees are asked the same questions, were mainly used in this case to obtain complete and comparable data. The questions, however, were open ended in order to allow the interviewees the freedom to express their perception of the financial literacy topic.

9.2.3 Questionnaires

Questionnaires are commonly used to gather information from people. A questionnaire can be defined as a group of written questions or statements used to gather information from respondents, usually consisting of a number of measurement scales (Terre Blanche & Durrheim 1999:293). De Vos et al (2005:166) regard the basic objective of a questionnaire “to obtain facts and opinions about a phenomenon from people who are informed on the particular issue”. Consequently, a questionnaire consisting of various statements was developed and used to gather information on the financial literacy construct from decision makers in different organisations. The literature review, the responses of the interviewees and the experience of the researcher in the financial decision-making field were used as the basis to develop the individual statements used in the questionnaire. The development and implementation of the questionnaire will be discussed in more detail in the next section.

9.3 IMPLEMENTING THE EMPIRICAL RESEARCH METHODS

9.3.1 Conducting the interviews

The interviewees were selected from various organisations, representing financial institutions, providers of financial information, users of financial information, educators and trainers. A procedure known as *purposive sampling* was used to select the interviewees. Purposive sampling simply looks for people who can help build the substantive theory further, people who,

according to the researcher's knowledge of the subject, fit the criteria of *desirable participants* (Henning 2004:71). Table 9.1 lists the individuals who were interviewed and some of the organisations in which they are involved.

The selected interviewees (see tab 9.1) were asked if they are willing to participate in the interview. After permission was granted, a letter or e-mail explaining the purpose of the interview and confirming the date, time and venue was sent to them. The letter is included in appendix A. This letter also ensured the participants of the confidentiality of the process and adherence to ethical principles of research. Although a set of predetermined questions was used during the interview (see appendix B), the interviewees were not provided with the questions beforehand. This was done to prevent pre-empted responses.

Table 9.1: List of interviewees

Interviewee	Organisation (inter alia)	Position in organisation
Mr Mike Abel	Insurance SETA (INSETA)	Chief Executive Officer
Mr Ewald Mulder	South African Institute of Chartered Accountants (SAICA)	Senior Executive Standards
Prof Pierre Joubert	University of South Africa (UNISA) JSE Investment Education Project	Professor in Industrial and Organisational Psychology Project manager
General Roy Andersen	SA National Defence Reserves Murray & Roberts Sanlam	Chief Chairman of the Board Chairman of the Board
Dr Johan van Zyl	Toyota SA	President
General Keith Mokoape	Army Foundation Nampac iFour Properties Limited	Chief Board member Board member
Prof Albert Weideman	University of Pretoria (UP)	Head of the Department for Academic Literacy
Ms Maureen Dlamini	Johannesburg Stock Exchange (JSE)	Senior General Manager: Education
Ms Albertina Kekana	Public Investment Corporation (PIC)	Chief Operating Officer (COO)

The interviews were recorded and transcripts of them then analysed and interpreted. The following is a summary of the responses that were incorporated into the final questionnaire:

- (1) Interviewees' understanding of the "financial literacy" concept
Financial literacy means being aware of the movement of money, the impact of money and an understanding of the consequences of its movement. It involves having an idea of what the economic mode of one's existence is, knowing about concepts such as trading, the costs associated with goods and services and market activities.

- (2) Do individuals at all levels in an organisation need to be financially literate?
The higher one's position in the hierarchy, the more financially literate one needs to be. People throughout the organisation are obliged to know what the role of finance is. It is imperative for financial decision making that everyone should know what kinds of decisions are ethical, moral and justifiable. Individuals should be in a position to question experts' financial decisions. Even the cleaner in the organisation needs to be financially literate.

- (3) Do cultural differences influence financial perceptions?
Although some interviewees were of the opinion that cultural differences influence financial perceptions, some stated that such differences have no influence, but that individuals of all cultures are in fact influenced by the environment in which they grow up and live. However, one interviewee stated that some cultures find the competitive capitalist notion difficult to deal with.

- (4) Is financial information in organisations relatively easy to understand?
Financial information in organisations is only user-friendly to those who have been exposed to financial training and education. Financial information is extremely complex; even senior people do not always understand it.

- (5) Does financial information provided in annual financial statements promote better future decision making?

Although financial statements may contribute to better decision making, they are becoming increasingly complex. Financial information should be more forward-looking and user-friendly. A layperson's guide to financial statements would contribute to better decision making.

- (6) Are employers responsible for their employees' financial training?

The majority of interviewees felt that the organisation has a responsibility in respect of its employees' financial training. It is in the organisation's interest to train and educate its employees in financial matters. However, employees also have a responsibility to become financially literate.

- (7) General ideas on financial literacy

There are not enough financial courses tailored to the needs of different levels of decision makers. While some interviewees indicated that it was a good idea to test all aspirant employees' financial literacy status, one in particular stated that this should only be done if the position specifically requires it. The nation desperately requires numerical skills and should become financially literate.

9.3.2 Development of the questionnaire

The questionnaire was designed to assess the perceptions on financial literacy of individuals participating in different economic activities and decision-making categories. A covering letter of which an example is included in appendix C explaining the purpose of the survey and the confidentiality of the response, accompanied the questionnaire. In order to obtain background information, the respondents were asked to indicate whether they participated in the primary, secondary or tertiary sector of the economy, or in the government sector, a parastatal organisation or academic institution. They were further required to indicate if they participated on the executive, senior management, middle

management, junior management or ordinary employee level of decision making.

The questionnaire (see appendix C) was divided into three main sections. These sections were identified as the central issues applicable to the subject of this study. Statements on the *financial literacy concept* were presented in section A. Section B comprised statements relating to *financial literacy for decision making in an organisation* and section C consisted of statements on the *attributes of financial information for decision making*. The letter of consent attached to each questionnaire ensured that the respondents understood the purpose of the questionnaire and also afforded them an opportunity to declare their willingness to participate in the research.

The statements in sections A, B and C were evaluated on a five-point agreement Lickert scale rating. The scale rating was indicated as follow:

- S/D Strongly disagree
- D Disagree
- U Unsure
- A Agree
- S/A Strongly agree

The respondents were asked to indicate to what extent they agreed/disagreed with each statement.

9.3.3 Pretesting

Before the questionnaire was distributed, a pilot test was conducted. Ten questionnaires were distributed to some of the previously mentioned interviewees, academics and other educators. Cooper and Emory (1995:66) contend that a pilot test is “conducted to detect weaknesses in design and instrumentation and provide proxy data for selection of a probability sample”. The participants were asked to pay special attention to the following:

- (1) the comprehensibility of the statements
- (2) the time it took to complete the questionnaire
- (3) whether they experienced any problems answering specific questions

Feedback from the participants in the pilot study was incorporated into the final questionnaire.

9.4 SAMPLE CHOICE AND RESPONSE RATE

The sample chosen for the empirical survey comprised members of organisations in the following economic categories based on those used in certain research studies conducted by Statistics South Africa and adapted to suit the purpose of this study:

- primary sector (eg agriculture, forestry and fishing; mining and quarrying)
- secondary sector (eg manufacturing; electricity, gas and water; construction)
- tertiary sector (eg wholesale and retail trade, catering and accommodation; transport, storage and communication; financial intermediation, insurance, real-estate and business services; community, social and personal services)
- government sector
- parastatals (Eskom and Transnet)
- academic sector (primary, secondary and tertiary)

Since the total population of decision makers in organisations could not be determined, use was made of nonprobabilistic convenience sampling. According to Cooper and Emory (1995:200): “The basic idea of sampling is that by selecting part of the elements in a population, conclusions may be obtained about the entire population.” As suggested by the statistician

consulted for this thesis, at least two organisations per economic activity category were chosen. The organisations were conveniently selected to enable the researcher to identify a specific contact person to ensure the distribution and completion of the questionnaires in order to increase the response rate. Some questionnaires were sent by e-mail, but for the most part, hard copy questionnaires were distributed to the participants.

Table 9.2 provides a summary of the response rate of the hard copy questionnaires distributed. The names of the chosen organisations that participated per sector were not listed because the respondents participated in their personal capacity and not as official representatives of these organisations.

Table 9.2: Summary of respondents of the hard copy questionnaires distributed

ORGANISATIONS	DISTRIBUTED	RESPONDENTS	RESPONSE RATE
Primary sector	55	42	76,36%
Secondary sector	25	17	68,00%
Tertiary sector	50	35	70,00%
Government sector	20	18	90,00%
Parastatals	50	38	76,00%
Academic	50	42	84,00%
TOTAL	250	192	76,80%

The response rate was so high because dedicated contact persons at the different organisations accepted responsibility for the distribution and collection of the questionnaires. A smaller number of hard copy questionnaires were distributed to the secondary and government sector because more e-mail copies were sent to these organisations. It is difficult to give a response rate on the e-mail copies sent, because they were distributed by a key individual in the

organisation. In total, 24 e-mail responses were received, from the following sectors:

- primary sector: 1
- secondary sector: 9
- tertiary sector: 6
- government: 5
- parastatals: 1
- academic: 2

From the above it is clear that questionnaires were mainly distributed on hard copy and only a few via e-mail. In total, 216 questionnaires were received and captured. The survey results are discussed in chapter 10.

9.5 DATA PREPARATION

Data preparation involved scrutinising each questionnaire in order to determine if all the statements were appropriately completed. Two questionnaires were discarded as unusable, because all the statements were not completed or the respondents chose the unsure rating for all statements.

To facilitate the data-capturing process, all the responses in the questionnaires were coded. The captured data were compared back to the original questionnaires to double check that the correct values for each variable had been captured. Terre Blanche and Durrheim (1999:10 & 522) contend that the data must be “clean” before any statistical calculations can be done. The few errors that were encountered were rectified. The data capturing and processing were done by the Department of Statistics at the University of Pretoria.

9.6 STATISTICAL PRESENTATION OF THE DATA

Descriptive and inferential analysis can be used to analyse the data statistically. Descriptive analysis “aims to describe the data by investigating the distribution of scores on each variable, and by determining whether the scores on different variables are related to each other”, while inferential analysis “allows the researcher to draw conclusions about populations from sample data” (Terre Blanche & Durrheim 1999:101). Both descriptive and inferential analysis was done to determine the relationships between the different economic sectors, as well as the level of decision making and the way the statements in the questionnaire were scored.

The SAS (version 8.2) program and the Statistical Program for the Social Sciences (SPSS, version 15) were used to do the statistical analysis of the data. Means and medians were calculated for each statement in the three sections in the questionnaire. Descriptive statistics frequency percentages were calculated to summarise the response to each statement. Cluster analysis was done to group respondents and statements with similar response patterns into two or three groups. Factor analysis was applied to group statements to analyse the intercorrelations between these individual statements. Hierarchical clustering diagrams (dendograms) were also designed. The reason for doing dendograms is “to detect patterns of relationship between variables” (Terre Blanche & Durrheim 1999:362). In order to compare the mean response of a factor for more than two groups of respondents the analysis of variance (ANOVA) method was applied. ANOVA was specifically used to test for the differences in the response of the various sociodemographic respondent groups.

The *chi-square statistics* technique was also used to test for differences in the response of different sociodemographic respondents groups. It was specifically used to test for independence of association and to test hypotheses on *patterns of outcomes* of random variable in the population. The purpose of this

test is to establish whether a random variable follows certain patterns of outcomes in the population (Wegner 1993:248). When testing for independence of association, the chi-square test tries to establish whether or not two categorical random variables are independent.

The results of the statistical analysis of the data obtained in the empirical survey will be discussed in chapter 10.

9.7 RESTRICTIONS ENCOUNTERED IN CONDUCTING THE SURVEY

In concluding the discussion of the research methodology used to determine decision makers' perceptions of, (1) the financial literacy concept, (2) financial literacy for decision making in an organisation and (3) the attributes of financial information for decision making, it should be noted that the research results are subjected to certain restrictions.

Firstly, the target groups used in the research were not determined by means of random sampling, but were selected by means of convenience sampling. Although, strictly speaking, the results of the study cannot be generalised to the entire decision-making population, the participating decision makers represented such a broad spectrum of economic activities, that one could infer that the results generally represents decision makers in organisations.

Secondly, the questionnaire did not test the respondents' level of financial education. The reason for this was the sensitivity and ethical issues pertaining to the financial literacy levels of decision makers in organisations. Presumably more inferences would have been made if the respondents' financial background had been tested.

9.6 SUMMARY

This chapter described the various research methods used to investigate decision makers' perceptions of the financial literacy concept, the need for financial literacy for decision making in an organisation and the necessary attributes of financial information for decision making. The research was conducted to endorse and increase knowledge of the subject and to provide justification for the development of a financial literacy interface model.

The perceptions of the target groups from the different sectors of the economy were tested by means of questionnaires. Since the questionnaires were vital to the success of the research, interviews were conducted beforehand in order to improve the design of the statements used in the final questionnaire. The layout of the questionnaire, the covering letter and the consent form which accompanied the questionnaire were also explained. Reference was also made to the limitations imposed on the research process.

This chapter further dealt with the response rate and the preparation and analysis of the collected data by means of the SAS and SPSS software programs. The statistics used in the analysis and interpretation of the data were also described.

The presentation and analysis of the research findings provided by the above methodology are discussed in the next chapter.

CHAPTER 10

PRESENTATION AND ANALYSIS OF THE RESEARCH FINDINGS

Data analysis is also the process of bringing order, structure and meaning to the mass of collected data. It is a messy, ambiguous, time-consuming, creative and fascinating process.

(De Vos et al 2005:333)

10.1 INTRODUCTION

In chapter 9, the methodology used to determine the respondents' perception of the financial literacy concept, financial literacy for decision making and the attributes of financial information for decision making, was explained. Ultimately, empirical research culminates in the analysis and interpretation of the survey data. "The aim of analysis is to understand the various constitutive elements of one's data through an inspection of the relationships between concepts, constructs or variables, and to see whether there are any patterns or trends that can be identified or isolated, or to establish themes in the data" (Mouton 2001:108). The aim of the empirical survey was to establish decision makers' perception of the financial literacy concept and trends or themes relating to the attributes of financial information and the need for financial literacy in organisations. The results of the questionnaire therefore need to be analysed and then interpreted to draw appropriate conclusions.

This chapter deals with the collation, analysis and presentation of the data emanating from the empirical survey. Henning (2004:80) describes the tools used in the analysis phase as "tools of interpretation and condensation and specifically as a process of synthesising". The accumulated data are therefore reduced to a manageable size and significant findings emanating from the research are reflected upon and discussed in detail.

Chapter 10 commences with the research findings relating to the sociodemographic information, information on the financial literacy concept, on decision making in organisations and on the attributes of financial information for decision making. The results of the descriptive and inferential statistics used are then discussed with specific reference to the results of factor analysis and clustering as well as chi-square statistics.

10.2 THE RESEARCH FINDINGS

The number of responses and the response rate were outlined in table 9.2 and the rationale for the sample choice also explained in the preceding chapter. The sociodemographic information will be summarised to portray the economic activity in which the respondents participate as well as the decision-making category into which they fall. Interesting findings of the three sections in the questionnaire (see appendix C) will also be discussed. Appendix D contains the results of the descriptive statistics.

10.2.1 Sociodemographic information

The first statement required respondents to indicate the economic activity in which they participate. Of the 216 respondents, 43 were employed in the primary sector, 26 in the secondary sector, 41 in the tertiary sector, 23 in the government sector, 39 in parastatals and 44 in the academic sector. Hence a satisfactory distribution of the different sectors of the economy was achieved. Although the aim of the statement was only to ensure that all the sectors of the formal economy were represented, a few interesting correlations were made, these will be discussed in section 10.3.

Secondly, respondents had to indicate in which decision-making category they reside in the organisation. Executives constituted only 9,72% of the total number of respondents. The distribution of the other decision-making levels was as follow: 26,39% represented senior management; 24,54% middle

management; 13,43% junior management; and 25,93% employees who were not part of management.

10.2.2 Information on the financial literacy concept

Section A of the questionnaire contained statements testing the respondents' perception of the financial literacy concept. According to the hierarchical clustering diagram (dendrogram), using average linkage between statements in section A that were the nearest to each other, statements 3, 6, 7 and 14 could be grouped together, and to a lesser extent, statements 9, 11 and 15.

In statement 3, a significant number of respondents (96,76%) agreed or strongly agreed that *financial literacy entails more than the mere understanding of the terms "financial" and "literacy"*. This response confirms the supposition that because the individual terms encompass many different meanings, the meaning of the combined term *financial literacy* is complex and not easily demarcated. Stuart (2004:16) highlights the complexity of the financial literacy construct in stating that "even the best director education cannot clarify the murky definition of *financial literacy* or define the level of expertise that regulators expect". An overwhelming percentage (97,69%) of the respondents agreed or strongly agreed in statement 6 that there are different levels of financial literacy for different purposes. In this regard, Berman and Knight (2006:229) also point out that although one cannot expect everyone to become a Wall Street analyst or even an accountant, the fact remains that employees need to at least understand the operating numbers of the department they work in. A high percentage (93,98%) of the respondents also indicated in statement 7 that they agree that *the financial literacy concept requires an awareness of the available information in a decision-making situation*. While it is necessary for decision makers to be aware of the available information, Goldberg (2001:155) argues that any collection of information about any given set of circumstances is incomplete in some respects and that these limitations should be admitted. Financially literate individuals should therefore also be aware of the fact that the information that is available may to

some extent be incomplete. Of those who responded to statement 14, 92,13% agreed or strongly agreed that *financial literacy is an important step on the road to sustainability*. Although growth in the organisation and the economy is attributed to many factors that go beyond financial literacy, Widdowson and Hailwood (2007:41) contend that “financial literacy does make a longer-term contribution to the growth and robustness of the economy”. Arguably, if this is applicable to the wider economy, financial literacy will also contribute to an organisation’s long-term growth and sustainability.

Regarding statement 9 in the second cluster, 84,72% of the respondents agreed that *financial literacy involves the contemplation of future scenarios*. Simon (1996:147) contends that sound predictions require a theoretical understanding of the phenomena to be predicted and having reliable information about the initial conditions. Contemplating future scenarios or making financial predictions involves an understanding of the financial information set. Thus the contemplation of future scenarios will be almost impossible if the decision maker lacks the financial literacy to understand the financial information. Statement 11, *financial literacy requires a scale of measurement to compare options*, had a 84,25% response of agree or strongly agree. From this high positive response one could assume that financially literate decision makers should be able to compare or weigh-up different scenarios by using the same measurement scale. The response to the third statement in this cluster, statement 15, indicated that 84,26% agreed that *financial literacy lays the foundation for decision making under uncertainty*. While the future is always uncertain, it will at least help if the decision maker understands the information upon which decisions for future actions are based.

Notwithstanding the somewhat high percentage (18,06%) of unsure participants in statement 10, a significant 75,92% still agreed that *financial literacy mitigates against the risks involved in decision making*. According to Bernstein (1998:113), individuals can test their own degree of risk aversion by determining their “certainty equivalent”. Thus, the more financially literate

decision makers are, the higher their “certainty equivalent” will be. One can therefore deduce that financially literate decision makers are better equipped to make a trade-off between risk and return. From the response to statement 4 (78,71%) and statement 5 (59,19%), it can be inferred that the participants perceive financial literacy to be dependent on the understanding of the use of numbers and not as much a language proficiency issue. However, Claxton (1999:120) explicitly states that “learning power comprises both literacy and numeracy, and is ultimately more fundamental than either of them”. Financial information currently encompasses a great deal of narrative information. Hence decision makers have to understand the whole financial picture expressed in both language and numbers.

In statement 12, 68,05% of the respondents agreed that *financial literacy is a process to be followed rather than an achieved educational level*. Becoming financially literate is a lifelong process. Because economic circumstances continuously change, decision makers’ financial knowledge and skills have to adapt to these changes. Although 16,67% of the respondents were unsure, 69,90% still agreed with statement 13 that *the outcome of financial literacy is the optimal allocation of resources*. In this regard, Widdowson and Hailwood (2007:41) concur that “financial literacy can influence the allocation of resources in the economy”. Financially literate decision makers are likely to choose more wisely when they allocate the organisation’s resources. From the results, it would seem that statement 8, *financial literacy is about perceiving value*, was not clear, because 20,37% of the respondents were unsure, while only 60,19 agreed. The fact that so many of the respondents were *unsure* could be because the term “value” has several connotations. Harrison and Sullivan (2006:195) observe that “value is in the eye of the beholder”. Moreover, value can be interpreted differently, depending on the decision maker’s disposition at a specific time and place.

10.2.3 Information on financial literacy for decision making in an organisation

In section B of the questionnaire, participants had to indicate their perception of the current status or need for financial literacy for decision making in organisations. The hierarchical cluster analysis conducted on section B indicated that statements 16, 17, 18 and 21 could be grouped together, as well as statements 22 and 24. Another group pertaining to the financial literacy training and competence of employees consisted of statements 23 and 28.

Of the 216 respondents, 211 agreed with statement 16 that *decision makers at executive level should know that they are both individually and collectively responsible for the organisation's financial activities*. This high percentage of agreement is in line with the statement in the King Report (2002:22) that the “board is ultimately accountable and responsible for the performance and affairs of the company”. This means that decision makers at executive level cannot mitigate their responsibilities on the basis of a lack of financial knowledge. In statement 17, 96,76% of the participants agreed that *decision makers at all levels should understand the financial and accounting terminology generally used in the organisation*. A significant percentage of respondents (94,90%) to statement 18 were of the opinion that it would be to the overall benefit of the organisation if decision makers at all levels were financially literate. Zulauf (2003) confirms that “... entrepreneurs and governmental organisations alike recognise that financial literacy contributes greatly to financial success”. Organisations will thus benefit from the combined financial literacy of role players on every level of the organisation. In statement 21, a fairly high percentage (89,36%) also agreed that *senior managers have to understand the meaning of financial ratios in order to evaluate their organisations' performance*. Although it is necessary for managers to understand the meaning of financial ratios, Brooks (2007) mentions “the extremely important need for nonfinancial managers to know about and recognise the limitations of ratio analysis”. In other words, ratio analysis and

the views based on the results of these analyses should not be blindly accepted by those who are less financially literate.

Statements 22 and 24, which are more general, elicited more or less the same kind of response. In statement 22, 87,50% of the participants agreed that organisations with a financially literate workforce generally have a competitive advantage over those who do not. In accordance with this response Ditillo (2004:401) concurs that "... knowledge and the capability to create and utilise such knowledge are the most important source of competitive advantage". A considerable percentage of respondents (88.43%) in statement 24 also agreed that *knowledge of good corporate governance is an essential ingredient of becoming a financially literate decision maker*. Pointer and Stillman (2004:24) regard information as the critical ingredient of truly great governance. Hence knowledge of good corporate governance implies that decision makers at least know where to find information and how to interpret it. The capacity to understand information and use it for decision making is also a critical ingredient of becoming financially literate.

Regarding the financial literacy training and competence of employees, 73,15% of the respondents agreed with statement 23 that *financial literacy courses need to be industry specific or fit for purpose*. In line with this response, Berman (2001) clearly states that financial literacy training should be customised because every organisation's financials are different and every organisation has different key areas. With regard to training, 64,81% of the respondents concurred with statement 28 that *employers generally have an obligation to provide financial training to their employees*. Nonaka (1991:97) puts knowledge creation at the very centre of an organisation's human resource strategy. Even if an organisation does not have an obligation to provide financial training, it should at least form part of the organisation's human resource strategy. However, in statement 25, 75,00% of the respondents agreed that employees in an organisation do need financial training to understand the basics of how business success is measured.

From statement 19, it is interesting to note that 78,24% of the participants agreed that *white-collar crime will generally be better addressed if more people are financially literate enough to ask the right questions*. With regard to white-collar crimes or corporate scandals, Wright (2002) states that the “Enron debacle has increased the need for financial literacy of oversight officers”. He also holds that executive decision makers should be aware of red flags that could indicate that organisations are in financial difficulty. Of the respondents, 76,85% agreed with statement 27 that *managers seldom admit that they do not know how to read their organisation’s financial statements*. This corroborates Berman’s (2001) concern that 60% of employees cannot read an income statement. Hence 75,46% agreed with statement 29 that there is a general shortage of financially literate people in decision-making positions.

Statement 26 clearly indicated that the respondents were not totally comfortable that employers should evaluate prospective employees’ financial literacy levels before appointing or promoting them. Although 55,09% agreed that this is necessary, 26,86% disagreed, while 18,06% were unsure. This is a contentious issue - the response indicates that individuals may feel threatened by such an evaluation. From the response it can be assumed that respondents either did not understand statement 20, *decision makers perceive financial literacy as “knowing about money”*, or they were simply unsure (22,69%) about how they should have responded to the question. Although 54,17% agreed that decision makers perceive financial literacy as knowing about money, Lanfranconi and Robertson (2002:3) contend that “the first step in financial reporting literacy is to understand the underlying economics of the business”. Even though these authors refer to “financial reporting literacy”, financial literacy as such encompasses more than only “knowing about money” - it also requires a basic knowledge of the organisation’s business as a whole.

10.2.4 Information on the attributes of financial information for decision making

Section C comprises statements on the attributes of financial information for decision making. According to section C's dendrogram, statements 42, 43, 37 and 32 were linked together, as were statements 30, 31, 38 and 40.

In the first cluster, statement 42 - *there is a need for a layperson's guide to the annual financial statements, to explain the important issues in the statements* - attained the highest percentage of agreement (87,96%). This high percentage of agreement confirms the view of one of the interviewees who suggested that there is a need for a layperson's guide to explain the financial issues in financial statements. Of the respondents, 81,48% also agreed with statement 43 that *information overload increases uncertainty*. This response is in line with Romney and Steinbart's (2009:27) view that "there are limits to the amount of information the human mind can effectively absorb and process". In statement 37, 74,07% of the participants agreed that *different terms are sometimes used in financial information to indicate the same thing*, while in statement 32, 77,77% agreed that *annual financial statements have a limited target market*. In support of the stakeholder approach, it is essential that financial information should be communicated to all the individuals or groups who can affect or are affected by the organisation's activities and not only to a targeted market, such as the shareholders. In agreement, Preble (2005:411) refers to a Harvard study that found that companies that put only their shareholders first did less well for them than companies that balanced the interests of all their stakeholders.

While 45,37% of the respondents to statement 30 agreed that *annual financial statements provide executives with enough information to make future-oriented financial decision*, 46,76% disagreed. From a survey conducted by Deloitte Touche Tohmatsu (2007:3), 54% of respondents said that forward-looking information is of greater value to management and the board than historical information. Hence, notwithstanding the importance of future-oriented

information, many of the respondents in this study feel that executives are not provided with enough information to make future-oriented financial decisions. In the same sense, 45,37% of the respondents to statement 38 disagreed that *it is easy to make performance predictions on the basis of information contained in financial statements*. The problem, according to Hague, Jones, Milburn and Walsh (2006:267), is that “Forecasting an entity’s future financial performance requires a sound understanding and analysis of what is happening now, and a prediction of future change”. Only 57,87% of the participants agreed with statement 31 that *financial information is presented in such a way that it highlights the important issues*. This response confirms the fact that stakeholders, specifically investors, are asking for more reliable guidance on a company’s future performance (KPMG 2008:39).

Uncertainty was evident in the response to statement 40 – *financial information prepared by financial departments is always reliable and trustworthy*, while only 31,02% agreed, 49,07% disagreed and 19,91% were unsure. However, a survey by Gouws and Van der Poll (2004:111) showed that 80% of the respondents agreed that “book entries precipitated as journal entries may be used to manipulate financial information”. The way Enron, for example, manipulated its financial statements is a good example that financial information is not always as trustworthy or reliable as it seems. While the setting of Accounting Standards is supposed to enhance the reliability and trustworthiness of the financial information presented in accordance with these Standards, Clarke (2006:130) however, is concerned that when the Standards change, as they have recently done with the introduction of IFRSs, what was previously true and fair no longer satisfies the criterion.

More respondents to statement 35 disagreed or were unsure (52,31%) than agreed (47,69%) that *the financial section of the newspapers is easy to read and understand*. This response confirms Tieman’s (2001:24) opinion that business leaders are not ready to admit their ignorance of even the most basic financial concepts, while more still are loath to admit their poor grasp of the

financial jargon of the world's newspapers. On the same level, 48,15% of the respondents to statement 36, agreed that it is difficult to understand capital market information as presented in the media, while 17,13% of the respondents were unsure. However, even if individuals think that they understand the information presented in the media, there is a concern that many investors do not realise how risky the capital market is (Brigham & Ehrhardt 2007:7).

It should be noted that statement 33 had the highest level of unsure responses (26,39%) in the total survey. Only 37,50% of the respondents agreed with this statement, namely *cash-based financial information is more useful to executives than accrual-based financial information*. With reference to the importance of cash-based information, Berman and Knight (2006:140) explain that "cash flow is a key indicator of a company's financial health, along with profitability and shareholders' equity". One may deduce that the high unsure percentage could be due to the fact that many of the respondents did not understand the meaning of *accrual-based information* as used in the statement.

In statement 34, 75,00% of the participants disagreed that *most of the information in financial statements is based on estimates and assumptions*. In contradiction to this response, Hague et al (2006:268) are concerned that "users of financial statements may not realise the extent to which estimates have been used or the degree of uncertainty attached to the measurement of financial statement amounts". From the response to statement 39, *the narratives in financial statements assist in the understanding of the numbers*, 68,99% of the respondents agreed. In this regard, Greenblo (2006:26) argues that the sheer complexity of international accounting demands makes narrative reporting essential. According to Gouws and Cronjé (2008:122), contextual accounting, which complements the narrative section in financial statements, "serves as the context in which to better understand the statutory disclosures generated by GAAP". With regard to statement 41, only 34,72% agreed that

only financial experts understand annual financial statements. This response is in total contrast to Tieman's (2001:28) view that an alarming number of business leaders are ignorant of the simplest financial terms used in financial statements. Thus, if they do not understand the financial terms used, it would be difficult understanding the financial statements that use these terms as basis. The high percentage (54,63%) of respondents who disagreed with statement 41 – *only financial experts understand annual financial statements*, could be attributed to the fact that they were unsure of who can be classified as being “financial experts”.

10.3 DESCRIPTIVE AND INFERENCE STATISTICS

As explained in chapter 9, chi-square statistics and ANOVA were used for associations between response and sociodemographic group. The results of the descriptive and inferential statistics are outlined below.

10.3.1 Factor analysis and clustering

The statistical technique, factor analysis, was applied to the data obtained from the empirical research. According to Terre Blanche and Durrheim (1999:362), “factor analysis is a statistical technique that is used to identify a relatively small number of factors that can be used to represent the relationship among sets of many interrelated variables”. Eigenvalues were used to represent the amount of variance explained by each factor, and only those factors with eigenvalues greater than 1 were considered meaningful factors.

From the ANOVA of the mean factor responses of the sociodemographic groups there were only a few statistically meaningful relationships of less than 0,05, that is the f-statistic had a probability (p-value) of less than 0,05. In the first instance, statements 18, 19, 20 and 21 (FB1) were combined and related to the different sectors of the economy in which the respondents participate. Collectively these statements stated that it would be to the organisation's

overall benefit and lead to a better evaluation of the organisation’s performance if decision makers in organisations were financially literate. Figure 10.1 indicates the difference in mean factor scoring by the different sectors.

Another meaningful relationship with a p-value of less than 0,05 was obtained by combining statements 20, 22, 26 and 28 (CB2) and plotting them in relation to the economic sectors in which the respondents participate. These statements related to the fact that organisations with a financially literate work force have a competitive advantage over those who do not, and that employers should not only evaluate prospective employees’ financial literacy levels before appointing or promoting them, but that they are also responsible for providing employees with financial training. This relationship is depicted in figure 10.2.

Figure 10.1: Mean score for questions 18, 19, 20 and 21 (FB1) in relation to the economic sector

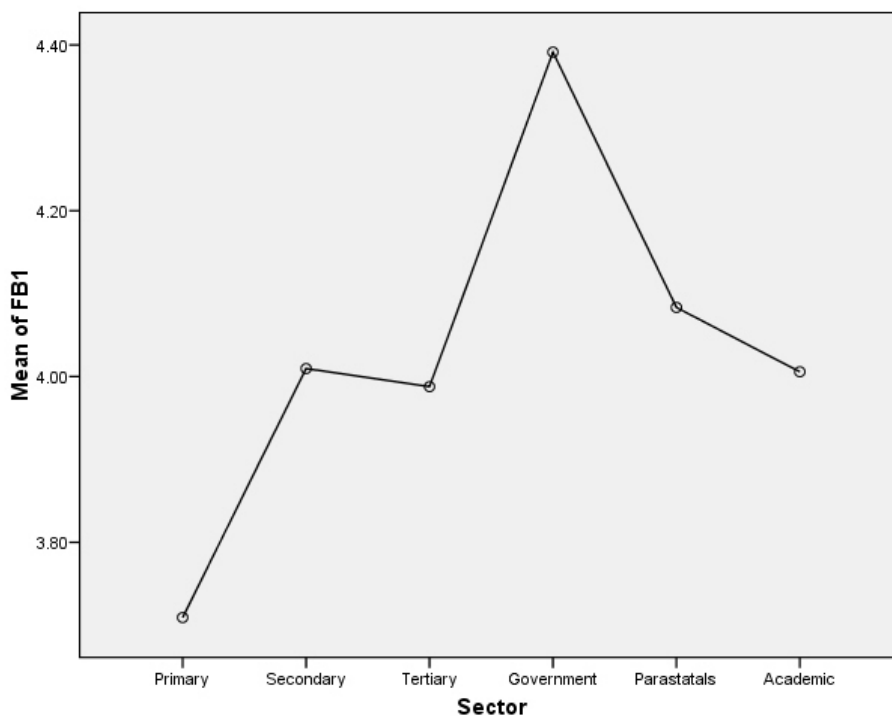
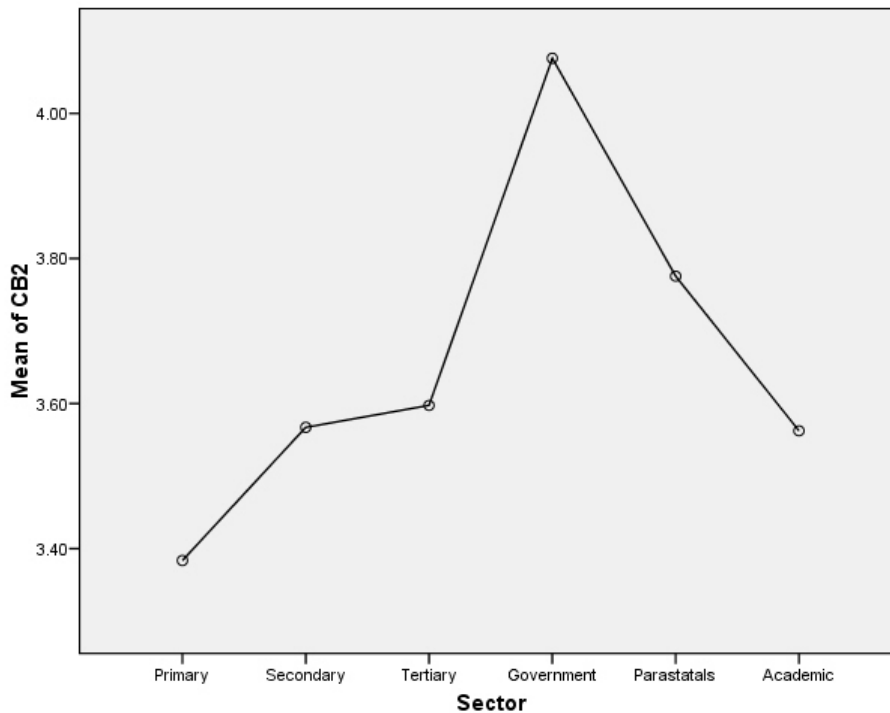


Figure 10.2: Mean score for questions 20, 22, 26 and 28 (CB2) in relation to the economic sector

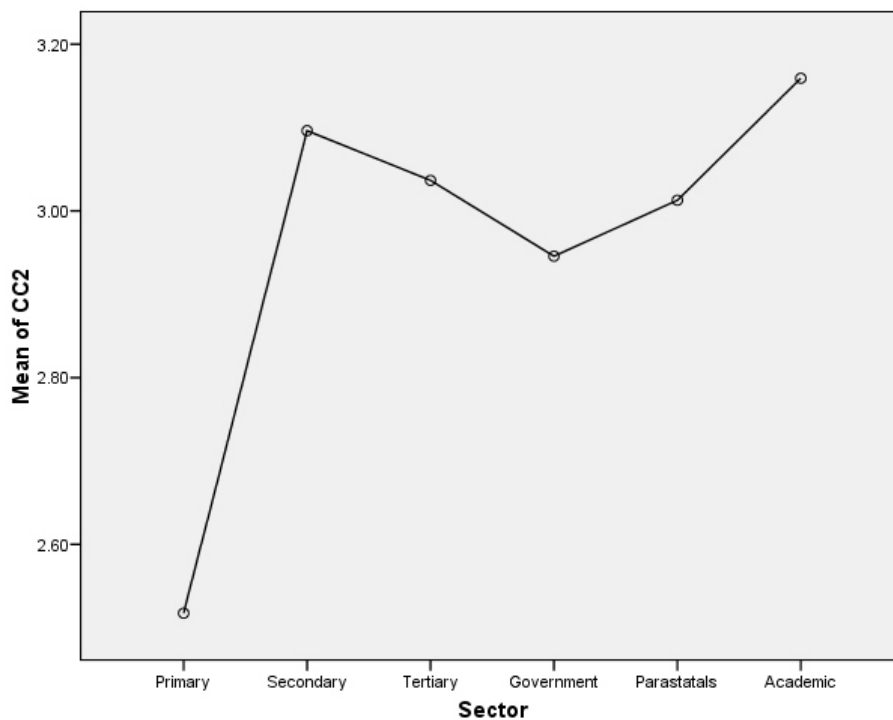


Both of these figures show that government scored the highest and the primary sector the lowest. One may deduce from figure 10.1 that respondents from the government sector agreed to a greater extent than, say, the primary sector that decision makers at all levels in organisations need to be financially literate for the overall benefit of the organisation to enable them to ask the right questions in order to better address white-collar crime. Senior managers also need to understand the meaning of financial ratios to enable them to evaluate the organisation's performance.

Figure 10.2 indicates that government sector respondents scored high in relation to the other sectors regarding the fact that organisations with a financially literate workforce have a competitive advantage over those who do not, and that employers should evaluate prospective employees' financial literacy levels before appointing or promoting them. Regarding financial training, they felt more strongly than the other sectors that employers generally have an obligation to provide financial training for their employees.

A meaningful relation was also found between statements 30, 31, 38 and 40 (CC2) and the economic sectors represented by the participants. These statements collectively suggested that annual financial statements provide executives with enough information to make future-oriented decisions and that it is presented in such a way that it highlights the key issues. These statements also suggested that it is easy to make performance predictions on the basis of financial statement information and that the information prepared by financial departments is always reliable and trustworthy. The relationship between these statements and the economic sectors is shown in figure 10.3.

Figure 10.3: Mean score for questions 30, 31, 38 and 40 (CC2) in relation to the economic sector



The mean scores in the questions grouped together in figure 10.3 were low with regard to the usefulness of financial statements for decision making. However, it is interesting that the academic sector scored the highest while the

primary sector scored the lowest and the government sector the second lowest.

10.3.2 Chi-square statistics

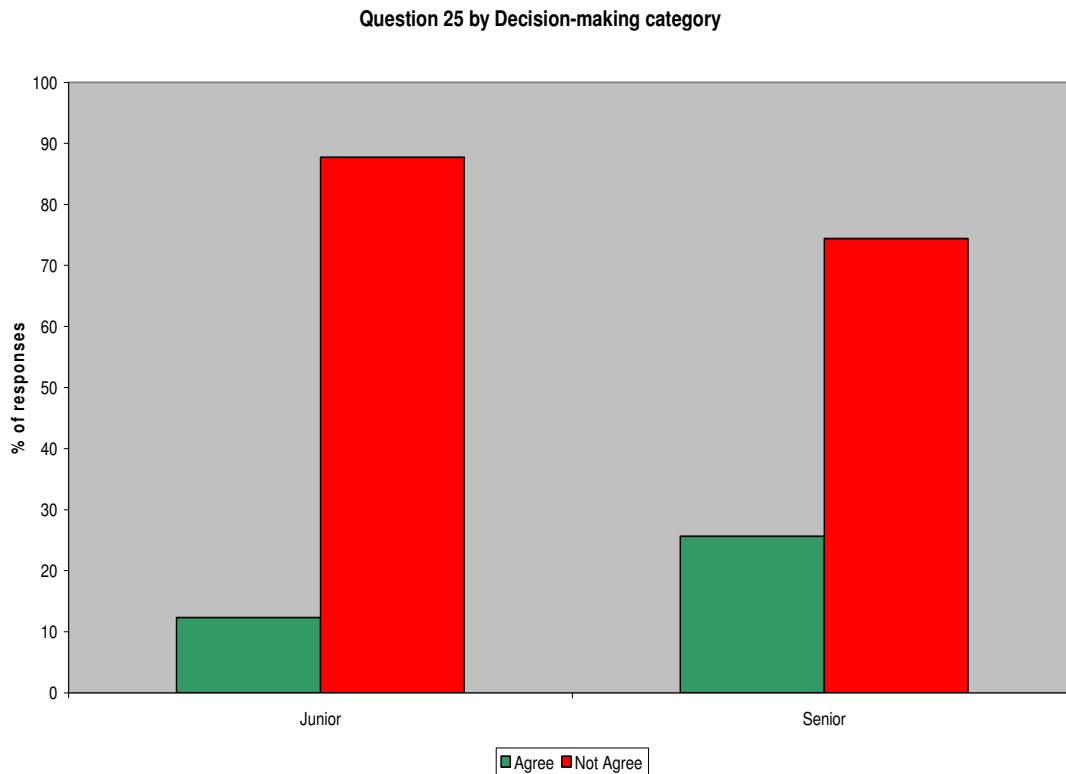
The number of responses per decision-making category was not always enough to perform chi-square statistics, and certain categories were therefore combined. Executives and senior management were combined to form a “senior” category and middle management, junior management and employees (not part of management) in a “junior” category. The *strongly disagree*, *disagree* and *unsure* responses were combined into a “not agree” category and the *agree* and *strongly agree* responses in an “agree” category. Only those results with a chi-square statistic probability smaller than 0,05 will be discussed here.

- (1) Statement 25: *Employees in your organisation do not need financial training to understand the basics of how business success measured.*

Table 10.1: Statement 25

Employees do not need financial training to understand the basics of how business success is measured	Decision-making level		Total
	JUNIOR	SENIOR	
Agree	17 12,32%	20 25,64%	37
Not agree	121 87,68%	58 74,36%	179
Total	138	78	216

Figure 10.4: Question 25 by decision-making category



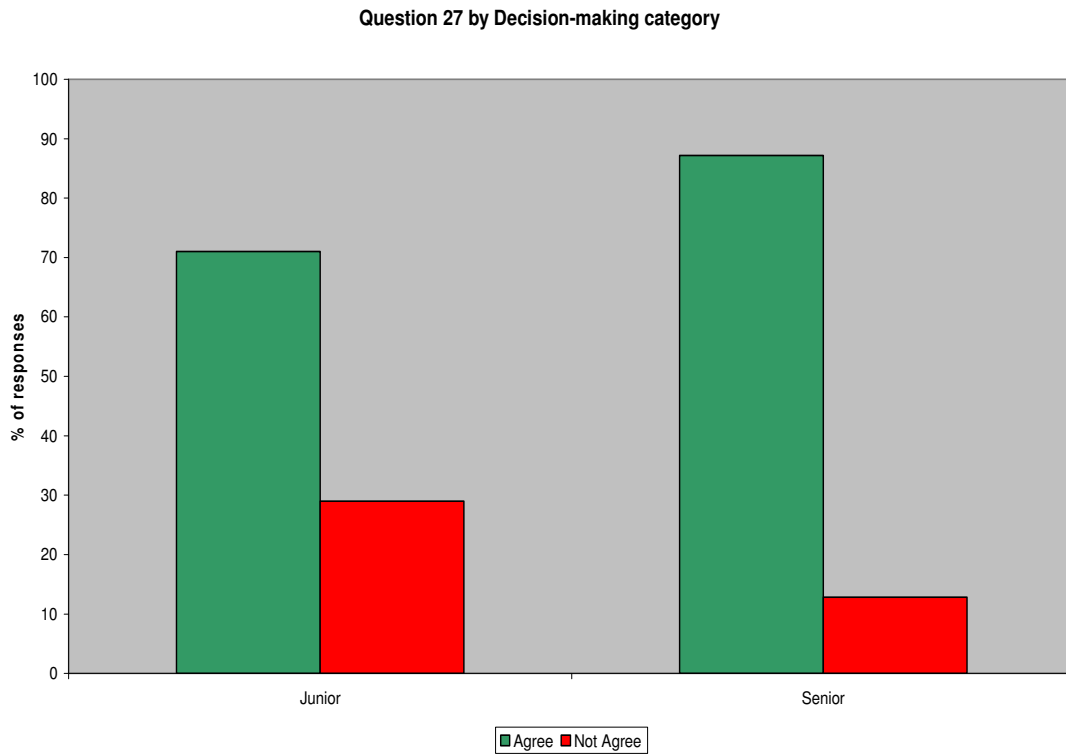
Because this statement was negative, table 10.1 and figure 10.4 show that only 12,32% of juniors and 25,64% of seniors agreed that employees do **not** need financial training to understand the basics of how business success is measured. Although it is somewhat disconcerting that more seniors than juniors concurred with this statement, it is still encouraging that 87,68% of juniors and 74,36% of seniors felt that employees do need financial training.

- (2) Statement 27: *Managers seldom admit that they do not know how to read their organisation's financial statements.*

Table 10.2: Statement 27

Managers seldom admit that they do not know how to read their organisation's financial statement	Decision-making level		Total
	JUNIOR	SENIOR	
Agree	98 71,01%	68 87,18%	166
Not agree	40 28,99%	10 12,82%	50
Total	138	78	216

Figure 10.5: Question 27 by decision-making category



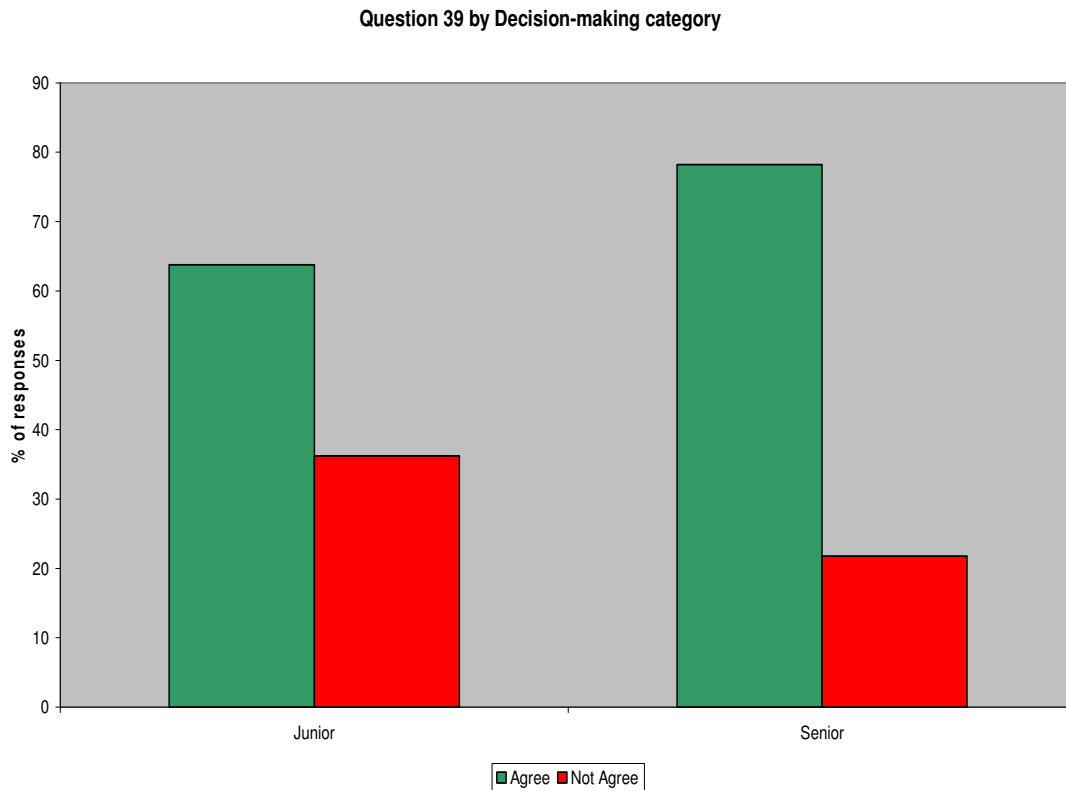
From table 10.2 and figure 10.5 it is clear that a higher percentage of seniors agreed that managers seldom admit that they do not know how to read their organisation’s financial statements. However, a significant percentage of juniors also concurred with this statement.

- (3) Statement 39: *The narratives in financial statements assist in the understanding of the numbers.*

Table 10.3: Statement 39

The narratives in financial statements assist in the understanding of the numbers	Decision-making level		Total
	JUNIOR	SENIOR	
Agree	88 63,77%	61 78,21%	149
Not agree	50 36,23%	17 21,79%	67
Total	138	78	216

Figure 10.6 Question 39 by decision-making category



As shown in table 10.3 and figure 10.6, senior managers agree to a greater extent than juniors that the narratives in financial statements assist in the understanding of the numbers.

10.4 SUMMARY

This chapter described the collation of the responses to the survey research conducted to determine decision makers' perceptions of the financial literacy concept, their views on the need to be financially literate and the attributes of financial information for decision making. The responses were first collated by clustering certain questions, and then presented in paragraph form. The descriptive and inferential statistics were then presented by means of tables and graphs. The main findings of the survey are summarised in the paragraphs below.

In total, the answers on 216 questionnaires were processed. The respondents participated in the primary, secondary and tertiary sector of the economy as well as government, parastatals and the academic sector. They also represented executive, senior management, middle management, junior management and other employees (not part of management) of the different organisations.

Regarding the respondents' perception of the financial literacy concept, it became clear that they overwhelmingly agreed that financial literacy entails more than the mere understanding of the terms "financial" and "literacy" and that there are different financial literacy levels for different purposes. A significant percentage of the respondents also agreed that the financial literacy concept requires an awareness of the available information in a decision-making situation and that being financially literate is a significant step on the road to sustainability.

An extremely high percentage of the respondents also agreed that financial literacy involves the contemplation of future scenarios and that it requires a scale of measurement to compare options. It was therefore no surprise that a significant percentage agreed that financial literacy lays the foundation for decision making under uncertainty and that it mitigates against the risks involved in decision making. From the responses it was evident that the participants perceived financial literacy to be more dependent on an understanding of the use of numbers and not as much as being a language proficiency issue. They also agreed that the outcome of financial literacy is the optimal allocation of resources.

An overwhelming number of respondents agreed that decision makers at executive level should know that they are both individually and collectively responsible for the organisation's financial activities, and also that decision makers at all levels should understand the financial and accounting terminology generally used in the organisation. Notwithstanding the fact that

most of the respondents agreed that it would be to the overall benefit of the organisation if decision makers at all levels were financially literate, they also concurred that senior managers have to understand the meaning of financial ratios in order to evaluate their organisations' performance. The respondents further agreed that organisations with a financially literate workforce generally would have a competitive advantage over those who do not.

Although a high percentage of the respondents agreed that employees in an organisation require financial training to understand the basics of how business success is measured, they were also convinced that financial literacy courses need to be industry specific - in other words, fit for purpose. Of interest, however, is the fact that only 64,81% agreed that employers generally have an obligation to provide training for their employees.

On a more controversial note, a significantly high percentage of respondents agreed that white-collar crime would generally be better addressed if more people were financially literate enough to ask the right questions. A major percentage also concurred that managers seldom admit that they do not know how to read their organisation's financial statements. According to the chi-square statistics, a higher percentage of senior managers as opposed to juniors agreed to this statement. From the survey, it could also be deduced that only 55,09% of the respondents concurred that employers should evaluate prospective employees' financial literacy levels before appointing or promoting them.

From the factor analysis it became clear that in most of the statements on the competitive advantage obtained by a financially literate workforce and addressing white-collar crime, the government sector scored the highest on the agreement scale while the primary sector scored the lowest.

With reference to the attributes of financial information, an extremely high percentage of respondents agreed that there is a need for a layperson's guide

to the annual financial statements to explain the important issues. However, a large percentage also concurred that information overload increases uncertainty and that different terms are sometimes used in financial information to indicate the same thing. It was also felt that annual financial statements have a limited target market.

It could further be inferred that the respondents do not think that annual financial statements provide executives with enough information to make future-oriented financial decisions and also that it is easy to make performance predictions on the basis of information contained in financial statements. The reason for this could be that only 57,87% agreed that financial statements are presented in such a way that they highlight the critical issues or because many of them were unsure or negative with about the reliability and trustworthiness of financial information prepared by financial departments. The factor analysis indicated that academics have more faith in the ability of financial information to provide decision makers with enough user-friendly and trustworthy information to make future-oriented financial decisions. One should bear in mind that more than half the academics who participated in the survey are well-grounded in the financial discipline. The results of this particular statement would probably have been different if the academics were from a nonfinancial background.

Notwithstanding a high percentage of unsure scores, respondents still felt that it is difficult to read and understand the financial section of the newspapers or capital market information as presented in the media. Interestingly, only a small percentage (15,74%) of respondents agreed that most of the information in financial statements is based on estimates and assumptions. This could be because they are not aware of the fact that financial statements no longer only reflect historical transaction-based figures, but are based instead on significant judgement by the preparers. Significant judgement includes fair-value estimation, provisions, estimates of residual values and the useful life of property plant and equipment as well as contingent liabilities. This response is

an indication that a high percentage of the respondents are ignorant about the compilation of information in financial statements.

Lastly, respondents agreed that the narratives in financial statements assist in the understanding of the numbers, and according to the chi-square statistics the senior managers agreed more to this than the juniors. However, this could be regarded as being contradictory to the fact that respondents agreed that financial literacy is not a language proficiency issue.

CHAPTER 11

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

In summary, knowledge is the expertise, experience and capability of staff, integrated with processes and corporate memory; information is the raw material that knowledge work requires and is made up of a variety of forms and types. ... Perhaps the simplest definition, however, is that knowledge is what people know; information is how they communicate it.

(Abell & Oxbrow 2001:73)

11.1 INTRODUCTION

In the introductory chapter to this thesis, it was indicated that for organisations to acquire a higher order of intelligence and decision-making capability they do not only need to generate new information, but also to enhance the ability of their employees and other role players to utilise this information. To address this dualistic problem, the nebulous or elusive financial literacy construct has been identified to act as a coordinating interface between the financial information system and the human behaviour system in an organisation.

In recent research there seems to be a global sense of urgency to enhance the financial literacy levels of the general public (eg Tie 2004; Piprek et al 2004; BSA & FSA 2006). In South Africa, with its unique challenges not only locally but also as part of the economic upliftment of the southern African region, the development of the nation's skills, including their financial capabilities, has also been supported by many authors (Beauchamp & Hicks 2005; Coetzer 2005; Manuel 2004; De Klerk 2006; Jekwa 2006). Although many programmes to enhance individuals' financial literacy levels have been put in place (see ch 3), the focus appears to be more on the needs of consumers than those of individuals actively involved in decision making in organisations.

In addition to the financial literacy issue, research on financial information presented to decision makers in organisations also indicated that many

perceive it to be complex, lengthy and not always user-friendly, even to those who do have the necessary financial background (eg Goldberg 2001; Dunn et al 2005; Schoonraad 2003; Pickard 2007a; Coppin 2006). The fact that South Africa competes in a global economy with complex business issues and has adopted IFRS, contributes to the intricate nature of financial information available in organisations. The following questions therefore arise: Does financial information currently alleviate the nonfinancial decision maker's uncertainty levels or does it contribute to it? How can this gap between the intricate financial information and the decision makers without formal financial education be bridged?

In an attempt to answer the above questions and to address the issues at stake, the study focused on the following:

- (1) the financial literacy challenges in South Africa
- (2) a view of the financial information system and the human behaviour system with self-renewal and adaptive capabilities
- (3) an analysis of the information dynamics as the organisation's creative energy
- (4) the challenge of financial information to satisfy decision makers' needs
- (5) the unpacking of financial literacy according to Bloom's six levels of thinking and Beard's teaching model and the challenge of preparing learners for a state of uncertainty
- (6) the evolving financial consciousness of decision makers as primary users of financial information
- (7) the development of a financial literacy interface model to bridge the expectations gap between financial information and decision makers
- (8) an empirical investigation into the perception of decision makers with regard to the financial literacy construct, to decision makers and to financial information in organisations

11.2 OVERVIEW OF THE LITERATURE AND EMPIRICAL STUDY

The problem addressed in this thesis relates to the need for a coordinating interface model to fill the financial literacy gap between decision makers with a nonfinancial background and the information mostly produced by the financial section of organisations, and other media. Two approaches were followed to examine the foregoing aspects: a literature review and a research survey. An overview of both these approaches is presented below.

11.2.1 Literature review

The theoretical foundations of the subject were examined in the literature review and comprised chapters 2 to 8. The first seven focus areas listed above were reviewed in these chapters by consulting books, periodical articles, dissertations, theses and technical reports. These secondary information sources were used to explore whether previous studies could contribute to the problems at hand and to identify the need for further research.

The challenges and need for financial literacy in a South African context were investigated in chapter 2. From the literature study it can be deduced that to succeed in creating conditions for rapid growth and job creation in the country, increasingly more individuals need to become financially literate, be it as consumers or decision makers in organisations. To improve service delivery and apply government's programme of action, public servants in particular need to improve their financial competencies.

An interdisciplinary systems approach was adopted to research the dualistic problem at hand. In chapter 3, attention was focused on the nature of the financial information system (matter) and the human behaviour system (mind). The dynamics of an open system and the importance of feedback between these two systems were highlighted as one of the prerequisites to narrow the gap between them. Financial literacy was also identified as another essential requirement to form an interface between matter and mind.

The nature of financial information as an enabler of decision making in a knowledge-driven organisation was discussed in chapter 4. Although there are many sources of financial information, attention was focused on the accounting conceptual framework underlying the presentation of financial information with special reference to the qualitative characteristics necessary to provide useful information for decision making. These characteristics are not only applicable to accounting information, but also to any other kind of information. The importance of a proper management information value chain to create a competitive advantage for the organisation was explained. The role of the accountant as one of the main transmitters of financial information and his or her role in the communication process were also discussed.

In chapter 5, the challenge for financial information to satisfy the needs of all the decision makers was contemplated and the different sources of financial information discussed. Many of the authors cited in this chapter are concerned that the growing complexity in the way financial information, in particular accounting information, is presented does not contribute to the production of information useful to a wide variety of decision makers. Presumably the effective communication of financial information requires financial information to some extent to be decoded by the preparers for the specific users of the information and that care must be taken not to indulge in information overload. To address the expectations gap between the preparers and the users of the information, there needs to be constant feedback from the users to the preparers, and the users need to empower themselves to become at least financially literate.

Chapter 6 introduced the learning for certainty versus learning for uncertainty paradox as a basis for financial literacy. Key concepts in the financial literacy sphere were defined and explained. Since learning plays a key role in the process of becoming financially literate, Bloom's six levels of thinking and Beard's teaching model were unpacked. Preparing learners for the uncertainty of the business world implies that a financially literate person requires a

financial consciousness, an awareness of quality and a culture of lifelong learning.

From the literature reviewed in chapter 7 it became clear that knowledge of the behaviour of individuals in decision-making situations should be used to improve both their decision-making skills and the way financial information is presented to them. Care should be taken to ensure that users do not acquire a manufactured consciousness whereby management succeed in conveying their own expectations and beliefs to users while they do not have the financial capability to question the information presented to them. It was also deduced that the rights of less sophisticated users of financial information should be taken into account by the preparers of the information and that they should not only focus on the interests of investors as identified in the user primacy principle.

One of the aims of this thesis was to develop a financial literacy interface model to enhance decision making in organisations. The construction of such a model was attempted in chapter 8. The model encompassed the basic financial literacy proficiencies needed by decision makers and the whole process of knowledge creation, depicting the learning process starting with experiencing the outer and inner environment of the organisation. Mitroff's view of problem solving, as introduced in chapter 1, was used to conceptualise the research problem and demarcate the scope of the research.

11.2.2 Survey research

Survey research was conducted to determine the perceptions of decision makers in the formal South African economy, of the financial literacy concept, financial literacy for decision making and the attributes of financial information for decision making. From the literature review performed it became apparent that there is a need to gather more information on decision makers' perceptions of financial literacy and information from an organisational perspective rather than a consumer's perspective.

The methodology used to conduct the survey was explained in chapter 9. Interviews with some role players in the economy preceded the design of a questionnaire. The pilot study as well as the distribution of the questionnaire to organisations in all the sectors of the formal economy was discussed. The data preparation and statistical presentation of the data were also discussed. The constraints encountered in conducting the survey were mentioned.

The collation of the survey responses and the presentation and evaluation of the research findings were depicted in chapter 10. Although the findings of the empirical research were explained in detail in the previous chapter, the following summarises the main findings of the research with regard to some of the research issues identified in chapter 1 of the thesis and depicted in the financial literacy interface model in chapter 8:

(1) Defining the financial literacy concept

An overwhelming percentage of the respondents agreed that financial literacy entails more than the mere understanding of the terms “financial” and “literacy”. Most of the respondents also concurred that there are different levels of financial literacy for different purposes. This perception corroborates the different information and cognitive levels (step-like approach) depicted in the financial literacy model in chapter 8. Of the respondents, a high percentage agreed that the financial literacy concept requires an awareness of the available information in a decision-making situation. The respondents also perceived financial literacy to be dependent on the understanding of the use of numbers.

(2) The need for financial literacy among decision makers

Most of the respondents agreed that decision makers at all levels in the organisation should understand the financial and accounting terminology generally used in the organisation. This includes an understanding of all the different types of information available in the organisation, as depicted in the model (see ch 8). A high percentage

also felt that senior managers have to understand the meaning of financial ratios in order to evaluate their organisation's performance. Most of the respondents held that organisations with a financially literate workforce generally have a competitive advantage over those who do not, and a high percentage agreed that knowledge of good corporate governance is an essential ingredient of becoming a financially literate decision maker. The respondents' feedback is thus in agreement with the illustration in the model (see ch 8) that users of financial information should evolve from having a financial awareness to eventually becoming financially intelligent and knowledgeable.

(3) The usefulness of financial information for decision making

In order to explain the primary issues in financial statements, the majority respondents agreed that there is a need for a layperson's guide to the annual financial statements. This response emphasises the financial information gap as shown in the model in chapter 8. Most of the respondents held that information overload increases uncertainty, while many also indicated that annual financial statements in particular have a limited target market. To a lesser extent, respondents stated that the narratives in financial statements assist with the understanding of the numbers. A lower than average percentage of respondents held that annual financial statements provide executives with enough information to make future-oriented financial decisions, and in the same sense, they disagreed that it is easy to make performance predictions on the basis of the information in financial statements. Where the model in chapter 8 illustrates that financial information provides the energy for decision making in the organisation, it is clear from these responses that users find information as presented in financial statements especially difficult to understand.

(4) The financial literacy interface

From the response it was clear that financial literacy could be used as an interface between financial information and decision making. Most of the respondents agreed that financial literacy alleviates the risks involved in decision making. As shown in the model in chapter 8, risk can only be alleviated when the user of financial information is financially literate enough to understand and interpret the information. In addition, an overwhelming percentage of the respondents concurred that financial literacy is a vital step on the road to sustainability and that it lays the foundation for decision making under uncertainty. A high number of respondents stated that white-collar crime would generally be better addressed if more people were financially literate enough to ask the right questions. Hence the interface between financial information and users is dependent on the education and training of decision makers to become more financially literate. Many of the respondents also indicated that employees need financial training to understand the basics of how business success is measured.

11.3 THE ADJUSTED FINANCIAL LITERACY MODEL

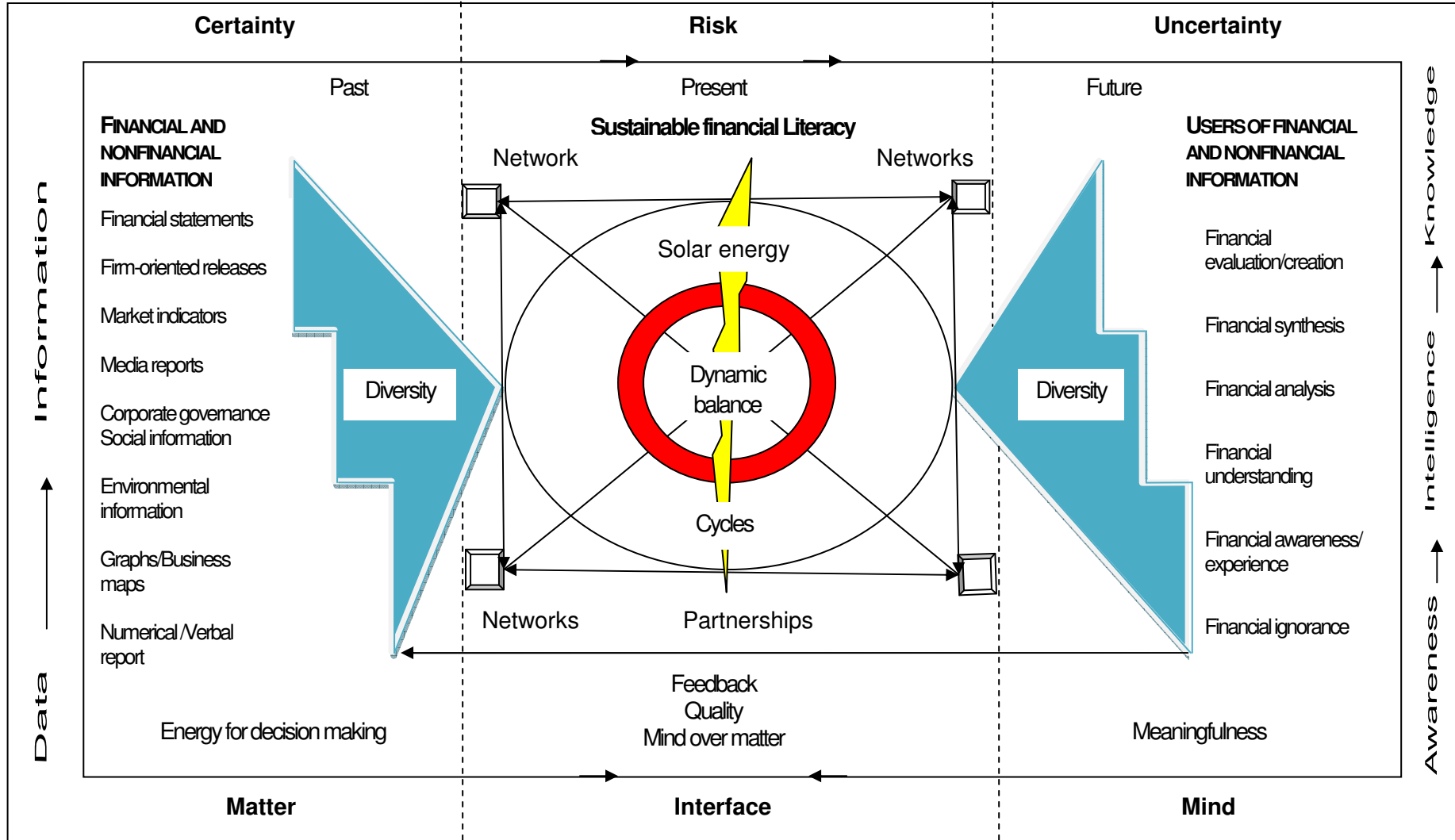
The results of the empirical survey influenced the proposed model illustrated in chapter 8. From the empirical research the need for a financial literacy interface between the financial information system and decision makers, to facilitate meaning, became clear. To understand the meaning of the financial information, decision makers need to relate it to other things in the economic environment. However, the relationship between the financial information system and decision makers could only be sustainable if it allows a continual flow of energy (information) through the organisation – creating an open system of interconnected networks. The systematic understanding of the financial literacy interface offers an opportunity to use as guideline, a set of principles suggested by Capra (2002:201), to construct the financial literacy

interface. Capra identified six principles of ecology (see ch 3) critical to sustaining life - networks, cycles, solar energy, partnership, diversity and dynamic balance - which could also be applied to illustrate the concept of a sustainable financial literacy interface (see fig 11.1). Because organisations evolve over time in continual interaction with its environment, sustainability means that there is a cyclic process of co-evolution within the different systems (networks) of the organisation, to create, through partnerships and diversity a state of dynamic balance. Information is the energy necessary to bring about change and growth, and to ultimately create value. However, financial literacy – the ability to understand the financial information and use it for decision making – is also a vital step on the organisation’s road to financial sustainability.

Organisations, identified as social systems, use communication networks to create thought and meaning. According to Wheatley (1999:151), “meaningful information lights up a network and moves through it like a windswept brushfire”. Hence to facilitate communication, information must be meaningful. A key competence underpinning financial literacy in an organisation is an understanding of financial information and business networks and the context in which they operate. A financial literacy interface could enhance a network’s communication capacity, by making financial information more meaningful to decision makers. However, sustainable financial literacy also requires an understanding of the financial information process wherein decision making is influenced by relationships between different variables and the cyclic interaction between networks.

The complexity of both financial information and the decision makers’ ability to understand financial information in a changing environment and timeframe, illustrated in the scientific financial literacy interface model (see fig 11.1), was discussed in the literature review and established in the empirical survey. In addition, Capra’s (2002:200-204) ecological literacy principles, used in this study to illustrate sustainable financial literacy, are depicted in figure 11.1.

Figure 11.1: The financial literacy interface model



Source: Own observation

The way in which the results of the empirical survey changed the original model as depicted in chapter 8, will be explained by means of the principles of ecology, introduced into the model to illustrate a sustainable financial literacy interface (see fig 11.1):

(1) Networks

Organisations consist of systems, or networks, interacting with one another. In a business organisation these networks communicate with one another by sharing information. According to the empirical survey most of the respondents agreed that decision makers at all levels should understand the financial information generally used in the organisation and that organisations with a financially literate workforce generally have a competitive advantage over those who do not. The different organisational departments or the management hierarchy can be seen as networks in the organisation. A sustainable financial literacy interface uses the financial information flow to link these networks and create value.

(2) Cycles

The dynamic interplay of information (matter) and energy, cycles through the organisation to generate new ideas and facilitate decision making. However, from the empirical survey it became clear that the majority of respondents find financial information as presented in financial statements difficult to understand and that they need, for example, a layperson's guide to explain the important aspects. Hence, instead of having a linear financial information flow, the process should be redesigned to imitate a cyclical process where feedback on the usefulness of the information will be given to those who produce it. The information flow cycle should not be broken because some individuals do not understand it.

(3) Solar energy

In nature, the sun, transformed into chemical energy by the photosynthesis process of green plants, provides the energy to drive the ecological cycles (Capra 2002:202). In the same sense, financial information is the energy that alleviates uncertainty and drives decision making in organisations. Most of the respondents in the empirical survey agreed that financial literacy lays the foundation for decision making under uncertainty and involves the contemplation of future scenarios. Financial literacy can therefore be regarded as a cyclical flow of energy connecting the network patterns in an organisation in order to alleviate uncertainty.

(4) Partnership

The exchange of information and resources in an organisation are sustained by cooperation between different networks. There should be pervasive cooperation between the financial information system and the cognitive ability of decision makers to ensure a sustainable financial literacy interface. With regard to cooperation, most of the respondents in the empirical survey concurred that decision makers are individually and collectively responsible for the organisation's financial activities. In organisations, there is interdependence between systems and subsystems. In the financial literacy interface this interdependence or partnership is a key characteristic for sustainable cooperation.

(5) Diversity

The richness and complexity of financial information and the diversity of the decision makers' cognitive ability assures resilience in decision making. But, when the information flow is restricted, because some may not understand it, suspicion and distrust is created and diversity becomes a hindrance (Capra 1994:10). From the empirical survey one may infer that the respondents basically perceived financial information as complex and difficult and that there are different levels of financial

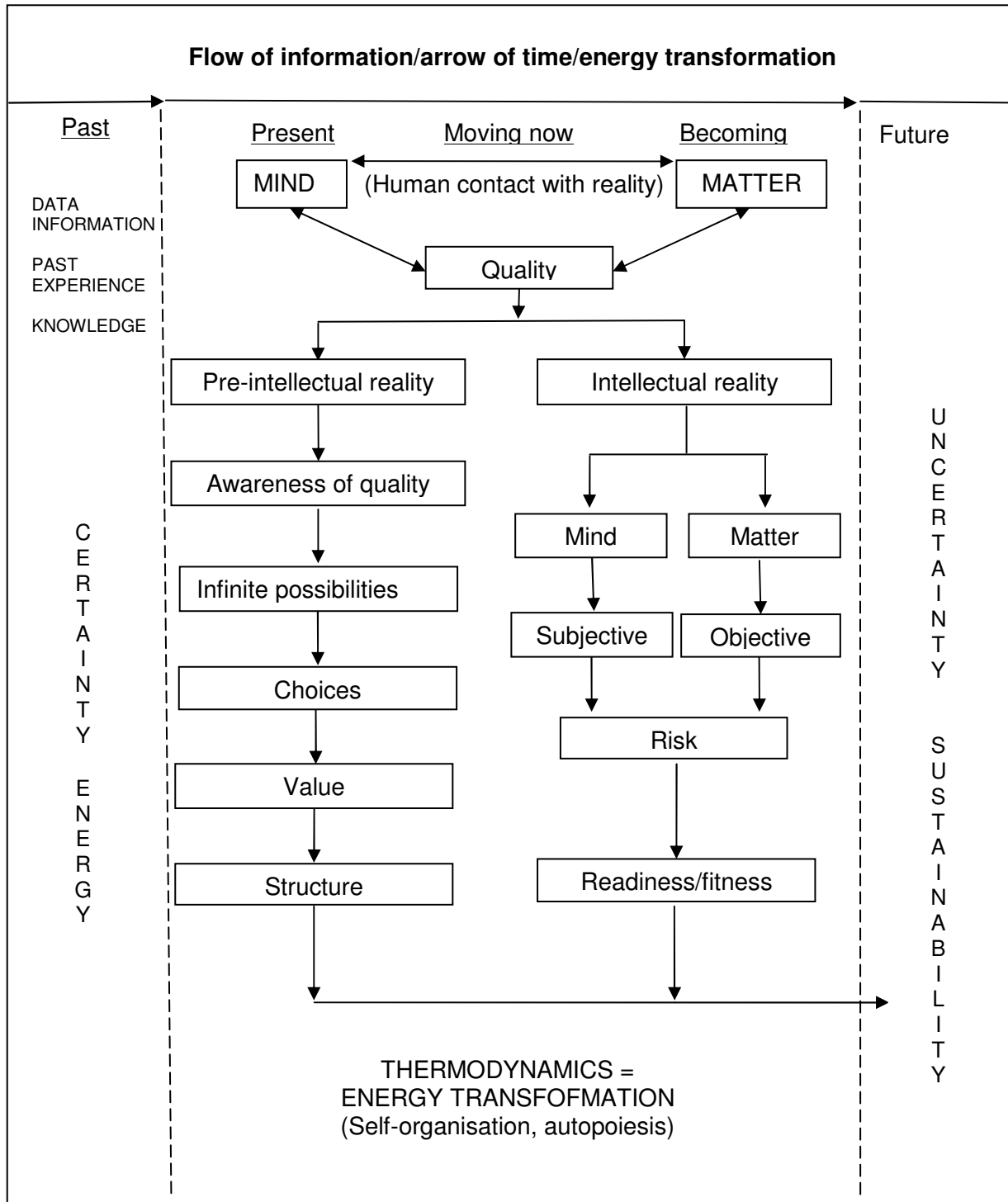
literacy training necessary for different purposes. Because individuals have diverse information needs, comprehensible fit for purpose information could lead to quality decision making. Hence intellectually conceived quality is possible in the interface as a trinity of financial literacy, mind and matter.

(6) Dynamic balance

An organisation is a flexible, ever-fluctuating network. The continuous flow of information to decision makers and their feedback keep the organisation in a state of dynamic balance where no single variable is maximised. Although many factors contribute to the organisation's sustainability, an overwhelming percentage of respondents in the empirical study agreed that financial literacy is an important step on the road to sustainability. This places financial literacy as a dynamic balancing factor in the centre of the interface between the diverse organisational networks, partnerships and information cycles.

A sustainable financial literacy interface provides a means of integrating the financial information system and the human behaviour system into a dynamic decision-making system. From the results of the literature review and the empirical survey, it was clear that complex financial information on its own cannot alleviate uncertainty and facilitate decision making. Kapur and Kesavan (1992:2) concur with most of the respondents in the empirical survey, that to decrease uncertainty, individuals collect an increasing amount of information, but, more often than not, it may in itself contribute to an increase in uncertainty. One may argue that although there can never be a world without uncertainty, one can "attempt to minimise it to the extent possible in order to get a glimpse of reality" (Kapur & Kesavan 1992:4). Hence the financial literacy interface as a meeting point between financial information and decision makers could contribute to minimise this uncertainty and attain quality in the decision-making process. Figure 11.2 depicts such an interface between mind and matter in more detail.

Figure 11.2: Conceptualising the interface between mind and matter



Source: Gouws (2008)

In figure 11.2, Gouws (2008) depicts the human contact with reality as a trinity between quality, mind and matter. Quality, in turn, consists of pre-intellectual reality and intellectual reality (see fig 11.2). Pre-intellectual reality leads to an awareness of quality. But, on the other hand, if one is ignorant of, say, financial activities, it “connotes distorted or incomplete knowledge” (Smithson 1989:7), which, in turn, will cloud the possibilities available to choose from. Hence, to facilitate choice and to create value (see fig 11.2), the financial literacy interface requires that one reflects upon or think about infinite possibilities.

Regarding the flow of information and the arrow of time, Pirsig (1999:247) contends that the present is one’s only reality, because the past only exists in one’s memories and the future only in one’s plans. However, the problem with financial information is that it relates mostly to transactions or events that have already occurred (past). In Pirsig’s opinion, “reality is always the moment of vision before the intellectualisation takes place”. In other words, this pre-intellectual reality identifies quality, which ultimately leads to infinite possibilities to choose from. Consequently, financial choices should create value within the structure of the organisation and ensure sustainability.

Intellectual reality (see fig 11.2), constitutes both mind (subjective reasoning) and matter (objective information). Although financial information, per se, is not always objective, its objectivity could be regarded as representing irreversible transactions that cannot be subjectively altered by the user thereof, because they already occurred. The way this information (matter) is interpreted by decision makers (mind) involves certain risks. Notwithstanding these risks, decision makers need a readiness or intellectual fitness to make decisions leading to organisational sustainability.

To maintain their self-organisation (see fig 11.2) and become sustainable, organisations need to continuously exchange energy between the financial information system and the human behaviour system, thus creating an open system where a high degree of non-equilibrium is always at work. This

principle is in accordance with Capra's principles of ecology previously discussed. Organisations continuously transform energy (data and information) into purposeful knowledge, in order to lower uncertainty. Financial literacy could thus be the interface through which this energy can be transferred. From the empirical survey, it is also evident that respondents concur that financial literate individuals must be aware of the available information and also that financial literacy is an important step on the road to sustainability. Consequently, according to Gouws (2008), in order to create value, to learn, to transcend and to sustain, three conditions (Beinhocker 2005:303) must be jointly met in the interface. These conditions are irreversibility, decreasing uncertainty and fitness.

(1) Irreversibility

All transformation and transactions are thermodynamically irreversible on the arrow of time. However, irreversibility on its own is not a sufficient condition for value creation, because some irreversible processes can destroy value, for example incompetent management, damage to property or money lost. The second condition, decreasing uncertainty, is therefore also necessary for value creation.

(2) Decreasing uncertainty (entropy)

When the organisation is in a state of equilibrium, it has exhausted all of its capacity to change and "dissipated its productive capacity into useless entropy" (Wheatley 1999:76). Within the organisation information is needed to reduce uncertainty, but new transformations and transactions, in turn, create uncertainty, if not in the same system, then in others. Hence low uncertainty is necessary in the financial literacy interface to ensure value creation. Although the first two conditions are necessary for value creation, the third one, fitness, must be jointly met.

(3) Fitness

All economic transformations and transactions produce products, services and events fit for human purposes. However, individuals have economic preferences that dictate the decisions they make. Hence financial decision making is always fit for purpose, which means that decision makers' financial literacy levels also need to fit their specific decision-making objectives. The majority of respondents in the empirical survey also concurred that financial literacy course need to be industry specific (fit for purpose).

One may infer that in order to create value, a full understanding of the financial literacy interface is essential to reduce uncertainty and improve financial decision making.

11.4 CONCLUSIONS

In compliance to the main research objective stated in chapter 1, a financial literacy model as a coordinating interface between financial information and decision makers in order to enhance sound decision making, was developed. The secondary objectives to support the main research aim (ch 1), were addressed in the literature study and the empirical survey. In compliance to these objectives, general conclusions were drawn from the literature study, while more specific conclusions were drawn from the empirical study.

11.4.1 General

With reference to the objectives and problems defined in chapter 1 of this study, and on the basis of the results of the literature study, the following general conclusions can be drawn:

- (1) Organisations are complex and consist of many interrelated systems and subsystems, of which the financial information system and the human behaviour system are but two.

- (2) Financial literacy can be regarded as one of the basic requirements needed to form an interface between these two systems.
- (3) South Africa is in dire need of financially literate individuals who can participate fully in the economy and who can contribute to the eradication of poverty and social inequality.
- (4) Financial literacy in an organisation can be described as the ability of everyone in the organisation to make informed financial decisions required for their specific responsibility level.
- (5) The increase in the volume and complexity of financial information often outstrips the ability of users to understand and interpret it for decision making.
- (6) Decision makers need to be equipped to operate amid an ever-present uncertain and complex economic environment.
- (7) A financial literacy teaching model would need to include a holistic approach towards learning from the knowledge level up to the level of evaluation and creation.
- (8) Users of financial information differ vastly in their level of financial capability and sophistication, and preparers of financial information should take cognisance of this fact.
- (9) The dilemma in many organisations is that only a few key players, especially those in the financial department, understand the intricate financial reports.
- (10) As a consequence of the intricate relationship between the financial information system and the human behaviour system, the financial literacy interface is a complex construct.
- (11) From the financial literacy interface model, one may infer that sound financial decision making is only possible when the trinity of mind, matter and quality, in the interface is fully understood.

11.4.2 Empirical study

Although the survey results were discussed at length in chapter 10, the following interesting conclusions can be drawn from the research survey:

- (1) Financial literacy is a complex phenomenon and the term encompasses more than the terms “financial” and “literacy”.
- (2) Financial literacy is an important step on the road to sustainability.
- (3) Financial literacy lays the foundation for decision making and mitigates against the risks involved in decision making.
- (4) Financial literacy is perceived to be more dependent on the understanding of the use of numbers and not as much a language proficiency issue.
- (5) It would be to the overall benefit of an organisation if decision makers at all levels were financially literate.
- (6) Organisations with a financially literate work force have a competitive advantage over those who do not.
- (7) Employees in organisations need financial training to understand the basics of how business success is measured.
- (8) Financial literacy courses need to be industry specific - in other words, fit for purpose.
- (9) White-collar crime would generally be better addressed if more people were financially literate enough to ask the right questions.
- (10) Managers seldom admit that they do not fully understand their organisation’s financial statements.
- (11) Annual financial statements do not provide executives with enough information to make future-oriented financial decisions or performance predictions.
- (12) The academic sector, as opposed to the other economic sectors, has more faith in the ability of financial information to provide decision makers with enough user-friendly and trustworthy information to make future-oriented financial decisions.
- (13) Respondents from the government sector realise to a greater extent than those in the other sectors that it is to the organisation’s overall benefit if decision makers in the organisation are financially literate and that prospective employees’ financially literate levels are evaluated before appointing or promoting them.

11.5 RECOMMENDATIONS

The recommendations below on both the literature study and the survey results would presumably contribute to narrowing the gap between financial information and decision makers:

- (1) The major challenges confronting the decision-making dilemma in organisations should be viewed holistically, taking into account the environment in which the organisation operates. These challenges include the intricacies of economic activities in the global arena, the complexity and overabundance of financial information and the lack of financial literacy among many of the organisation's role players pertaining to their decision-making responsibility.
- (2) Problems with financial decision making should be addressed from an open systems perspective where the feedback from the users of financial information is taken into account. However, this kind of feedback is virtually nonexistent, and a culture of feedback needs to be encouraged before mention can be made of taking it into account.
- (3) To address the expectations gap between financial information and decision makers in organisations, the decision makers need to hone their financial literacy levels. The different needs of decision makers have to be established and industry-specific financial literacy courses then have to be developed. Financial training in organisations needs to be promoted.
- (4) Decision makers require complete, timely and understandable financial information on which to base their decisions. Additional future-oriented information could assist users with forecasts and predictions. Narratives should at least highlight the main issues.
- (5) A layperson's guide should also accompany organisations' annual financial statements to explain the important issues and provide additional information on organisations' activities, financial performance and position.

- (6) Care should be taken to ensure that decision makers do not receive an overload of information. The financial department could, for example, demarcate the information for users operating on different decision-making levels in the organisation, or information could be summarised and presented in tables or graphs.
- (7) A common learning goal and financial language need to be established for financial literacy education across persons, subject matter and levels. This could be done for primary, secondary and tertiary levels of education or for basic adult education. Within an organisation, this could also be done for different decision-making levels - strategic, tactical or operational.
- (8) The wide ranges of outcomes for financial literacy education need to be linked to other subjects and disciplines, such as economics, mathematics, accounting and language.
- (9) A basis for determining a national financial literacy curriculum for decision makers in organisations should be envisioned.
- (10) Industry-specific financial literacy courses should be developed.
- (11) More research into the dimensions and challenges within an interface is necessary to demystify the relationships between matter, mind, quality, value and sustainability.

11.6 CONTRIBUTIONS TO RESEARCH

This study should make several mainline contributions to financial management and some derived contributions to related disciplines. These contributions can be summarised as follow:

- Through an interdisciplinary literature survey, the study identifies the dire need for an interface between the financial information system and the human behaviour system of organisations.

- The literature review and empirical research recognised the challenge of general purpose financial statements and other financial information to satisfy the needs of nonfinancial decision makers in organisations.
- The study acknowledges that, in general, globally and in South Africa specifically there is a shortage of financially literate people in decision-making positions in organisations.
- It creates a greater awareness of the competitive value of having financially literate decision makers in organisations.
- The study focuses on the importance of identifying the different cognitive levels of learning as a basis for financial literacy education and on the fact that financial literacy encompasses financial consciousness, financial intelligence and financial knowledge.
- The proposed model takes an observed phenomenon, *financial literacy interface*, and makes it visible by identifying the following key aspects:
 - There are different levels of learning, from the basic level of financial awareness to the higher knowledge level where the decision maker can evaluate the information and create new applications from it.
 - Decisions based on a variety of financial information are always taken in the *present*, but relate to *future* actions. Because the outcomes of these decisions are *uncertain*, there is an element of *risk* involved.
 - Decision making occurs in the interface, at the point where communication successfully takes place, that is, the bifurcation point or interface where mind resides over matter. Decision makers have to acquire a financial awareness, intelligence and knowledge to be able to analyse and interpret financial information for decision making.

11.7 SUGGESTIONS FOR FURTHER RESEARCH

Although the results of the study are encouraging, further research is also required in the following areas:

- empirical testing of the financial literacy levels of decision makers in organisations
- devising a simplified method of presenting financial statements that is easy to understand but still complies with generally accepted accounting practice
- developing a framework for a layperson's guide to the annual financial statements, to explain the important issues in the statements
- assessing the influence of knowledge of good corporate governance on the rationale for becoming more financially literate
- designing a basic curriculum for financial literacy education for decision makers on different management levels in organisations
- assessing the influence of feedback from decision makers to the preparers of financial information, on the way they prepare this information
- analysing the weight assigned to financial literacy education in the school curriculum, apart from that presented in the formal Accounting subject

The above-mentioned topics should highlight the fact that the problems facing decision makers in organisations, specifically with reference to the South African environment, need to be pursued in further research. In order to create and maintain a sustainable economy, financial literacy should feature as an important element of future skills development studies.