

**AN INTEGRATED AUDIT EVIDENCE PLANNING MODEL TO
QUANTIFY THE EXTENT OF AUDIT EVIDENCE**

by

MARIAN MENTZ

submitted in accordance with the requirements for

the degree of

DOCTOR OF COMMERCE

in the subject

AUDITING

at the

UNIVERSITY OF SOUTH AFRICA

PROMOTERS: Professors K BARAC and EM ODENDAAL

2014

APPRECIATION

I would like to express my sincere thanks and appreciation to the following for their assistance in completing this study:

- My promoters, Professors Karin Barac and Elza Odendaal, for their guidance and supervision.
- My parents, for their continued love, support and encouragement.
- My Heavenly Father, for giving me the strength and perseverance to complete this study.

ABSTRACT

Audit evidence enables the auditor to express an opinion on the financial statements. To address the risk that the auditor may express an inappropriate opinion, the nature, timing and extent of audit procedures must be responsive to the assessed risks of material misstatement. The auditor must aggregate the levels of assurance obtained from different combinations of tests of controls, substantive analytical procedures and tests of details to respond to the assessed risks. These evidence planning decisions are complex and require professional judgement.

Research has found that the extent of audit procedures is not linked to the assessed risks and that auditors may not know to aggregate evidence from different types of audit procedures. Research also supports the use of a structured audit methodology that includes decision models, to guide the application of professional judgement. This leads to the overall objective of this study: the development of an integrated audit evidence planning model to quantify the extent of audit evidence.

The study employs a grounded theory model building approach, interpreting the relevant concepts and principles from the literature review into the development of the model. The integrated audit evidence planning model quantitatively relates the extent of audit evidence in a logical and structured manner with the risk assessment and three distinct overall levels of assurance needed to support the audit opinion. It uses the cumulative nature of audit evidence and the compensatory inter-relationship between tests of controls, substantive analytical procedures and tests of details to quantitatively aggregate the extent and levels of assurance from the different combinations of procedures to obtain reasonable assurance at the required overall level of assurance. The model provides a framework for influencing and guiding the exercise of professional

judgement and is a practical and effective tool to benefit the users thereof when conducting an audit.

Thus, the study models the extent of audit evidence with reference to the aggregation of different types and combinations of evidence and the linkage between the risk assessment and the extent of evidence that provides a flexible framework for the application of professional judgement regarding the gathering of audit evidence.

KEY TERMS

Audit planning model, Extent of audit evidence, Aggregation of audit evidence, Audit evidence mix, Risk of material misstatement, Audit risk, Level of assurance, Further audit procedures, Tests of controls, Substantive analytical procedures, Substantive tests of details, Audit sampling, Sample size, Quality control, Practice review

CONTENT

CHAPTER 1: INTRODUCTION	15
1.1 BACKGROUND AND CONTEXT.....	15
1.2 JUSTIFICATION AND SIGNIFICANCE	20
1.3 RESEARCH OBJECTIVES.....	22
1.4 THESIS STATEMENT	23
1.5 DELINEATIONS AND LIMITATIONS.....	24
1.6 CHAPTER OUTLINE	26
1.7 CONCLUSION	29
CHAPTER 2: AUDIT AS PART OF THE ACCOUNTABILITY PROCESS	30
2.1 INTRODUCTION	30
2.2 THE NEED FOR AN AUDIT.....	31
2.2.1 Development of the modern organisation	31
2.2.2 Agency theory.....	36
2.2.3 Stakeholder theory	39
2.2.4 The impact of agency and stakeholder theories on the need for an audit.....	46
2.3 THE AUDIT POSTULATES	51
2.3.1 Mautz and Sharaf's audit postulates.....	53
2.3.2 Flint's audit postulates	55
2.4 THE AUDIT DEFINITION AND THE ACCOUNTABILITY PROCESS.....	58
2.4.1 The definition of an audit	59
2.4.2 The accountability process	61
2.4.3 Auditing in the accountability process.....	62

2.5	THE AUDIT REGULATORY ENVIRONMENT	69
2.5.1	Statutory requirements	70
2.5.2	Standard setters	70
2.5.3	Professional institutions.....	73
2.5.3.1	Auditing standards	75
2.5.3.2	Practice reviews.....	76
2.5.4	Corporate governance.....	77
2.6	CONCLUSION	80
	CHAPTER 3: AUDIT EVIDENCE.....	84
3.1	INTRODUCTION	84
3.2	AUDIT EVIDENCE.....	85
3.2.1	The concept of audit evidence.....	86
3.2.2	Sufficient appropriate audit evidence.....	89
3.2.3	Audit efficiency and effectiveness.....	92
3.3	MATERIALITY	94
3.3.1	The concept of materiality	94
3.3.2	Materiality judgement and the audit process	96
3.3.3	Materiality and the size (quantity) and nature (quality) of misstatements	98
3.3.4	Materiality and audit evidence	100
3.4	RISK	101
3.4.1	Risk and assurance	101
3.4.2	The risk-based audit.....	103
3.4.3	The audit risk model	105
3.5	NATURE, TIMING AND EXTENT OF EVIDENCE GATHERING PROCEDURES.....	111

3.5.1 The nature, timing and extent of evidence gathering procedures in response to assessed risk	112
3.5.1.1 The nature of audit procedures.....	113
3.5.1.2 The timing of audit procedures	113
3.5.1.3 The extent of audit procedures	114
3.5.2 The extent of substantive analytical procedures, tests of controls and tests of details.....	115
3.5.2.1 Substantive analytical procedures	117
3.5.2.2 Tests of controls and tests of details.....	121
3.5.3 The purpose of evidence gathering procedures	126
3.5.4 The interaction between evidence gathering procedures and risk.	129
3.6 THE CASE FOR MODELLING AUDIT EVIDENCE	134
3.7 CONCLUSION.....	141
CHAPTER 4: RESEARCH METHODOLOGY	144
4.1 INTRODUCTION	144
4.2 RESEARCH METHODOLOGY (APPROACH) AND METHODS.....	145
4.2.1 Inductive vs. deductive research	146
4.2.2 Qualitative vs. quantitative research.....	149
4.3 LITERATURE REVIEW	153
4.4 MODEL DEVELOPMENT	154
4.4.1 Theory building.....	154
4.4.2 Grounded theory.....	156
4.4.3 Model visualisation	160
4.5 MODEL EVALUATION	161
4.6 ETHICAL CONSIDERATIONS.....	162
4.7 CONCLUSION	163

CHAPTER 5: DEVELOPMENT OF THE INTEGRATED AUDIT EVIDENCE PLANNING MODEL	167
5.1 INTRODUCTION	167
5.2 THE INTER-RELATIONSHIP BETWEEN TYPES OF AUDIT EVIDENCE	169
5.2.1 Audit evidence gathering approaches	171
5.2.1.1 The combined vs. substantive audit evidence gathering decision	173
5.2.1.2 The substantive analytical procedures vs. tests of details audit evidence gathering decision	177
5.2.2 The audit evidence mix matrix	184
5.2.3 The assurance bucket analogy.....	185
5.3 LEVELS OF ASSURANCE OF TYPES OF AUDIT EVIDENCE.....	189
5.3.1 Overall assurance and audit risk	190
5.3.2 Setting overall levels of assurance	191
5.3.3 Application to the assurance bucket analogy	196
5.3.4 The compensatory nature of audit evidence.....	198
5.3.5 Relating overall levels of assurance to levels of assurance from different types of audit evidence.....	202
5.3.6 Application to the assurance bucket analogy	208
5.4 THE INTEGRATED AUDIT EVIDENCE PLANNING MODEL: LEVELS OF ASSURANCE.....	209
5.5 THE RELATIONSHIP BETWEEN THE INTEGRATED AUDIT EVIDENCE PLANNING MODEL AND THE EXTENT OF FURTHER AUDIT PROCEDURES.....	211
5.5.1 Distinct levels of assurance for further audit procedures	212
5.5.2 The extent of substantive analytical procedures vs. tests of controls and tests of details.....	213
5.6 SUBSTANTIVE ANALYTICAL PROCEDURES.....	215
5.6.1 The relationship between the extent of substantive analytical procedures, levels of assurance and precision.....	216

5.6.2	Deriving precision intervals.....	219
5.6.3	Application of the precision intervals	223
5.6.4	The compensatory relationship between substantive analytical procedures and tests of details.....	228
5.7	TESTS OF CONTROLS AND TESTS OF DETAILS.....	233
5.7.1	Determinants of sample size	234
5.7.1.1	Desired level of assurance.....	235
5.7.1.2	Tolerable misstatement or deviation rate	239
5.7.1.3	Expected misstatement or deviation rate	241
5.7.1.4	Precision and sample sizes	243
5.7.2	Impact on tests of controls.....	246
5.7.3	Impact on tests of details.....	249
5.7.4	The compensatory relationship between tests of controls and tests of details	251
5.8	THE INTEGRATED AUDIT EVIDENCE PLANNING MODEL: LEVELS OF ASSURANCE LINKED TO THE EXTENT OF FURTHER AUDIT PROCEDURES.....	255
5.9	JUDGEMENT AND THE INTEGRATED AUDIT EVIDENCE PLANNING MODEL	257
5.10	CREDIBILITY OF THE INTEGRATED AUDIT EVIDENCE PLANNING MODEL	258
5.10.1	Quality control requirements	259
5.10.2	IRBA practice reviews	260
5.10.3	The IRBA's practice review of the AGSA	261
5.11	CONCLUSION	263
	CHAPTER 6: CONCLUSION.....	267
6.1	INTRODUCTION	267
6.2	CONTEXTUALISATION AND JUSTIFICATION	268

6.3	SUMMARY OF THE STUDY	272
6.4	CONTRIBUTION AND BENEFITS.....	279
6.5	SUGGESTIONS FOR FURTHER RESEARCH	288
6.6	CONCLUSION	291

ADDENDUMS **292**

ADDENDUM A:	APPROVAL FOR THE USE OF AGSA WORK	292
-------------	---	-----

ADDENDUM B:	STATISTICAL SAMPLE SIZES – SIGNIFICANT (= 3) 95% LEVEL OF ASSURANCE	293
-------------	--	-----

ADDENDUM C:	STATISTICAL SAMPLE SIZES – STANDARD (= 2) 86% LEVEL OF ASSURANCE	294
-------------	---	-----

ADDENDUM D:	STATISTICAL SAMPLE SIZES – SLIGHT (= 1) 63% LEVEL OF ASSURANCE.....	295
-------------	--	-----

BIBLIOGRAPHY **296**

LIST OF DIAGRAMS

Diagram 2.1: Audit and the accountability process.....	65
Diagram 2.2: Phases of the audit process.....	72
Diagram 3.1 The audit risk model at assertion level.....	108
Diagram 4.1: Theory building (inductive) and theory evaluation (deductive) research	148
Diagram 4.2: Theory building and theory evaluation research applied in this study	149
Diagram 4.3: Mapping research approaches	152
Diagram 5.1: Combined vs. substantive audit evidence gathering decision model	177
Diagram 5.2: Audit evidence gathering decision model.....	181
Diagram 5.3: The assurance bucket analogy	187
Diagram 5.5: The size of the assurance bucket in response to the assessed risks of material misstatement.....	197
Diagram 5.6: The compensatory relationship between tests of controls, substantive analytical procedures and tests of details	200
Diagram 5.7: The assurance bucket analogy and quantified levels of assurance	208
Diagram 5.8: The integrated audit evidence planning model: Levels of assurance	210
Diagram 5.9: Precision intervals for substantive analytical procedures.....	222
Diagram 5.10: Application of the precision interval for a slight level of assurance (= 1)	224
Diagram 5.11: Application of the precision interval for a standard level of assurance (= 2).....	225
Diagram 5.12: Application of the precision interval for a standard level of assurance (= 2) after refinement of the expectation.....	227
Diagram 5.13: The integrated audit evidence planning model: Levels of assurance linked to the extent of further audit procedures	256

LIST OF TABLES

Table 5.1: Audit evidence mix matrix.....	185
Table 5.2: Levels of assurance vs. audit risk.....	193
Table 5.3: Quantified audit evidence mix matrix.....	207
Table 5.4: Distinct levels of assurance for types of further audit procedures .	213
Table 5.5: Direct relationship between desired level of assurance and sample size	237
Table 5.6: Inverse relationship between tolerable deviation rate and sample size	240
Table 5.7: Direct relationship between expected deviation rate and sample size.	242
Table 5.8: Inverse relationship between precision and sample size	244
Table 5.9: Assurance factor for a significant 95% level of assurance.....	245
Table 5.10: Deriving sample sizes for tests of controls.....	248
Table 5.11: Sample sizes for tests of controls under the integrated audit evidence planning model	249
Table 5.12: Compensatory relationship between tests of controls and tests of details	254

LIST OF ABBREVIATIONS

The following abbreviations are used in this study:

AAA:	American Accounting Association
AASB:	Auditing and Assurance Standards Board
AGSA:	Auditor-General of South Africa
AICPA:	American Institute of Certified Public Accountants
APR:	Substantive analytical procedures risk
AR:	Audit risk
CFAS:	Committee for Auditing Standards
CICA:	Canadian Institute of Chartered Accountants
CR:	Control risk
DR:	Detection risk
IAASB:	International Auditing and Assurance Standards Board
IAASB Framework:	International Framework for Assurance Engagements
IAASB Glossary:	International Auditing and Assurance Standards Board's Glossary of Terms
IASB:	International Accounting Standards Board
IFAC:	International Federation of Accountants
IFRS:	International Financial Reporting Standard
IFRS for SMEs:	International Financial Reporting Standard for Small and Medium-sized Entities
IFRS Framework:	Conceptual Framework for Financial Reporting
INTOSAI:	International Organisation of Supreme Audit Institutions
IoDSA:	Institute of Directors in Southern Africa
IR:	Inherent risk
IRBA:	Independent Regulatory Board for Auditors

ISA:	International Standard on Auditing
ISAE:	International Standard on Assurance Engagements
ISQC:	International Standard on Quality Control
ISRE:	International Standard on Review Engagements
ISRS:	International Standard on Related Services
ISSAI:	International Standard of Supreme Audit Institutions
IT:	Information Technology
JSE:	Johannesburg Stock Exchange
King III:	King report on governance for South Africa
PAAB:	Public Accountants' and Auditors' Board
PCAOB:	Public Company Accounting Oversight Board
RMM:	Risk of material misstatement
RSA:	Republic of South Africa
SAAS:	South African Auditing Standard
SAB:	Staff Accounting Bulletin
SAICA:	South African Institute of Chartered Accountants
SAS:	Statement on Auditing Standards
TCR:	Tests of controls risk
TDR:	Tests of details risk
Treadway Commission:	National Commission on Fraudulent Financial Reporting
US:	United States
USA:	United States of America
US SEC:	United States Securities and Exchange Commission
WEF:	World Economic Forum

CHAPTER 1: INTRODUCTION

“It is wrong always, everywhere, and for anyone, to believe anything upon insufficient evidence” (Clifford 1877: 295).

1.1 BACKGROUND AND CONTEXT

Organisations in today’s modern society and business environment are characterised by a separation of ownership between owners (shareholders and investors), who are not directly involved in the running of the business, and the use of professional managers, hired by the owners to manage the organisation’s capital and to run the organisation on a day-to-day basis (Messier, Glover and Prawitt 2010: 5; Spicer and Pegler 1921: 3). The managers serve as agents for the owners (referred to as principals) and fulfil a stewardship function by managing the organisation’s resources.

With the concentration of power and control of the modern organisation in management, there is a natural conflict of interest between the hired managers and the absentee owners that arises when management makes decisions to maximise their own utility rather than to maximise ownership wealth (Jensen and Meckling 1976: 308; Berle and Means 1932: 113). With full control of the organisation vesting in management, the absentee shareholders and other stakeholders have no means of directly observing management’s actions to ensure that management is acting in the shareholders’ and stakeholders’ best interest. In such agency and stakeholder relationships, where managers are entrusted with the custody of, and the power to decide the use of resources on behalf of the absentee shareholders and other stakeholders, there exist an accountability obligation on the managers in respect of the resources entrusted to them. Further, as a result of the separation between ownership and management, the absentee shareholders and other stakeholders turn to the

auditor, as a trusted independent party, to hold management to account, thereby giving rise to the demand for auditing. (Messier et al 2010: 5; Flint 1988: 14, 15; Spicer and Pegler 1921: 3) Thus, the principal function and main purpose of an audit is to independently assure the credibility of the information contained in an organisation's financial statements and to give assurance to the shareholders and stakeholders that the financial statements prepared by the organisation's managers give a reasonable account of what happened to the organisation and its resources (Moizer 2005: xii; Spicer and Pegler 1921: 8).

Management's accountability obligation to prepare financial reports, as well as the auditor's conduct of the audit of the financial statements, is discharged within a regulatory environment. The regulatory environment encompasses the requirements, rules, standards and principles imposed by a wide range of bodies, including parliament, regulators, professional institutions, standard setters and other bodies. The regulatory environment, and the regulatory bodies comprising the regulatory environment, are important as they set not only the requirement to perform audits, but also provide the criteria for preparing the financial statements, as well as the rules regarding how the audit should be conducted. (Gray and Manson 2008: 51)

The above concept is encapsulated in International Standard on Auditing (ISA) 200.3 (IAASB 2014c), which deals with the auditor's overall responsibilities when conducting an audit, by stating that "the purpose of an audit is to enhance the degree of confidence of intended users in the financial statements." In particular, ISA 200.11(a) (IAASB 2014c) describes the auditor's overall objective and explains the nature and scope of an audit designed to enable the auditor to meet this objective, as follows:

"In conducting an audit of financial statements, the overall objective of the auditor is to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, thereby enabling the auditor to express an opinion on whether the financial

statements are prepared, in all material respects, in accordance with an applicable financial reporting framework.”

From the above it is evident that the purpose of a financial statements audit is to enhance the degree of confidence of the users in the financial statements. This is clarified to the users of the financial statements by specifying in the audit report that the auditor’s responsibility is to “plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement” (IAASB 2014q: ISA 700 Appendix). Reasonable assurance is a high level of assurance, but not an absolute level of assurance. Reasonable assurance is achieved when sufficient appropriate audit evidence has been gathered to reduce the risk of expressing an inappropriate opinion on the financial statements to an acceptably low level. (IAASB 2014c: ISA 200 par. 5) Thus, the auditor is required to obtain reasonable assurance, based on an examination of audit evidence, that the financial statements are free from material misstatement, as the basis for the audit opinion. This conveys the basic idea that an audit is an investigative process that consists of gathering and evaluating evidence, as the basis for the audit opinion. This investigative process is carried out in accordance with the audit requirements specified in the ISAs. Thus, audit evidence is indispensable to the audit as part of the accountability process in the agency and stakeholder relationships between management and the absentee shareholders and other stakeholders.

The importance of audit evidence is confirmed by the audit postulates, which are the founding propositions from which audit theory is inferred (Flint 1988: 9; Mautz and Sharaf 1961: 43). Audit evidence is one of the fundamental audit postulates, as demonstrated by both Mautz and Sharaf’s and Flint’s explicit inclusion of the audit evidence concept in their postulates: Mautz and Sharaf (1961: 50) by means of the statement that “financial statements and financial data are verifiable” and Flint (1988: 31) through the postulate that “the subject matter of auditing can be verified by evidence”. The significance of audit evidence in the audit theory and audit process is not only evident from the

encapsulation of the concept of audit evidence in the audit postulates, but also in the audit definition. For example, the American Accounting Association's (AAA) (1973: 2) *Statement of basic auditing concepts* audit definition refers to obtaining and evaluating evidence, with the definition in the International Framework for Assurance Engagements (IAASB Framework) (IAASB 2014b: Framework par. 7) referring to the evaluation or measurement of evidence. Audit evidence is the information used by the auditor to arrive at the conclusions on which the audit opinion is based (IAASB 2014a: Glossary). Therefore, without audit evidence the auditor cannot form an audit conclusion or express an opinion. Gathering and examining audit evidence is central to the overall audit objective of making an assessment and reaching a conclusion about whether the financial statements are free from material misstatement and the examination of audit evidence needs to be performed both efficiently and effectively (El-Masry and Hansen 2008: 26).

In order for the auditor to arrive at reasonable conclusions on which to base the audit opinion, the auditor needs to obtain sufficient appropriate audit evidence (IAASB 2014b: Framework par. 8; IAASB 2014i: ISA 330 par. 3). Therefore, the extent of audit testing must be sufficient to enable the auditor to assess the fair presentation of the financial statements on which he¹ is to express an opinion, based the results of the audit evidence obtained from those tests. In other words, sufficient testing should be carried out to provide evidence of the existence of any material misstatements in the financial statements and the extent of testing is dependent on the materiality concept; i.e. on the size and nature of misstatements that the auditor is willing to accept in the financial statements without qualifying his opinion (CICA 1980: 42). The concept of materiality acknowledges that some matters are important for the fair presentation of the financial statements, while other matters are not important (AICPA 2006: par. 3). The auditor is responsible for planning and performing

¹ Reference to one gender includes the other gender.

the audit to obtain reasonable assurance that material misstatements are detected and materiality establishes the basis for determining the precision required from the audit examination (IAASB 2014h: ISA 320 par. 6). It is therefore possible to deduce that in the audit context, materiality relates to the level of audit evidence required to obtain reasonable assurance that the financial statements do not contain a material misstatement. Accordingly, the auditor's judgement of materiality directly influences the determination of the extent of evidence to be collected to support the audit opinion and helps to guide the planning judgements regarding the nature, timing and extent of further audit procedures (IAASB 2014h: ISA 320 par. 6).

When the auditor expresses an opinion on whether the financial statements are free from material misstatement, there is a risk that the auditor may express an inappropriate opinion when the financial statements are in fact materially misstated (IAASB 2014c: ISA 200 par. 13). This risk is reflected in the illustrative audit report in the appendix to ISA 700 *Forming an opinion and reporting on financial statements*, which states that the audit is designed to obtain reasonable assurance about whether the financial statements are free from material misstatement (IAASB 2014q: ISA 700). The use of the term "reasonable assurance" is intended to indicate to the users that an audit cannot be expected to completely eliminate the possibility that material misstatements exist in the financial statements (Law 2008: 162). The phrase communicates that there is some risk, referred to as "audit risk", that the financial statements are materially misstated even when the opinion is unqualified (IAASB 2014c: ISA 200 par. 5).

The risks of material misstatement form the theoretical starting point for designing further audit procedures (Fogarty, Graham and Schubert 2006: 49). The auditor must assess the risks of material misstatement and must respond to the assessed risks by designing and performing audit procedures whose nature, timing and extent are based on these risks in order to reduce the audit risk to an acceptable level (IAASB 2014c: ISA 200 par. 7). Thus, in planning

and executing the audit, the auditor should focus on those areas of the financial statements where the risk of misstatement is the greatest (Fogarty et al 2006: 43) and there should be a clear linkage between the nature, timing and extent of the audit procedures and the assessed risks of material misstatement.

The risk assessment process is therefore not just a planning tool, but an integral part of evidence gathering, as it directs the auditor's attention to issues that require further investigation. This risk-based approach provides a vehicle for integrating the auditor's risk assessment, carried out in the planning phase of the audit, and formalising its link with the scope of audit testing that follows. Thus, the risk-based approach allows for the auditor's assessment of risks to determine the nature, timing and extent of audit procedures necessary to obtain sufficient appropriate audit evidence in the most efficient and effective way. This evidence enables the auditor to express an opinion on the financial statements at an acceptably low level of audit risk. (IAASB 2014c: ISA 200 par. A36)

1.2 JUSTIFICATION AND SIGNIFICANCE

Risk assessment and audit evidence planning are integrated processes and the auditor's assessment of risks informs the audit evidence gathering decisions regarding the nature, timing and extent of the audit procedures that are necessary to obtain sufficient appropriate audit evidence on which to base the audit opinion. The audit evidence gathering process involves obtaining assurance from a range of sources in varying quantities and using different types and combinations of audit procedures (tests of controls, substantive analytical procedures and tests of details). (IAASB 2014i: ISA 330 par. 6) Despite the importance of audit evidence planning considerations, the studies that have been conducted in this area did not show a clear correlation between evidence planning and extent of testing and the level of, or changes in risks (e.g. Seidel 2014: 44; De Martinis, Fukukawa and Mock 2011: 546; Luo 2011: 71; Hogan and Wilkins 2008: 238; Fukukawa, Mock and Wright 2006: 41; Elder

and Allen 2003: 1000; Johnstone and Bedard 2001: 199), nor did they answer the question of how to combine or aggregate evidence from different sources (e.g. Knechel 2007: 390; Turley and Cooper 1991: 27; Srinidhi and Vasarhelyi 1986: 64) in order to reach a final audit opinion.

In addition, the ISAs lack practical implementation principles to assist the auditor in deciding the extent of further audit procedures that should be carried out to obtain sufficient appropriate audit evidence in order to get reasonable assurance on the fair presentation of the financial statements before issuing an audit opinion thereon. ISA 200 (IAASB 2014c: par. A36) acknowledges that various approaches may be used to accomplish the audit evidence planning decisions and judgements and specifically states the following in this regard:

“... the auditor may make use of a model that expresses the general relationship of the components of audit risk in mathematical terms ... Some auditors find such a model to be useful when planning audit procedures.”

The above statement in ISA 200 (IAASB 2014c) provides the auditor with some direction as to a possible approach that will result in an acceptable level of audit assurance. However, the auditing standards are silent on how to design such a mathematical approach and provide no further guidance on how to implement such a quantitative model. The auditor has been left to his own judgement to decide how to relate the risk assessment to the evidence planning decisions and without a method to bring together the audit test results in a way that can be used in the decision-making process.

Although audit decision-making cannot be reduced to the mechanical application of a quantitative model and will always require the application of considerable judgement, studies have suggested that decision models that aid the auditor in exercising complex, multi-dimensional evidence planning judgements may improve audit efficiency and effectiveness (e.g. Curtis and Turley 2007: 459; Jeppesen 2007: 590; Knechel 2007: 389; Nelson, Tan and

Trotman 2005: 53; Bedard and Graham 2002: 41). Further, many audit firms have revised their audit methodologies towards greater structure and formalisation in order to recognise the audit as an integrated process (e.g. Charles, Glover and Sharp 2010: 19; Curtis and Turley 2007: 441 - 444; Smith, Fiedler, Brown and Kestel 2001: 40).

Based on the above, there is a need for a formal and definitive decision approach on the determination of the extent of testing in the form of an integrated audit evidence planning model that provides guidance to the auditor on formulating the audit plan and performing the audit. Such an audit evidence model should be adaptive rather than rigid and should provide a framework for the auditor to exercise professional judgement.

1.3 RESEARCH OBJECTIVES

Based on the above, the overall objective of this study is to develop an integrated audit evidence planning model to quantify the extent of audit evidence. More specifically, the overall objective of this study is to develop an integrated audit evidence planning model that meets the following secondary objectives:

- *Secondary objective 1:* The model expresses in quantitative terms the extent of audit evidence needed by the auditor to obtain sufficient audit evidence to arrive at the conclusions on which the audit opinion is based.
- *Secondary objective 2:* The model quantitatively relates and integrates the extent of audit evidence in a logical and structured manner with the auditor's risk assessment and the required overall level of assurance needed to support the audit opinion.
- *Secondary objective 3:* The model formulates a quantitative inter-relationship between the extent, combination and aggregation of tests of

controls, substantive analytical procedures and tests of details performed by the auditor to obtain reasonable assurance at the required overall level of assurance.

- *Secondary objective 4:* The model provides a framework for influencing and guiding the flexible exercise of professional judgement by the auditor, thereby assisting in achieving better consistency in the manner in which audit staff apply their professional judgement across a particular audit firm.
- *Secondary objective 5:* The model is a practical and effective tool to benefit the users thereof when conducting an audit, thereby removing some of the uncertainty and guesswork from the audit process.
- *Secondary objective 6:* The model adheres to the requirements in the ISAs.

1.4 THESIS STATEMENT

It is hypothesised that the extent of audit evidence can be quantified in an integrated audit evidence planning model that provides a framework for the flexible exercise of judgement, by taking into account the inter-relationship between the extent and aggregation of tests of controls, substantive analytical procedures and tests of details, and quantitatively relating and integrating the extent of audit evidence in a logical and structured manner with the auditor's risk assessment and the overall level of assurance needed to draw conclusions about whether the financial statements are free from material misstatement and thereby enabling the auditor to express an opinion on the financial statements.

1.5 DELINEATIONS AND LIMITATIONS

The audit process can generally be divided into three broad phases; a risk assessment phase, a risk response phase and an evaluation and reporting phase (IFAC 2011a: 18). This study deals with the development of an integrated audit evidence planning model. It is therefore concerned with the risk response phase of the audit and more specifically with the quantification of the extent and aggregation of tests of controls, substantive analytical procedures and tests of details, in response to the assessed risk at assertion level. The model does not consider the risk assessment or evaluation and reporting phases of the audit and it is set at the point in time after the assessment of risk at the relevant class of transactions, account balance, disclosure and assertion level. However, it is acknowledged that there is a direct inter-connection between the three phases and that the one informs the other and the model uses the risk assessment as input to inform the evidence planning process. The integrated audit evidence planning model therefore directly relates and integrates the audit evidence judgements with the auditor's risk assessment.

The auditor is required to assess the risks of material misstatement at both an overall financial statement level and at the assertion level (IAASB 2014i: ISA 330 par. 5, 6). The focus of the model developed in this study is at the class of transactions, account balance, disclosure and assertion level and not at the overall financial statement level.

ISA 330 (IAASB 2014i: par. 6) requires the auditor to consider the nature, timing and extent of audit evidence when the auditor designs and performs audit procedures in response to the assessed risks. The integrated audit evidence planning model that is the outcome of this study is specifically concerned with quantifying the *extent* or *sufficiency* of audit evidence required that will enable the auditor to express an opinion on the financial statements. This study does not research the nature and timing of audit procedures, but considers the impact of the nature and timing of audit procedures on the extent of audit

evidence, as it is manifested in the integrated audit evidence planning model. Thus, the model limits the consideration of the nature and timing of audit procedures only to the degree that they impact on the auditor's decisions regarding the extent of audit evidence.

In order for the auditor to arrive at reasonable conclusions on which to base the audit opinion, the auditor needs to obtain both sufficient and appropriate audit evidence (IAASB 2014c: ISA 200 par. 17). Sufficiency is a measure of the quantity of audit evidence, with appropriateness being a measure of the quality of audit evidence (IAASB 2014a: Glossary). This study is specifically concerned with the *quantity (sufficiency)* of evidence, which relates directly to the *extent* of the audit procedures that the auditor determines must be executed, as a basis for the audit opinion.

ISA 330 (IAASB 2014i: par. 12, 22) allows the auditor to obtain audit evidence from both tests of controls and substantive procedures at an interim date. The integrated audit evidence planning model derived in this study does not specifically consider the impact of performing interim audit procedures.

ISA 330 (IAASB 2014i: par. 13) provides for the use of audit evidence about the operating effectiveness of controls obtained in previous audits as part of the extent of audit evidence required in the current year. The integrated audit evidence planning model developed in this study does not consider this allowance, as controls generally do not remain unchanged over a three-year cycle, which is a prerequisite in ISA 330 (IAASB 2014i: par. 14(b)) for applying a multi-year tests of controls approach. As a further premise, new and recurring audits are similarly considered.

The ISAs contain a number of standards that set out additional requirements for obtaining audit evidence on specific topics; for example, external confirmations (IAASB 2014m: ISA 505), accounting estimates (IAASB 2014p: ISA 540), inventory (IAASB 2014l: ISA 501), etc. This study does not consider these specific topics in the integrated audit evidence planning model.

ISA 530 (IAASB 2014o: par. A4) allows the auditor to use both statistical and non-statistical sampling when performing tests of controls and tests of details. The integrated audit evidence planning model developed in this study is based on non-statistical principles.

1.6 CHAPTER OUTLINE

The remainder of this study is set out in the following chapters:

- Chapter 2: Audit as part of the accountability process

This chapter locates the study within the theory of audit by contextualising the study with reference to those principles and concepts fundamental to the study. The chapter explores the demand and need for auditing through an understanding of the modern organisation and the agency and stakeholder theories that describe the relationship between the managers and owners, as well as the wider stakeholder accountability environment. Against this background the fundamental principles and concepts of audit theory are then examined through consideration of the audit postulates and the audit definition. The chapter concludes with a discussion on the South African regulatory environment within which the audit is performed.

- Chapter 3: Audit evidence

As a central and fundamental concept to this study, audit evidence is discussed in more detail in chapter 3. The definition, including the nature, timing and extent, as well as the sufficiency and appropriateness of audit evidence, is explored, together with the efficient and effective gathering of audit evidence. Thereafter, materiality and its relationship with audit evidence are considered. This is followed by a discussion on the role that risk plays in the audit process, with emphasis on the risk-based audit and the audit risk model, and the interaction thereof with the nature, timing and

extent of audit evidence. To conclude, the chapter makes a case for modelling audit evidence by grounding the study in the relevant literature, as it refers to the aggregation of different types of evidence, the linkage between the risk assessment and the extent of evidence, and the use of structured decision models for the application of professional judgement regarding the gathering of audit evidence.

- Chapter 4: Research methodology

Chapter 4 describes the research approach applied in this study. The chapter briefly touches on the concepts of research, methodology vs. method, as well as the broad underlying research principles of qualitative vs. quantitative and inductive vs. deductive research, as they relate to this study. Thereafter it is explained that this study employs a combination of three research approaches in order to meet the overall objective of the study, which is to develop an integrated audit evidence planning model to quantify the extent of audit evidence. The literature review performed to obtain an understanding of the related concepts, principles and theories, is explained. This is followed by an examination of the grounded theory approach to theory and model building, together with model visualisation, that is used to develop the integrated audit evidence planning model. Thereafter, the last approach, evaluation research, is considered in line with its application in evaluating the integrated audit evidence planning model for adherence to the ISAs. The chapter is concluded with reference to the ethical considerations pertaining to the use of the author's Auditor-General of South Africa (AGSA) work for purposes of this study.

- Chapter 5: Development of the integrated audit evidence planning model

This chapter forms the focus of the study, as the objective of this study, to develop an integrated audit evidence planning model to quantify the extent of audit evidence, is executed in this chapter. The model is built through a stepwise process. The chapter starts by investigating the inter-relationship

between the different types of audit evidence that leads to various audit evidence gathering approaches and culminates in the deduction of the audit evidence mix matrix. Thereafter audit evidence is explored in relation to audit risk by setting quantitative overall levels of assurance and relating the overall levels of assurance to quantitative levels of assurance from different types of audit evidence. Next the chapter integrates the previous discussions to deduce a schematic illustration of the integrated audit evidence planning model. The chapter continues with a refinement of the model by quantitatively relating the various levels of assurance and the different combinations and types of audit evidence to the extent of further audit procedures; i.e. tests of controls, substantive analytical procedures and tests of details. The compensatory inter-related impact of the integrated audit evidence planning model on the extent of further audit procedures is then demonstrated through a quantitative link to precision intervals for substantive analytical procedures and sample sizes for tests of controls and tests of details. This is followed by a reflection on the use of judgement in the application of the integrated audit evidence planning model. The chapter ends by considering the model as a practical tool for adherence to the ISAs through the Independent Regulatory Board for Auditors' (IRBA) practice review of the AGSA, which resulted from the integrated audit evidence planning model having been applied in practice though incorporation into the AGSA's audit methodology.

- Chapter 6: Conclusion

The last chapter summarises the results of this study. Based on the final results, the chapter then discusses the contributions and benefits of the integrated audit evidence planning model developed in this study in line with the thesis statement and research objectives set out in chapter 1. This is followed by an indication of suggested areas for future research from both a theoretical and practical perspective; where after a final conclusion of the study is provided.

1.7 CONCLUSION

This chapter introduced the study by providing background and context relevant to the development of the integrated audit evidence planning model by briefly exploring the concept of audit evidence. The importance of audit evidence in the audit process was looked at in relation to the need for an audit and the audit postulates. The background was extended through a short discussion on the extent of audit evidence, referring to the relevant concepts of materiality, risk and reasonable assurance.

The study was justified and its significance indicated with reference to both the ISAs and the related literature. The ISAs lack practical implementation guidance as to how the auditor should decide on the extent of audit evidence; with the relevant literature demonstrating a deficient correlation between the extent of audit evidence and the level of risk and assurance, as well as inadequate aggregation of audit evidence. Based on the above, the need for a formal and definitive decision approach to the quantification of the extent of audit evidence, in the form of an integrated audit evidence planning model that allows for the application of the auditor's professional judgement, was motivated.

In light of the background discussion and the considerations on the justification of the study, research objectives and a thesis statement were formulated relating to the overall objective of this study, which is to develop an integrated audit evidence planning model to quantify the extent of audit evidence. This was supported with an outline of the delineations and limitations applicable to the study.

The next two chapters provide an overview of the pertinent literature to contextualise the study. The first of the two literature review chapters highlights the principles of audit theory that are central to the concept of audit evidence, which is the focus of this study.

CHAPTER 2: AUDIT AS PART OF THE ACCOUNTABILITY PROCESS

2.1 INTRODUCTION

The previous chapter introduced this study through a short discussion on the theoretical underpinning, as well as the justification and significance of the study. This led to the formulation of the research objectives and thesis statement, which were supported by an outline of the delineations and limitations applicable to the study.

Organisations in the modern business environment are to a large extent characterised by a separation between ownership; which in law is vested in the hands of dispersed absentee owners, and the owners' right to exercise control has effectively been taken over by management. In these situations where managers are entrusted with the custody of, and the power to decide the use of resources on behalf of the owners, there exists an accountability obligation on the managers in respect of such resources entrusted to them. The audit function expresses a conclusion designed to enhance the degree of confidence of the resource owners that the accounts provided by management in the financial reports fairly present management's custody and use of the owners' resources.

In this chapter the demand and need for auditing is explained through an understanding of the modern organisation and the agency theory that describes the relationship between managers and owners within such an environment. This is followed by a discussion of the audit postulates, which serves as the theoretical foundation for the subsequent section on the audit definition. The audit function is then placed within the wider stakeholder environment with reference to the stakeholder theory, explaining that its need and value extends beyond the relationship between the beneficial owners and the managers of the organisation to all parties who are affected by the actions of the organisation.

The chapter is concluded with a section on the regulatory environment within which the financial reports are prepared and the auditing thereof is conducted.

This chapter provides the context for the separate discussion in the next chapter on the fundamental concept of audit evidence; it is not intended as a complete or exhaustive discussion on the theory of auditing, but highlights those principles and concepts fundamental to this study.

2.2 THE NEED FOR AN AUDIT

The demand and need for auditing is sketched out in the following sections along discussions firstly, on the development of the modern organisation and secondly, on the so called agency and stakeholder theories developed to describe the relationship between managers, owners and other stakeholders within the organisation. An understanding of the nature of the modern organisation, and the application of the agency and stakeholder theories to the conflict of interest that exists within the organisation between the absentee shareholders and stakeholders on the one hand, and the managers appointed to act on their behalf on the other hand, explain and justify the need for the existence of an audit.

2.2.1 Development of the modern organisation

In ancient times, accounting took place orally; a servant or steward in charge of livestock, goods and other forms of wealth would, from time to time, tell his master what he had done to protect and develop the wealth entrusted to him and the master would listen to such oral accounts of stewardship (Whittington and Pany 2010: 8). Until the 15th century businesses were mainly run by their owners. However, the increase in volume of operations resulting from the impetus given to trade and commerce by the Renaissance in Italy resulted in

the average owner-trader requiring more capital than was generally at his disposal. This need for greater capital induced owner-traders to combine in partnership with others for the purpose of obtaining the requisite capital thus leading to the first step in the evolution of a modern organisation. (Spicer and Pegler 1921: 3) The increase in trade and commerce during the Renaissance was also an important factor in the development of a better system of accounts. It led to the birth of modern accounting through the evolution of the principle of double entry that was first published in 1494 in Venice by Luca Paciolo. Consequently, it became possible to record not only cash transactions, but to record completely all kinds of commercial and business transactions. (Spicer and Pegler 1921: 3)

Until the late 18th and early 19th centuries, most organisations and businesses remained relatively small and generally continued to be both owned and managed by the same individual or group of individuals (Godfrey, Hodgson, Hamilton and Holmes 2010: 362; Messier et al 2010: 5). The birth of the modern organisation resulted from the enormous increase in trade and industry that occurred during the 19th century industrial revolution, which was promoted by the discovery of steam power and the mechanisation of industry (Messier et al 2010: 5; Spicer and Pegler 1921: 3). The resulting impact was that organisations became larger and needed to raise capital to finance their expansion, which, over time, led to the development of securities markets and public companies. Capital markets allow public companies to sell small pieces of ownership (i.e. shares) or to borrow money in the form of thousands of small loans (i.e. bonds) in order to raise vast amounts of capital from a wide variety of investors and creditors, giving the public an interest and/or ownership in the company. (Messier et al 2010: 5; Spicer and Pegler 1921: 3)

Over the last 100 years this trend of public ownership of organisations has continued as organisations developed into the large modern organisations we know today and as organisations grew in size their owners increasingly began to use the services of professional managers (Godfrey et al 2010: 362;

Whittington and Pany 2010: 8). Thus, the growth of the modern organisation led to divergence between the owners (shareholders and investors), who are not directly involved in the running of the business, and the use of professional managers hired by the owners to manage the large sums of capital raised on the securities markets and to run the organisation on a day-to-day basis (Messier et al 2010: 5; Spicer and Pegler 1921: 3).

In the scenario discussed in the previous paragraph, the managers serve as agents for the owners (referred to as principals) and fulfil a stewardship function by managing the organisation's resources. It is referred to as the agency theory and is discussed further in the next section of this chapter. The capital raised from investors and creditors on securities markets give the public a valid interest in the proper use of, and stewardship over the company's resources. With the separation between ownership and management the advantages to be obtained from the audit function also became apparent to the general commercial public and the absentee owners turned increasingly to the auditor, as a trusted independent party, to hold management to account, thus giving rise to the demand for auditing. (Messier et al 2010: 5; Spicer and Pegler 1921: 3)

The separation of ownership and management control was first explicitly described and analysed in depth by Berle and Means (1932) in their study on the development of the modern corporation and private property (Sherer and Kent 1983: 2; Lerner 1970: 4). Berle and Means (1932: 112) observed that in the process of corporate evolution a division developed in the functions previously associated with ownership. They (Berle and Means 1932: 112) distinguished between three functions with respect to the modern organisation: that of having interests in an enterprise; that of having power over it and that of acting with respect to it. Before the industrial revolution the owner performed all three functions, but in the modern organisation a division occurred; with the owner now fulfilling the first function and the latter two mostly being performed by a separate group, the hired managers. Berle and Means (1932: 113) concluded that in the modern organisation the second function, that of having

power over an enterprise, has become separated from that of ownership. Thus, there is a distinction between the interests of ownership and the powers of control, with the position of the owner having been reduced to a legal interest in the enterprise and control of the organisation resting with the hired managers. In Berle and Means' (1932: 69) own words:

“As the ownership of corporate wealth has become more and more dispersed, ownership of that wealth and control over it have come to lie less in the same hands. Under the corporate system, control over industrial wealth can be and is being exercised with a minimum of ownership interest. Ownership of wealth without appreciable control and control without appreciable ownership appear to be the logical outcome of corporate development.”

Berle and Means' hypothesis was tested by a 1970 study undertaken by Larner (1970) to measure the extent of the separation of ownership and control in large American corporations at that time. The results of the study indicated that management control was the typical form of corporate control among the 500 largest non-financial American corporations (Larner 1970: 63). Larner (1970: 66) concluded that at that time control was separated from ownership in most of America's largest corporations. This finding is supported by Fama and Jensen's (1983: 301) study in which they argued that in the modern organisation the decision agents, the managers, do not bear a substantial share of the wealth effects of their decisions and that this separation between decision making by managers and risk-bearing by owners that is observed in large organisations, is common. Jensen and Meckling (1976: 311) further advanced Berle and Means' theory by viewing the organisation as the nexus of a set of contracting relationships among individuals. They (Jensen and Meckling 1976: 308) proposed that since rights are generally specified and effected through contracting (implicit or explicit), the behaviour of individuals in organisations, including the behaviour of managers, depends upon the nature of these contracts. Jensen and Meckling (1976: 311) concluded that “the firm is a legal

fiction which serves as a focus for a complex process in which the conflicting objectives of individuals are brought into equilibrium within a framework of contractual relations.”

Based on the above discussion of Berle and Means', Larner's and Fama and Jensen's observations and conclusions, it can be deduced that ownership and control have become separated to an important extent in the modern organisation and that the right to exercise control, which in law is vested in the hands of dispersed absentee owners, has effectively been taken over by management.

With the concentration of power and control of the modern organisation in management, they may have incentives to allocate the organisation's resources in ways that are not necessarily consistent with the interest of the non-managerial owners (Moizer 2005: 293). However, in a democratic society management's power cannot be absolute. In exercising this control, management must be accountable and some system of examination must be operated to monitor the quality of their reporting on accountability. (Moizer 2005: 293; Spicer and Pegler 1921: 3) This leads to the need for auditing, which is a critical function in promoting accountability. (Refer to section 2.4.)

Berle and Means (1932: 345 - 351) further argued that the separation of ownership and control makes the concepts and analytical tools of traditional economic theory obsolete in the study of large management controlled organisations and a new theory is required to adequately explain the behaviour of the modern organisation. Such a theory, the so called agency theory, which has been used by accounting and economic scholars to study the modern organisation (Messier et al 2010: 5, 6; Droege and Spiller 2009: 45; Gray and Manson 2008: 9; Schroeder and Clark 1995: 65; Adams 1994: 8; Eisenhardt 1989: 57), is discussed in the next section of this chapter.

2.2.2 Agency theory

In his book on theories of organisation Tosi (2009: 7) defined a theory as “an invented, abstract way to describe reality by defining a set of systematic interrelated concepts, definitions, and propositions ... that characterise the reality that is the subject of the theory.” Thus, a theory is a way of understanding and organising reality that assists in communicating meaningfully about some phenomenon and a good theory can be used to explain behaviour and to predict what will occur under different conditions (Tosi 2009: 9).

As discussed in the previous section and first described by Berle and Means (1932), organisations are characterised by a separation between ownership and control, with the right to exercise control over the organisation having moved from the absentee owners to the hired managers. The agency theory, the development of which is generally credited to Jensen and Meckling (1976: 305 - 360), has been widely used in the accounting and auditing literature in an attempt to introduce a set of well-developed concepts to explain this inter-relationship in organisations between the owners and managers and to justify the need for auditing (Messier et al 2010: 5, 6; Droege and Spiller 2009: 45; Gray and Manson 2008: 9; Schroeder and Clark 1995: 65; Adams 1994: 8; Eisenhardt 1989: 57 - 74; Fama and Jensen 1983: 302; Sherer and Kent 1983: 2; Tiessen and Waterhouse 1983: 254; Watts 1977: 55 - 58).

Jensen and Meckling (1976: 308) defined an agency relationship in general terms as “a contract under which one party (the principal) engages another party (the agent) to perform some service on their behalf that involves delegating some decision-making authority to the agent”. In an agency relationship the principal entrusts his welfare and delegates his decision-making authority to the agent who makes decisions and takes actions on the principal’s behalf (Godfrey et al 2010: 362; Tiessen and Waterhouse 1983: 254; Jensen and Meckling 1976: 308). Therefore, the agency theory can, in general terms, be described as concentrating on the relationship in which the welfare of the

interests of one person, the principal, is entrusted to and dependent on another, the agent (Godfrey et al 2010: 56; Droege and Spiller 2009: 45). The agency theory can be applied to understand the inter-relationships within the organisation; it is possible to hypothesise that the organisation consists of a nexus of contracts between the owners of economic resources (the principals) and the managers (the agents) who are charged with using and controlling those resources on behalf of the owners (Adams 1994: 8).

Having identified the separation within the organisation between ownership without appreciable control and control without appreciable ownership, Berle and Means (1932: 113) questioned how the relationship between the ownership-group and the control-group can be expected to affect the conduct of the enterprise. They argued that the traditional owner, who controlled his own enterprise, operated the business in his own interest to strive to maximise the business' profits, as such profits accrued directly to him as personal income (Larner 1970: 5; Berle and Means 1932: 113).

Berle and Means (1932: 113) however, questioned whether it is justified to assume that the managers in control of the organisation will also choose to operate it in the interest of the owners in light of the fact that they have no legal claim to the organisation's profits, which accrue entirely to the owners as dividends and capital gains. Yet despite this, managers are responsible for the decisions that play a major role in determining the extent of the organisation's profits (Larner 1970: 5). The extent to which the managers will operate the organisation in the interest of the owners is dependent on whether their interests run parallel to those of the owners. Agency theory assumes that both principals and agents act rationally and that both parties will use the relationship to maximise their own self-interest and personal benefit. (Adams 1994: 8; Eisenhardt 1989: 58; Tiessen and Waterhouse 1983: 254; Jensen and Meckling 1976: 308; Berle and Means 1932: 114)

The above assumption can be questioned because the goals of the principals and agents do not always coincide; the actions that maximise the managers' expected utilities do not necessarily maximise the owners' expected utilities and this is a valid reason to believe that the agent will not always act in the best interests of the principal (Watts 1977: 55; Jensen and Meckling 1976: 308). Consequently, there is a natural conflict of interest between the managers and the absentee owners that arises when decisions made by managers to maximise their own utility do not maximise ownership wealth (Messier et al 2010: 5; Schroeder and Clark 1995: 65; Eisenhardt 1989: 58; Jensen and Meckling 1976: 308; Lerner 1970: 2). This means that because the agent-managers have self-seeking motives driven from a desire for personal monetary gain, they are likely to take the opportunity to act against the interests of the owners of the organisation (Adams 1994: 8; Berle and Means 1932: 115). The problem that arises out of the conflict between the desires and goals of the principal and those of the agent is that the principal cannot easily verify that the agent has behaved appropriately, which leads to the concept of agency costs.

Jensen and Meckling (1976: 308) argued that the organisation will continue to function only if the conflicting interests of the owners and managers are held in equilibrium; i.e. when neither party can enhance their wealth at the expense of the other. In order to maintain this equilibrium, both parties tacitly undertake to bear costs (Adams 1994: 8). The principal-owners incur monitoring costs to control the agent-managers' behaviour in order for the agent to take actions that will maximise the welfare of the principal; for example, costs of measuring and observing the agent's behaviour by subjecting financial statements to audit and costs of establishing compensation policies (Adams 1994: 8; Watts 1977: 56; Jensen and Meckling 1976: 308).

The agent-managers on the other hand incur bonding costs to guarantee that they are acting responsibly and that they are not taking actions that will harm the principal or to ensure that the principal will be compensated if they do take such actions. The managers therefore restrain their demands at a level below

the point at which the owners will lose their tolerance and replace them. Bonding cost examples include the costs for managers to periodically report on how well they have managed the owners' resources and costs of internal audit. (Messier et al 2010: 6; Adams 1994: 8; Sherer and Kent 1983: 2; Jensen and Meckling 1976: 308) Jensen and Meckling's (1976: 306) agency theory therefore helps to explain why organisations would voluntarily provide accounting reports. Of course, a set of criteria or agreed upon accounting principles is necessary to govern the form and content of the managers' accounting reports to the owners (Messier et al 2010: 6). (The accounting requirements are part of the regulatory environment, which is dealt with in section 2.5.)

However, reporting against an agreed upon set of accounting principles does not by itself solve the problem of the managers' and owners' conflicting interests. Where agent-managers are entrusted with the custody of, and the power to decide the use of resources on behalf of the principal-owners, the agents have an obligation to be accountable to the principals who entrust resources to them. This obligation is generally discharged in two ways; firstly by providing financial reports on the custody and use of the owners' resources, and secondly by submitting these reports to an examination or audit, on behalf of the owners. (Spicer and Pegler 1921: 1) The impact of the agency theory on the need for an audit is explored in section 2.2.4.

2.2.3 Stakeholder theory

As discussed in the previous section, agency theory is primarily concerned with the relationship between management (agent) and shareholders (principal), that arose from the original work by Berle and Means (1932: 112 - 116) on the separation of ownership, which is vested in shareholders, from the power or control that is entrusted to management that exists in organisations.

Agency theory postulates that the interests of shareholders and managers are at odds and focusses on resolving the conflict of interest (agency problem) between management and shareholders. The agency problem revolves around the rights and responsibilities between these principal participants to align their interests. Thus, agency theory provides for the relationship between the main parties to be bound through a nexus of contractual obligations. (Jensen and Meckling, 1976: 305 - 360) Built into this contractual relationship is the assumed utility maximising nature of management as the agent and the on-going need to align management's interest with those of the principal by holding management accountable to their shareholders (Christopher 2010: 684, 692). Therefore, under the agency theory, the consideration of the economic relationships is limited to a series of contracts between management and shareholders.

However, it has been suggested that agency theory is too narrow, as it provides an incomplete view of and fails to explain the implicit and explicit contractual relationships that exist between the organisation and the wider stakeholder environment (Hill and Jones 1992: 131). Management has direct control over the decision-making apparatus of the organisation and is therefore the only group that can enter into contractual relationships with all other stakeholders, including employees, customers, suppliers, creditors, communities and society in general (Collier 2008: 937). This unique role of managers, as the agents of not only the shareholders, but also of other stakeholders, should be recognised. Consequently, the argument is that agency theory does not reflect and recognise this wider stakeholder base, the wider dimensions of environmental influencing forces and the consequentially wider set of contractual obligations and accountability processes. The concern is further that agency theory does not reflect the full range and true impact of the relationships and complexities associated with organisations and changing markets within which they operate. (Christopher 2010: 683, 685, 692) These wider accountability processes associated with the recognition of wider responsibilities to other stakeholders should be considered.

The limitations of agency theory have also been linked to the spate of well-publicised corporate scandals and the current global financial crisis. Both of these crises of trust illustrate that managerial actions have the potential to affect a broad range of stakeholders worldwide. Additionally, they highlight that the actions of unexpected groups and individuals can easily disrupt the pursuit of corporate objectives. (Parmar, Freeman, Harrison, Wicks, Purnell and De Colle 2010: 404) These crises also emphasise that the modern world in which organisations operate is extremely complex and that organisations are a part of a network of inter-relationships (Demers and Wayland 1982: 42). Davis (1976: 16) explained that “the economic activities in the social system are so related to everything else in the system that business must operate with social responsibility towards all those that it affects. Business cannot compartmentalise itself ... because its activities are too intermingled with all of society”. It is argued that in this inter-related environment, the traditional view that managers are accountable only to their shareholders, no longer holds true and managers have a responsibility to consider the impact of their decisions on the wellbeing of all groups and stakeholders within the network (Porter 2009: 159). The wider influencing forces impacting on organisations are attributable to the changing environment in which organisations operate (Christopher 2010: 687). As society’s values and the business environment change over time and as organisations grow in size and extend their power and influence in society, so changes occur in the extent of the accountability required of their managers (Porter 2009: 158). The enormous impact of corporates and the power they wield in society force them to accept responsibility and be accountable to the public (Porter 2009: 162). There is thus a demand for wider responsibility and accountability from management and the organisation for their actions as a result of the consequential impact of organisations on society and the economies of nations (Christopher 2010: 688).

In response to the financial corporate scandals and global crisis, there has been a change in emphasis away from the traditional shareholder orientated theory

towards a broader stakeholder theory that incorporates non-shareholder stakeholders and integrates the interests of all stakeholders (Brennan and Solomon 2008: 890; Collier 2008: 933). Accountability to shareholders can no longer be the sole aim and objective of the organisation; with accountability to stakeholders and responsibility to society in general being a key ingredient to business success (Brennan and Solomon 2008: 899). Essentially management's role is changing to trusteeship for a wider range of stakeholders. Society commits social and economic resources to management with the expectation that management will use them wisely to produce just outputs for all of society rather than solely for the owners. Thus, there is increased pressure on organisations to respond to an ever widening group of stakeholders. (Davis 1976: 17) This broader view of accountability results from the fact that the survival and growth of companies depend, not only on the financial resources of shareholders, but on the joint contribution of all stakeholders. It goes beyond the organisation and includes accountability to all those whose well-being is affected by management's decisions and actions; that is, to society in general. (Porter 2009: 159)

The factors and challenges discussed above, driven by change and interconnectedness, reveal a need to rethink the traditional ways of conceptualising the responsibilities of the organisation. There is a growing realisation that organisations have an impact on a constantly expanding number of stakeholders in society. (Brennan and Solomon 2008: 892) Over the last 30 to 40 years, stakeholder theory has emerged as a new narrative to facilitate the understanding of the complexities of today's business challenges. (Parmar et al 2010: 404). More specifically, Brennan and Solomon (2008: 892) found that in the accounting field, there has been a broadening view towards greater stakeholder inclusivity, again reflecting a shift away from the dominance of agency theory towards a more stakeholder-oriented theory. Thus, the "accountable to society in general" viewpoint has gained momentum as an

extension of the agency theory, particularly since the publication of Freeman's (1984) landmark book *Strategic management: A stakeholder approach*.

Freeman (1984: 1) suggested that "current approaches to understanding the business environment fail to take account of a wide range of groups who can affect or are affected by the corporation, its stakeholders." In order to manage effectively in the turbulent times that typify the dynamic nature of the business environment of today, stakeholder theory offers a way to address the ever changing demands from different groups that have legitimate interests of varying degrees in the organisation (Elijido-Ten 2007: 164). As stated by Freeman, Wicks and Parmar (2004: 364), stakeholder theory assumes that organisations have the ability to influence not just society in general, but its various stakeholders in particular. The theory begins with the assumption that value is necessarily and explicitly a part of doing business and whatever the ultimate aim of the organisation, managers must take into account the legitimate interests of those groups and individuals who can affect or can be affected by their activities (Freeman et al 2004: 365). Freeman (1984: 46) therefore defined a stakeholder as "any group or individual who can affect or is affected by the achievement of the organization's objectives" and further clarified that a stakeholder represents a "group that the firm needs in order to exist". Stakeholders can be classified as primary stakeholders, being those who have a direct and contractual relationship with the organisation (e.g. customers, suppliers, employees, financiers, etc.) whereas secondary stakeholders are situated at the periphery of the organisation, but may still be impacted by its actions (e.g. communities and society at large) (Collier 2008: 936). The word "stakeholder," is therefore meant to challenge the notion that shareholders are the only group to whom management needs to be responsive (Parmar et al 2010: 405) and Phillips, Freeman and Wicks (2003: 481) clarified that managing for stakeholders involves attention to more than simply maximising shareholder wealth; attention to the interests and well-being of those who can assist or

hinder the achievement of the organisation's objectives is the central concept of stakeholder theory.

Stakeholder theory introduces the concept of multiple stakeholders and multiple objectives to a principal-agent relationship. It extends the central idea in agency theory of conflicting interests between the agent and shareholders to include the divergent interests between the agent and multiple stakeholders. Both stakeholder-agent and principal-agent relationships are included and their divergent interests reconciled. (Christopher 2010: 688) Stakeholder theory therefore sees the organisation as a nexus of contracts between all stakeholders, not just between the organisation and its shareholders, as is the case in agency theory (Collier 2008: 951). The concern in stakeholder theory is how the power of stakeholders with competing interests is managed by the organisation in terms of its broader accountabilities. The basic proposition is that the organisation's success is dependent upon the successful management of all the relationships the organisation has with its stakeholders. When viewed as such, the conventional view that the success of the organisation is dependent solely upon maximising shareholders' wealth is not sufficient because the organisation is a nexus of explicit and implicit contracts between the organisation and its various stakeholders. The role for management is to find an appropriate balance between the divergent stakeholder interests when directing the organisation's activities so that one stakeholder group is not satisfied to the detriment of others. (Collier 2008: 936; Elijido-Ten 2007: 165)

In conclusion, stakeholder theory embraces the core concept of balancing the interests of a broad group of stakeholders (Parmar et al 2010: 419). In light of the growing concern by society, given the increased number of corporate scandals and the current global financial crises, with its consequential impact on the world economy and society, stakeholder theory offers a more inclusive theory than agency theory (Christopher 2010: 688). Thus, stakeholder theory offers organisations a way of identifying and reconciling the disparate interests

of a broader stakeholder group by recognising its obligations for wider accountability.

As organisations' accountability has been extended, so too has the need to ensure that they satisfactorily discharge that responsibility. With the flow of financial and other resources to organisations, these organisations have been able to grow to an unprecedented size and multi-national companies are now commonplace. These organisations have gained power and influence in society as a result of the vast quantities of financial and other resources that they command, enabling them to impact the lives and well-being of millions of people to a greater or lesser extent. (Porter 2009: 178) Today, the managers of large public companies are considered to be accountable and responsible to society as a whole for a wide range of corporate activities because of the power they wield in society. The enormous impact of corporate entities renders them accountable to the public and forces them to accept responsibility. (Davis 1976: 18 - 19)

The managers of multi-national companies and other major organisations have clearly been given significant power. To counter possible abuse of this power, accountability is demanded of management by subjecting them to compensatory accountability requirements. Historically, as organisations have grown in size and their impact on society has increased, so the accountability demanded of their managers has been extended. (Porter 2009: 177 - 178) In order to secure corporate accountability a two-fold process is followed; management is required to produce accountability reports in the form of annual financial statements and to submit these to independent external audit (Porter 2009: 170). Therefore, it can be deduced that, for managers to fulfil their accountability, reliance is placed on the audit. Consequently, external auditors have the task of ensuring that the accountability (financial and non-financial) reports produced by the organisation provide a fair reflection and reliable account of the organisation's activities and its financial performance.

2.2.4 The impact of agency and stakeholder theories on the need for an audit

The fact that full control of organisations vests in the managers and that the managers are responsible for reporting on the results of their own actions, which the absentee shareholders and stakeholders cannot directly observe, means that, in the absence of an audit, managers are in a position to deceive the owners and stakeholders, and to manipulate the reports to hide their actions (Messier et al 2010: 5; Spicer and Pegler 1921: 13). Moizer (2005: xii) highlighted two principle ways in which managers can deceive: in the amount of effort they apply on the owners' and stakeholders' behalf and in the personal consumption of the organisations' resources for their own benefit. Jensen and Meckling (1976: 308) postulated that it is this mistrust by the shareholders that the managers may not use the resources on their behalf that lead to the demand for auditing. The audit function helps to control the conflict of interests among shareholders, stakeholders and managers and it is this effort to control the conflict of interests and to reduce the corresponding agency costs that necessitates the audit (Chow 1982: 286, 287). Jensen and Meckling (1976: 308) described the manner in which audited financial statements reduce agency costs by explaining that outside owners and stakeholders find it worthwhile to have financial statements prepared as a means of monitoring the managers. If the managers themselves can prepare such information at a lower cost than the owners, perhaps because they are already collecting the information for their own internal decision-making purposes, it would pay the managers to agree in advance to incur the cost of providing such reports and to have their accuracy testified to by an independent external auditor. Thus, the independent audit activity assists to improve the shareholders' and stakeholders' confidence in two important ways; firstly the visible nature of the audit process should act as an incentive to management to improve their performance and secondly the auditor provides confirmation that management's report is a faithful representation of the events occurring during the period. (Moizer 2005: xii) The shareholders and

other stakeholders can therefore attach more credibility to management's account, as financial statements audited by an independent auditor are generally regarded as more reliable than unaudited financial statements (Gray and Manson 2008: 10; Sherer and Kent 1983: 2). Therefore, the application of Jensen and Meckling's (1976) agency theory and Freeman's (1984) stakeholder theory leads to the deduction that it is beneficial for owners to require the public disclosure of accounting information and to have that information attested to by an independent auditor who provides assurance that the financial reports fairly present management's custody and use of the owners' resources, as well as a reliable account to the wider stakeholder group of the organisation's activities and financial performance.

From the above discussions it can be concluded that the justification for the existence of the audit function should be understood through the need for accountability where managers manage businesses of behalf of absentee owners and other stakeholders, as is typical in today's organisations. It can be assumed that management cannot be expected to be entirely impartial and unbiased in reporting on their own administration of the organisation. As is evident from the agency and stakeholder theories, there is a natural conflict of interest between management and shareholders and stakeholders; as all parties seek to maximise their self-interest, management may not always act in the owners' and stakeholders' best interest. Further, management may want to convey a better impression than merited by real circumstances and, as management is responsible for reporting on the results of its own actions, which the absentee owners and stakeholders cannot directly observe, management is in a position to manipulate the reported information and provide information that will make management look good. However, to secure accountability it is not sufficient to merely producing reports; for accountability to be effective an independent monitoring mechanism or audit is needed. (Sherer and Kent 1983: 7) Indeed, Normanton (1966: 37) suggested that accountability is an

abstraction which is only given reality by the process of audit and that without audit there can be no accountability.

It is at this point that the need for an independent audit arises due to the shareholders' and stakeholder's concern about the possibility of bias (both deliberate and unintentional) in the information received, resulting from the actual, potential or perceived conflict of interest between the users and the preparers of the information. Thus, from the absentee shareholders' and stakeholder's imperative that those directing the business should account clearly and honestly on their stewardship of the resources entrusted to them, arose the need for an unbiased arbiter to ensure fairness to the users. I.e. it led to the demand for an independent auditor to evaluate the reports of the managers and to provide an opinion on their fair presentation. In monitoring the fairness of the financial statements and other information produced by management, the external auditors are in a unique position; they alone have the statutory right to examine the detailed records and other relevant evidence relating to a reporting entity and to seek the information and explanations they require to perform their duties as auditors. Further, as members of the accountancy profession, external auditors are expected to have the competence, expertise, independence, integrity and other qualities necessary to carry out monitoring duties on behalf of those to whom the organisation is accountable. (Porter 2009: 170) With the audit function performed by someone free from perceived conflict of interest, the independent auditors' reports can be expected to be impartial and free from bias, thereby entrenching the need for the independent auditor.

Thus, the users of the financial statements and the audit report thereon want assurance from a source independent of the organisation. If the person performing the audit is not independent of the organisation being audited the assurance given by the auditor will be of very little or no value. This is supported by the inclusion of the concept of auditor independence in both Mautz and Sharaf's and Flint's audit postulates. Mautz and Sharaf (1961: 58) hypothesised

that the auditor must act exclusively in the capacity as auditor when examining financial data for the purpose of expressing an independent opinion thereon, with Flint (1988: 29) postulating that the distinguishing characteristics of an audit are the independence of its status and its freedom from investigatory and reporting constraints. (The audit postulates are discussed further in section 2.3.) In addition, independence is recognised as a fundamental principle is both the International Federation of Accountants' (IFAC) (2013: par. 280.2) and the IRBA's (2014c: par. 280.2) codes of ethics and it requires the auditor to maintain independence of mind and in appearance in order to express an opinion, and to be seen to express an opinion that is free from bias, conflict of interest or undue influence of others. Consequently, these postulates and codes recognise that in order to maintain confidence in the financial statements and the credibility added thereto through audit assurance, independence is fundamental to the integrity of the audit and that it is imperative that the critical auditor characteristic of independence must be upheld (Kranacher 2012: 80; Hope and Langli 2010: 575).

It can be deduced that auditor independence is essential to auditing; that it is from the auditor's independence that the audit derives its authority and its acceptance and that it lends credibility to the audit report. Therefore, the auditor should actively guard against actions and circumstances that could impede his actual and/or perceived independence, thereby negating the value of an audit (Wines 2012: 7). This deduction was supported by Kleinman and Farrelly (2011: 81) in their statement that "without the practice of independence, no confidence can be placed in the work of the auditor." That is, an audit has value to the public only to the extent that it is performed by an auditor who is regarded as independent and any lack of independence on the part of the auditor, whether real or perceived, will severely impact the credibility of the audit (Poliment and Burke 2011: 5). In fact, independence is so critical that members of the Public Company Accounting Oversight Board (PCAOB) stated that "without auditor independence, an engagement is not an audit, but rather, a consulting

engagement conducted on behalf of management” and that auditors need to change their mind-set to protecting the public (Kranacher 2012: 80; Poliment and Burke 2011: 5). This is a two-fold process in which the auditing profession must strengthen itself through, for example, improved methods, peer reviews, continuous professional education and disciplinary proceedings, as well as improve public perceptions about the independence of auditors and what the auditing profession is doing to better serve society (Kleinman and Farrelly 2011: 80).

As a result, it can be concluded that the principal function and main purpose of an audit is to independently verify the credibility of the information contained in an organisation’s financial statements and to give assurance that the financial statements prepared by the organisation’s managers give a reasonable account of what happened to the organisation and its resources. It can further be deduced that the essential contribution of an audit is to assist the users to independently evaluate the credibility and reliability of the financial information and the ultimate value of the audit function lies in the increase in users’ confidence when using audited financial statements, as opposed to unaudited ones. Consequently, it can be deduced that the application of an independent audit process to financial information enhances the value of the information to the primary benefit of the users of the financial information and ultimately to the benefit and protection of the general public interest. The National Commission on Fraudulent Financial Reporting (Treadway Commission) (1987: 5) reached the same conclusion in its statement that:

“The independent (auditor) who audits the financial statements of a public company also has a public obligation. ... When the independent (auditor) opines on a public company's financial statements, he assumes a public responsibility that transcends the contractual relationship with his client. The independent (auditor's) responsibility extends to the corporation's stockholders, creditors, customers and the rest of the investing public.”

Thus, the dominant reason creating the value of the auditing profession is the requirement for accountability from owners and the public at large, which is provided by the independent audit service. It can be concluded that the basic principles of “enhancing credibility and reliability of information” and “increasing confidence of users” underlie the need for the auditing profession.

2.3 THE AUDIT POSTULATES

A clear distinction was made between auditing and accounting by Mautz and Sharaf (1961: 16) in their influential study on the philosophy of auditing. They acknowledged that the relationship of auditing to accounting is close and that both are concerned with the same general subject matter. However, their functions, tools and approaches are very different. Accounting involves the collection, classification, measurement and communication of business events and conditions as they relate to and represent a specific entity. (Mautz and Sharaf 1961: 16) The task of accounting is to reduce a tremendous quantity of detailed information to a manageable and understandable level. Auditing is also concerned with business events and conditions, but it does not have the task of collection, classification, measuring or communicating them. Its task is to assess the collection, classification, measurements and communications of accounting for propriety. (Mautz and Sharaf 1961: 16) Based on this distinction between accounting and auditing Mautz and Sharaf (1961: 17) concluded that the fundamental ideas and principles of auditing differ from those of accounting and cannot be found through an examination of accounting theory and practices, leading them to a substantial investigation of the logic and philosophy of auditing. Their reasons for such an investigation of auditing philosophy and theory were twofold; to provide solutions to problems auditors find difficult, or to at least provide clues to solutions to such problems; and to uncover the basic “laws” or postulates that govern auditing (Mautz and Sharaf 1961: 5). They continued to say that a philosophy has three aspects of value that they found

useful in developing the postulates of auditing; it gets back to first principles, to the rationale behind actions and thoughts; it is concerned with the systematic organisation of knowledge in such a manner that it is not self-contradictory; and it provides a basis for moulding and understanding social relationships (Mautz and Sharaf 1961: 9).

A postulate can be defined as a “thing claimed or assumed as basis of reasoning” (Fowler, Fowler and Sykes 1982: 802), with Mautz and Sharaf (1961: 43) stating that postulates are “a foundation for the erection of any theoretical structure” and Flint (1988: 9) describing postulates as “a set of comprehensive propositions making up an overall theory”. Postulates therefore act as a starting point or basis for theory development and as such are fundamental to the development of any intellectual discipline.

Postulates do not lend themselves to direct verification, but they must be obvious truths that enable inferences to be drawn from them that can be validated in order to confirm the truth of the original assumption. Postulates are also not unchallengeable truths; they may become invalid as knowledge increases, and should be continually reviewed to see if they have become invalid in the light of new evidence. Although forming a theoretical base or framework for developing and testing theory, postulates must be practical. They must be both sufficient to prove all aspects of the theory for which they form the basis, as well as be consistent with one another, as no rational theoretical structure can be derived from conflicting assumptions. (Mautz and Sharaf 1961: 44, 45) Postulates are therefore important as the foundation for considering and resolving practical problems through the development of theory that provide the framework for a logical body of knowledge.

2.3.1 Mautz and Sharaf's audit postulates

Mautz and Sharaf (1961: 49 - 59) proposed eight tentative postulates of auditing that they believed to be *the* postulates of auditing, on which to build an examination of auditing theory; they are briefly described below.

Postulate 1: Financial statements and financial data are verifiable: Mautz and Sharaf (1961: 50) postulated that unless financial information is verifiable, the auditing profession has no reason to existence. Auditors must take steps to indicate the verifiability of financial statements in order to give them a basis for expressing an opinion on the reliability of the financial statements they examined. Consequently, it is assumed that sufficient reliable evidence must be available and in an appropriate form, to enable the auditor to carry out an audit within reasonable time and at reasonable cost. This postulate is the basis upon which the theory of audit evidence and proof is established. (Refer to chapter 3.)

Postulate 2: There is no necessary conflict of interest between the auditor and the management of the entity under audit: If the assumption that there is no conflict between management and auditors is not made, no management responses or representations would hold any credibility and the auditor would regard the records and documents under management's control as completely unreliable. Mautz and Sharaf (1961: 52) therefore assumed that generally there is no conflict between the auditor and the management of the entity under examination, taking cognisance of the rare cases where management's interests might be in direct conflict. Hence they postulated no *necessary* conflict, not the impossibility of conflict.

Postulate 3: The financial statements and other information submitted for verification are free from collusive and other unusual irregularities: Mautz and Sharaf (1961: 55) related this postulate to the concept of due audit care and the auditor's responsibilities for the discovery of irregularities. If the assumption is made that the information being examined does include irregularities resulting

from extensive and unusual collusion, the audit scope and extent would be impossibly wide.

Postulate 4: The existence of a satisfactory system of internal control eliminates the probability of irregularities: A good system of internal control eliminates the probability of irregularities and consequently reduces the extent of audit testing and evidence required. If this postulate is invalid the auditor would be faced with a situation in which errors and irregularities are almost certainly probable and a reasonable audit service would not be possible. The auditor would either be required to almost always disclaim his opinion or to perform an extremely detailed audit. (Mautz and Sharaf 1961: 55)

Postulate 5: Consistent application of generally accepted principles of accounting results in the fair presentation of the financial position and the results of operations: To assess the fairness of an entity's financial statements the auditors must have some standard to judge the correctness of the financial information submitted for examination against. This is provided by generally accepted accounting principles and standards such as the International Financial Reporting Standards (IFRSs) or IFRS for Small and Medium-sized Entities (SMEs). (Mautz and Sharaf 1961: 56)

Postulate 6: In the absence of clear evidence to the contrary, what has held true in the past for the entity under examination will hold true in the future: Mautz and Sharaf (1961: 57) argued that unless the auditor can assume that what has held true for the entity in the past will hold true in the future, barring any clear indications to the contrary, he will have no basis for accepting or rejecting the propriety of the financial statements being audited.

Postulate 7: When examining financial data for the purpose of expressing an independent opinion thereon, the auditor acts exclusively in the capacity as auditor: Independence is of the essence in auditing and the auditor must act exclusively in the role of an auditor when performing the examination (Mautz and Sharaf 1961: 58).

Postulate 8: The professional status of the independent auditor imposes commensurate professional obligations: The concepts of due care, professional efficiency and service before personal interest rest on this postulate (Mautz and Sharaf 1961: 59).

2.3.2 Flint's audit postulates

As stated by Mautz and Sharaf (1961: 45), postulates should be continually reviewed to see if they remain valid or need amendment in light of further knowledge. To this end Flint (1988: 20 - 40) reassessed Mautz and Sharaf's (1961) original postulates as part of his study of audit philosophy, theory and principles and reworked them as discussed below.

Postulate 1: The primary condition for an audit is that there is a relationship of accountability or a situation of public accountability: Those that are accountable are required to give an account as a basis for decision-making by the group(s) to whom they are accountable. Auditing exists because there is a need for assurance to be provided on the fair presentation of the financial statements that are produced by those who are accountable. (Flint 1988: 23)

Postulate 2: The subject matter of accountability is too remote, complex and/or significant for the discharge of the duty to be demonstrated without the process of auditing: Remoteness refers to the barriers faced by interested parties to the means of satisfying themselves on the matter of accountability resulting from the separation between management and the interested parties. Complexity relates to the specialised knowledge and scale of resources necessary to investigate an organisation's operations that are beyond the capacity of most interested parties without specialist assistance. Significance means the importance of the performance of an organisation and the information it gives about its performance to the judgements and decisions of interested parties. Thus, organisations are so huge and complex that accountability cannot be

achieved unless an auditor examines the accountability statements produced by management; i.e. accountability without audit is not possible. (Flint 1988: 26)

Postulate 3: Auditing is independent in status and free from investigatory and reporting constraints: The concept of audit independence is central to audit theory, as it is primarily on the basis of its independence that the audit derives its authority and its acceptance. The audit process must be independent in every sense from the organisation and its management otherwise it would add little or no value. The auditors must be allowed freedom in their search for evidence and should do nothing that would lead to doubt that the audit opinion is unbiased or that would threaten the credibility of the audit report. (Flint 1988: 29)

Postulate 4: The subject matter of auditing can be verified by evidence: Audit is part of the accountability process; it is an examination or investigation by a person other than those who are accountable to find out and to report on how the duty of accountability has been discharged. The only way in which auditors can inform themselves on the subject matter on which they must report and express an opinion is by obtaining evidence thereon. (Flint 1988: 31) Consequently, it must be possible to find evidence that an assertion is fairly presented in accordance with an applicable financial reporting framework otherwise there would be no point in auditors examining information and providing assurance. There must be what Mautz and Sharaf (1961: 51) described as “sufficient competent evidential matter”. Therefore, the postulate on audit evidence is at the core of audit theory, as without evidence auditors have no basis on which to form a judgement and express an opinion; i.e. without evidence an audit is not possible. Thus, this postulate directly links and supports the focus of this study, which is specifically concerned with the extent of audit evidence.

Postulate 5: Standards of accountability can be set for those who are accountable and actual conduct, performance, achievement and quality can be

measured and compared with these standards, with the process of measurement and comparison requiring special skill and judgement: The standards of conduct, performance, achievement and quality of information must be clearly established and agreed by the parties to the accountability process in order for accountability to be discharged. If it is not possible to specify such standards that are understandable and acceptable to all parties, there is no basis on which to instruct an audit. (Flint 1988: 32) In many countries, including South Africa, this is achieved through the requirement for published financial statements to be prepared in accordance with the IFRSs or the International Financial Reporting Standard for Small and Medium-sized Entities (IFRS for SMEs) (RSA 2008: sect. 29).

Postulate 6: The meaning, significance and intention of audited financial statements are sufficiently clear that the credibility given thereto as a result of an audit can be clearly expressed and communicated: There is a clear relationship between the information being audited and the ability to report on it, as it would be difficult to report on information if there was no agreement on how it was prepared or what it represented. Therefore, the message of the reported information must be clear, precise and unambiguous. Further, the significance of the audit report must also be clear, specific and unambiguous so that those who use it is able to understand in what respect the auditor lends some authority, or alternatively explicitly denies authority, to the message that the originator of the reported information intended to convey. (Flint 1988: 38)

Postulate 7: The audit produces an economic or social benefit: An audit adds credibility to financial information and thereby produces an economic or social benefit. All audits involve obtaining and evaluating sufficient audit evidence to support the audit opinion. Certainty is rarely achieved and the audit opinion is based on relative certainty according to the strength of the evidence. Therefore, at some stage the cost of further evidence and of the resultant increased confidence which the auditor obtains must be measured against the enhanced social good which that would produce. (Flint 1988: 39) I.e. “the difference

between compelling evidence and very persuasive evidence may not be sufficiently important to warrant the added cost of obtaining the former” (Mautz and Sharaf 1961: 103) and the total social benefit against the social cost must be compared in considering the social justification for an audit. (The social benefit of an audit within the accountability process is discussed further in section 2.4.3.)

To conclude, postulates provide the theoretical starting point for the application of reasoning and thinking; without them nothing further can be established, hence their importance. The audit postulates of Mautz and Sharaf (1961) and Flint (1988) remain relevant today, as is evidenced by the continued reference thereto in the auditing literature (Dennis 2010: 142; Van Heerden 2005: 85; Botha 1999: 34), as well as Van Heerden’s statement that “nowhere else is a proper theory of auditing available” (Van Heerden 2005: 85). With reference to this study, the audit postulates of Mautz and Sharaf (1961) and Flint (1988) act as a basis for discussion and provide the rationale behind the integrated audit evidence planning model developed in this study, as both refer explicitly to audit evidence in their postulates: Mautz and Sharaf (1961) by means of their statement that “financial statements and financial data are verifiable” and Flint (1988) through his postulate that “the subject matter of auditing can be verified by evidence”.

2.4 THE AUDIT DEFINITION AND THE ACCOUNTABILITY PROCESS

Having examined the audit postulates in the previous section as the starting point for the development of an overall audit theory, the definition of an audit is considered below. The role of an audit is then placed within the accountability process that exists between an organisation, the owners of the organisation and the members of wider society that have an interest in and who are affected by the actions of the organisation.

2.4.1 The definition of an audit

The practice of auditing came about due to the necessity to institute some system of inspecting and reporting on those whose responsibility it was to manage the wealth and monies of others. The person whose duty it was to make such an inspection and report thereon became known as the auditor, the word being derived from the Latin word *audire*, which means *to hear*, as the responsible stewards were required to appear before the auditor who *heard* their reports. With the evolution of the system of double-entry accounting it became possible to record all manner of transactions and the auditor's duties correspondingly expanded to the examination of written accounts. (Spicer and Pegler 1921: 2)

Various descriptions or definitions of an audit have been put forward; some more general and others more specific. For example:

The Oxford dictionary broadly defines an audit as an official examination of accounts (Fowler et al 1982: 56). An audit can also be described, in general terms, as an examination of the books, accounts and vouchers of a business, so as to enable the auditor to satisfy himself whether or not the books are properly drawn up to exhibit a true and correct view of the state of affairs of the business and if not, in what respects it is untrue or incorrect (Spicer and Pegler 1921: 4). Sherer and Kent (1983: 19) and Mautz and Sharaf (1961: 6) explained an audit as a qualitative attempt to enhance the degree of confidence that can be placed on the financial statements or accounts. Flint (1988: 20) took a wider view and describes an audit as a process on which the members of society call and rely; it is an examination by a person other than the parties involved that compares performance with expected norms and reports the results in order to monitor and secure accountability.

A more specific definition was published by the AAA's *Statement of basic auditing concepts* (AAA 1973: 2) that an audit "is a systemic process of objectively obtaining and evaluating evidence regarding assertions about

economic actions and events to ascertain the degree of correspondence between those assertions and established criteria and communicating the results to interested users.” The legal perspective on the definition of an audit is provided in the Auditing Profession Act (RSA 2005: sect. 1), as the examination of financial statements in accordance with applicable auditing standards, with the objective of expressing an opinion as to their fairness with an identified financial reporting framework and any applicable statutory requirements, as well as by the Public Audit Act (RSA 2004: sect. 1), as the examination or investigation, in accordance with applicable auditing standards, of those aspects to be reported on.

With reference to the ISAs (refer to section 2.5.3.1 for a discussion on the auditing standards applicable in South Africa), the IAASB Framework (IAASB 2014b: par. 7) formally defines an audit as “an engagement in which a practitioner expresses a conclusion designed to enhance the degree of confidence of the intended users, other than the responsible party, about the outcome of the evaluation or measurement of a subject matter against criteria.” This definition is expanded in ISA 200 (IAASB 2014c: par. 3), which deals with the overall objectives of the independent auditor, stating that an audit enhances the degree of confidence of the users in the financial statements by expressing an opinion on whether the financial statements are prepared, in all material respects, in accordance with an applicable financial reporting framework such as the IFRSs or the IFRS for SMEs.

From the above definitions and descriptions it is evident that the fundamental concepts encapsulated in the definitions and descriptions of an audit are the same, with the deduction that auditing can be regarded as a process that provides assurance on and credibility to an organisation’s financial statements in the form of an audit opinion, thereby enhancing the degree of confidence of users of those financial statements.

2.4.2 The accountability process

As in ancient times where a servant or steward was put in charge of the wealth and monies of his master, a key feature of the modern organisation is that it is managed by persons who have been entrusted with the custody of, and the power to decide the use of resources on behalf of the beneficial owners thereof. As in ancient times, these managers have an obligation to be accountable to the owners who entrust resources to them by providing financial information in the form of financial statements on the custody and use of the owners' resources. (Sherer and Kent 1983: 1)

However, the existence of an accountability relationship is not limited to those who have an ownership share in an organisation, but have a wider relationship to the well-being of society in general (Messier et al 2010: 3; Whittington and Pany 2010: 6; Sherer and Kent 1983: 1). Simon (1964: 1, 20 - 22) argued that organisations survive and grow because of the contributions of many different groups of people who are given inducements in return for those contributions; for example, employees contribute their labour in exchange for wages, consumers contribute sales revenues for the benefit of satisfying their consumption needs and the government contributes the services of the state for the inducements of taxation. The ways in which an organisation is managed thus affect other parties who have no direct ownership interest, but who nonetheless contribute to the viability of an organisation and all of these sets of participants are necessary for the survival and prosperity of an organisation. It can therefore be concluded that the concept of accountability is applicable to all the participants associated with an organisation and providing information about the organisation's performance to these parties is a necessary element of the accountability process. (Collier 2008: 937)

This is supported by Sherer and Kent (1983, 1 - 2) who state that accountability is not only necessary due to the separation of the controlling functions exercised by management from the functions of ownership, but also from the

wider interest of parties affected by the behaviour of the origination. Accountability thus has a broader scope that is founded on the need for each set of participants to ensure that equilibrium is reached between the contributions they make and the rewards they receive. The scope of accountability extends beyond the relationship between the managers and the beneficial owners of an organisation (agency theory is discussed in section 2.2.2) to all stakeholders who are affected by the actions of the origination (stakeholder theory is discussed in section 2.2.3).

2.4.3 Auditing in the accountability process

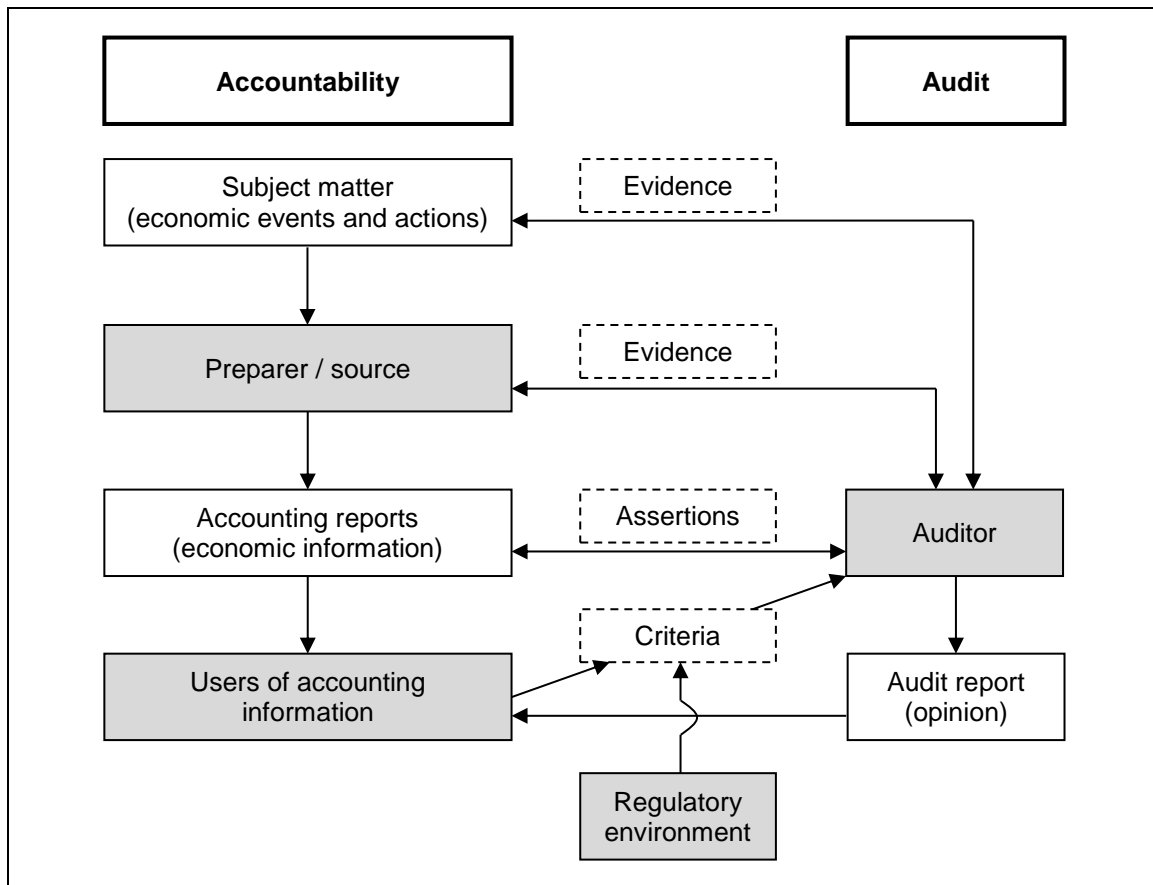
There is a need for a monitoring mechanism that compares the actual behaviour or performance of the organisation with what is communicated by management in the financial statements in order for accountability to be effective (Christopher 2010: 684; Sherer and Kent 1983: 7). In general terms Sherer and Kent (1983: 8) defined an audit as a monitoring “mechanism within the accountability process which enables the participants to monitor the performance of, and enforce the accountability of the managers”. Auditing provides feedback to promote accountability by assessing the credibility of the organisation’s financial statements. Feedback on the credibility is communicated to the users through an audit opinion, and those users take actions or decisions in response to that opinion. Sherer and Kent (1983: 8, 14) concluded that “auditing is concerned with the information presented to those having a financial interest in the organisation and the role of auditing within the accountability process is effectively that of a monitoring mechanism”. Thus, there is a two-fold process to securing corporate accountability; in the first instance by requiring corporate managers to produce accountability reports in the form of financial statements, and secondly by subjecting these to audit (Porter 2009: 170).

The above role of auditing in the accountability process is strongly supported by Flint (1988: x - xv) who saw the role of an audit as enhancing the accountability process on which the members of society call and rely. In Flint's (1988: 6) view, describing the audit function as just expressing an opinion on, or lending credibility to financial statements is inadequate and does not identify the underlying social function and purpose of an audit. Flint therefore examined the audit function as a social phenomenon, arguing that as organisations grew in size, importance and social, economic and political influence and as social structures and public expectations changed, the expectation emerged that an organisation's duty of accountability is wider in its scope and more varied in its terms than just to the shareholders. The organisation has some duty of accountability to all the individuals or groups in society that have an interest in the organisation. (Flint 1988: 15) Consequently, the accountability demanded of the organisation's managers has been extended in terms of to whom and for what they are accountable; today the managers of large companies are considered to be accountable to society as a whole for a wide range of corporate activities (Porter 2009: 177). The audit function grew out of the need of the shareholders, as well as the wider stakeholder groups, for reassurance about the conduct and performance of those entrusted with decision-making authority in the organisation in which they have an interest (Flint 1988: 14) and auditors are charged with assuring that these external parties can rely on the organisation's financial statements to depict a full and fair financial picture (Porter 2009: 178; Reed 1976: 15). Flint (1988: 14) saw the audit function as having no other purpose or value except in its practical usefulness to society.

Five decades ago, this idea was raised by Normanton (1966: 37) who suggested that "accountability is an abstraction, which is only given reality by the process of audit." Society devised the audit as a social control mechanism to scrutinise and monitor conduct and performance where there is a duty of accountability between two or more parties, thereby securing credibility and reliability of stewardship and enforcing accountability (Flint 1988: 12 - 17).

Consequently, society places its trust in auditors as independent experts in reporting on financial activities and business dealings (Porter 2009: 172; Reed 1976: 16). The function of the auditors is to act as society's corporate watchdogs (Porter 2009: 173). Flint (1988: 15) concluded that auditing is an element of society and defined the "social concept of audit as a special kind of examination by a person other than the parties involved that compares performance with expectation and reports the result: it is part of the public and private control mechanism of monitoring and securing accountability." In other words, a key role of auditing is to take a critical view of and monitor the organisation's activities from a third-party societal point of view (Pyun 2006: 20). With the recognition that organisations have a wider responsibility to all groups and individuals who affect, or are affected by, the organisation's operations, organisations' corporate accountability has been extended. In securing this accountability, reliance is placed on the audit function that is charged with the task of ensuring that companies maintain responsible corporate governance and provide reliable accountability reports. (Porter 2009: 178) Consequently, it can be deduced that there is a very close relationship between accountability and auditing and that the financial statements or information prepared by management cannot become an effective means of holding management to account until an independent auditor has examined and reported on them. The role of the audit function in the accountability process can be schematically illustrated as set out in diagram 2.1.

Diagram 2.1: Audit and the accountability process



(Source: Adapted from Gray and Manson (2008: 36) and AAA (1973: 11))

A number of key aspects to the illustration of auditing in the accountability process merit highlighting in brief:

- **Subject matter:** The subject matter represents the organisation's economic events and actions, as reflected in the accounting reports, and can take many forms; for example, non-financial performance reports on indicators of efficiency and effectiveness or physical characteristics in a specifications document and compliance with legislation. For financial performance the subject matter is the financial position, financial

performance and cash flows represented in the financial statements. (IAASB 2014b: Framework par. 31 - 33)

- Preparer/source: This refers to those who have been entrusted with decision-making powers and control over resources provided by others (referred to as the “agent” in agency theory). They have the responsibility for preparing the accounting reports that show their performance and the results of the activities controlled by them, in order for existing and potential investors, lenders and other creditors to make decisions about providing resources to the organisation. (IASB 2014: Framework par. OB2, 25; Gray and Manson 2008: 36)
- Accounting reports: Accounting reports present management’s report on their actions and decisions regarding their custodianship of the resources entrusted to them. Accounting reports therefore reflect the organisation’s economic events and actions that are subjected to audit. (IAASB 2014b: Framework par. 31 - 33; AAA 1973: 7)
- Users of accounting information: Users are the individuals and groups in the wider society that have an interest in the organisation preparing the accounting reports and include both owners such as shareholders (referred to as the “principals” in agency theory) and other non-owners such as customers, suppliers and employees (referred to as the “stakeholders” in stakeholder theory) who do not have a direct ownership interest in the organisation (Gray and Manson 2008: 36). The users are the person(s) or class(es) of persons for whom the auditor prepares the audit report (IAASB 2014b: Framework par. 27).
- Evidence: Audit evidence is central to the audit process; it is necessary in order for the auditor to form an audit conclusion. When management as the preparer/source, are drafting the financial statements, they are “asserting” that the financial statements are a communication of the

economic events and actions that took place. The auditor looks for sufficient appropriate evidence to evaluate whether management's statements or assertions correspond to the auditor's evidence about the economic events and actions that took place, based on established criteria, in order to prove that management's assertions in the financial statements are free from material misstatement. (IAASB 2014b: Framework par. 39; Hooks 2011: 8; O'Reilly, Winograd, Gerson and Jaenicke 1999: 6; AAA 1973: 2) As a fundamental concept of this study, evidence is discussed separately in chapter 3.

- **Assertions:** By assertions are meant the statements, implicit or explicit, made by management that are represented in the accounting reports or financial statements (IAASB 2014a: Glossary). The overriding assertion made by management about financial statements is that they give a true and fair view of the economic events and actions of the organisation. This overriding assertion provides the main objective of the external auditor, which is to form an opinion about the fair presentation or truthfulness and fairness of the financial statements in accordance with established criteria, based on his evidence search. (Gray and Manson 2008: 37)
- **Criteria and the regulatory environment:** Criteria are the benchmarks used to evaluate the subject matter and the objective of any audit is to determine the degree of correspondence between the established criteria and the economic events and actions reported on by management in the accounting reports. Thus, criteria are the standards of accountability that define the users' performance expectations and the auditor reports on the achievement of the expectations against the established criteria. (AAA 1973: 7; Flint 1971: 8) For purposes of the financial statements, the applicable financial reporting framework (e.g. IFRSs or IFRS for SMEs) provides the criteria for preparing and auditing the financial statements. The criteria are necessary to allow for consistent evaluation of the subject

matter; without the frame of reference provided by the criteria the audit opinion may be open to individual interpretation and misunderstanding. (IAASB 2014b: Framework par. 34, 35; IAASB 2014d: ISA 210 par. A2)

In the AAA's *Statement of basic auditing concepts* (AAA 1973: 11) original diagram, on which diagram 2.1 above is based, the criteria were shown as originating from the users. Gray and Manson (2008: 37) acknowledged that this may still be the case in some instances; for example, where a bank asks for a special purpose audit. However, in their interpretation of the original diagram, Gray and Manson (2008: 37) recognised that today the more important source of the criteria is a range of bodies that exercise a regulatory role. For this reason they updated the diagram to indicate the criteria as emanating from the regulatory environment, although they retained the line from the users through the criteria to the audit. The bodies constituting the regulatory environment can range from parliament that creates legislation, to professional institutions such as the South African Institute of Chartered Accountants (SAICA) and regulators such as the IRBA that monitor the performance of their members and to such bodies as the International Accounting Standards Board (IASB) and the International Auditing and Assurance Standards Board (IAASB). (Gray and Manson 2008: 37) The regulatory environment is discussed further in section 2.5.

- Auditor and audit report: The auditor examines the accounting reports prepared by the preparer/source and issues an audit report to the users, following the examination (Gray and Manson 2008: 37). The aim and end result of the audit is a report by the auditor that communicates to the users the degree to which the preparer's assertions meet the established criteria. It represents the audit opinion or judgement concerning the degree of correspondence between the accounting reports or financial

statements and the applicable accounting criteria. (IAASB 2014c: ISA 200 par. 11; O'Reilly et al 1999: 6; AAA 1973: 5)

From the schematic illustration of the audit and the accountability process in diagram 2.1, as well as the subsequent discussion thereof, it can be deduced that auditing is fundamental to accountability in the agent-shareholder and agent-stakeholder relationships between the preparers and users of the financial statements. This links directly to the formal definition of an audit included in the ISAs (IAASB 2014b: Framework par. 7) as “an engagement in which an auditor expresses a conclusion designed to enhance the degree of confidence of the ... users ... about the outcome of the evaluation ... of subject matter against criteria.”

2.5 THE AUDIT REGULATORY ENVIRONMENT

The regulatory environment encompasses the requirements, rules, standards and principles imposed by a wide range of bodies, including parliament, regulators, professional institutions, standard setters and other bodies. The regulatory environment, and the regulatory bodies comprising the regulatory environment, are important as they set not only the requirements to perform audits, but also provide the criteria for preparing the financial statements, as well as the rules regarding how the audit should be conducted. (Gray and Manson 2008: 51) A brief overview of the regulatory environment in the South African auditing context is provided below. The focus is on the South African environment because the model that is developed in this study is evaluated for adherence to the ISAs by the IRBA, which is the audit regulating body in South Africa.

2.5.1 Statutory requirements

A primary influence on managers and auditors is the need to fulfil statutory reporting and auditing requirements, both in the private sector environment and in the public sector environment. Sections 29 and 30 of the Companies Act (RSA 2008) require all companies to annually prepare financial statements and, in the case of public and public-interest companies, to have those financial statements audited. Other companies may elect to be audited voluntarily or to be independently reviewed (RSA 2008: sect. 30). These audits are conducted in terms of the requirements of the Auditing Profession Act (RSA 2005), which is discussed further in section 2.5.3. In the public sector environment, it is mandatory for all government entities to annually prepare financial statements and to submit those financial statements to an audit in terms of the requirements of the Public Audit Act (RSA 2004: sect. 4), the Public Finance Management Act (RSA 1999: sect. 40, 55) and the Municipal Finance Management Act (RSA 2003: sect. 122, 126).

Thus, in South Africa the requirements to prepare financial statements and to have them audited are codified in legislation and therefore have the force of law. Consequently, legislative and statutory requirements mandate management to prepare financial statements.

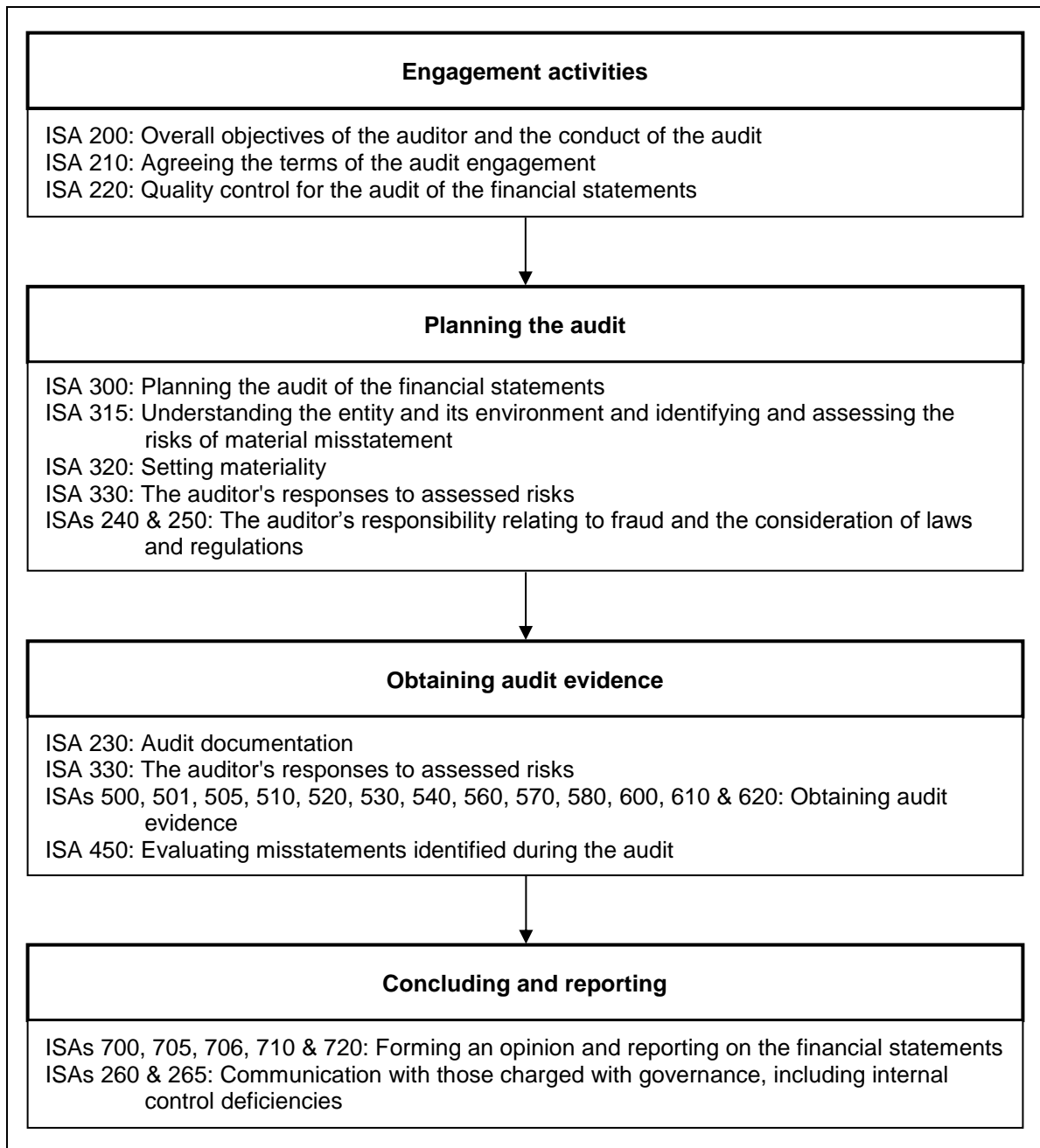
2.5.2 Standard setters

The IFAC is the global organisation for the accountancy profession, with a worldwide membership of 127 countries, which includes South Africa. Its mission is to contribute to the development, adoption and implementation of international auditing and assurance standards and guidance, which is achieved through the IAASB, and to facilitate the convergence of national and international auditing standards. (IFAC 2012) The IAASB sets standards dealing with auditing, review, other assurance, quality control and related services.

More specifically, the IAASB's standards comprise the ISAs, International Standards on Assurance Engagements (ISAEs), International Standards on Related Services (ISRSs), International Standards on Review Engagements (ISREs) and International Standards on Quality Control (ISQCs). More than 75 countries, including South Africa, are using or are in the process of adopting the ISAs. (IAASB 2012; Davies and Aston 2011: 26) The ISAs and ISREs are applied in the audit and review, respectively, of historical financial information. The ISAEs are followed in assurance engagements other than audits or reviews of historical financial information, whereas the ISRSs are used in compilation engagements, engagements to apply agreed upon procedures to information and other related services engagements. The ISQCs is applicable for all services falling under the IAASB's standards. (IAASB 2014s: Preface par. 4 - 9)

In order to achieve the aim of an audit, which is to enable the auditor to express an opinion of whether the financial statements are prepared, in all material respects, in accordance with an applicable financial reporting framework (IAASB 2014c: ISA 200 par. 3), the ISAs set out a series of procedures and activities that the auditor should perform to obtain evidence to support the audit opinion. Thus, the ISAs outline the audit methodology process; and one possible illustration of the broad phases within the overall audit process, together with the ISAs applicable to each phase, is detailed in diagram 2.2.

Diagram 2.2: Phases of the audit process



The ISAs regulate the execution of the audit in an effective and structured manner and it can therefore be concluded that by issuing these auditing standards, the IFAC through the IAASB, is regulating the international auditing

profession. By so doing the IAASB is enhancing the quality and uniformity of auditing practice throughout the world, thereby strengthening accountability and public confidence in financial reporting and auditing.

2.5.3 Professional institutions

In addition to regulation through statutory requirements, the accounting and auditing profession is further regulated by professional bodies or institutions. The most basic form of regulation by such professional institutions may include limiting membership to persons with particular qualifications and experience and requiring registration to practice (Heathcote 2012: 34; Verhoef 2011b: 22). Other forms of regulation may involve developing standards for professional conduct, requiring commitment to an ethical code of conduct and sanctioning members in breach of such rules (Godfrey et al 2010: 71; Gray and Manson 2008: 51). Further, as members of the auditing profession and its professional institutions, auditors are expected to have the capabilities, technical and professional competence, expertise, objectivity, diligence, intelligence, independence and integrity and other qualities necessary to carry out their duties. In short, they are required to operate with utmost professionalism. (Porter 2009: 172)

In South Africa, the SAICA, a self-regulating professional body, governs and advances the interest of South African accountants (SAICA 2014b). The SAICA amalgamated out of the four provincial associations in 1980; i.e. the Transvaal Society of Accountants (formed in 1904), the Institute of Accountants in Natal, the Cape Society of Chartered Accountants and the Society of Accountants and Auditors in the Orange Free State (all formed since 1907) (Verhoef 2011a: 5). As far back as 1951, the local auditing profession was further regulated by statute through the enactment of the Public Accountants' and Auditors' Act (RSA 1951), rather than through self-regulation only; the aim of which was to provide for more independent regulation of the profession. The act provided for

the establishment of the Public Accountants' and Auditors' Board (PAAB), with disciplinary powers for control of the profession, the registration and control of article clerks and the conduct of examinations. The act further provided statutory uniformity in that only persons who passed the qualifying examination could be registered to practice as an auditor. (SAICA 2014b; Verhoef 2013: 163; Verhoef 2011b: 35)

However, the independence of the PAAB could be questioned as it was governed solely by its members from the auditing profession and from whom all its financing was obtained (Odendaal and de Jager 2008: 6). In addition, the period 1980 to 2006 saw several large international organisations (e.g. Enron, Halliburton, WorldCom and Parmalat) and local companies (e.g. Masterbond, Leisurennet, MacMed and Regal Bank) collapse (Christopher 2010: 683; Parmar et al 2010: 404; Porter 2009: 170; Collier 2008: 933; Gray and Manson 2008: 49). This led to a period of self-examination and external investigation of the auditing profession and culminated in the enactment of the Auditing Profession Act (RSA 2005) (SAICA 2014b; Verhoef 2013: 164; Verhoef 2011b: 23; Odendaal 2005: 76). The Auditing Profession Act (RSA 2005: sect. 3, 41, 59) made provision for the PAAB to be replaced with a new statutory regulator, the IRBA, with the composition of the IRBA's governing structure being limited to 40% from the auditing profession and it being partially financed by government (Odendaal and de Jager 2008: 6). The IRBA has a general legislated mandate to protect the financial interest of the South African public and international investors in South Africa through the effective regulation of the auditing profession in South Africa. More specifically, only persons registered with the IRBA as registered auditors are allowed to perform the audit function and the IRBA is responsible for prescribing auditing standards and promoting the integrity of the auditing profession through, amongst other things, conducting practice reviews or inspections. (RSA 2005: sect. 4)

2.5.3.1 Auditing standards

Prior to 1994, the auditing standards for use in South Africa, the South African Auditing Standards (SAASs), were developed and issued by the SAICA on behalf of the PAAB, with consideration given to standards issued by international standard setters. In 1994 it was determined that the development of the SAASs should be based on the ISAs issued by the IAASB. (IRBA 2004: par. 2)

From 2002 the PAAB, through its Auditing and Assurance Standards Board (AASB) took up its legislated responsibility to prescribe the auditing standards with which auditors must comply in performing their duties as auditors. This was followed by the decision in June 2004 that the AASB would adopt the entire suite of auditing pronouncements issued by the IAASB as is, for use in South Africa from 1 January 2005. (SAICA 2014a: par. 20) The pronouncements adopted; i.e. the ISAs, ISAEs, ISRSs, ISREs and ISQCs, replaced the then SAASs (IRBA 2013: par. 7 - 10; IRBA 2004: par. 3, 4).

As indicated earlier, the IRBA became the statutory body controlling the auditing profession in South Africa from April 2006 when the Auditing Profession Act (RSA 2005) came into effect. The IRBA's Committee for Auditing Standards (CFAS) replaced the AASB in July 2006 and took over the powers of prescribing the standards with which auditors must comply when performing audits. (IRBA 2014d) Establishment of the CFAS is required in terms of sections 20 and 22 of the Auditing Profession Act (RSA 2005) and the committee is responsible for developing, maintaining, adopting, issuing and prescribing auditing pronouncements; considering international developments and influencing the nature of international pronouncements; and promoting and ensuring the relevance of auditing pronouncements. All the IAASB's auditing pronouncements approved by the CFAS on behalf of the IRBA, are binding on registered auditors in South Africa, together with the requirements of the Auditing Profession Act (RSA 2005).

It stands to reason that the voluntarily application of the ISAs indicates the commitment of the South Africa auditing profession to providing a high quality service in their role in the accountability process. It further demonstrates behaviour appropriate to members of an internationally highly regarded profession. This is borne out by the findings of the World Economic Forum's (WEF) (2014: 341) *2014-15 Global competitiveness report* in terms of which South Africa was once again ranked first amongst 148 countries for the strength of its auditing and reporting standards, which is an indicator of the country's strength of accountability. South Africa's reputation as a globally recognised standard setter and regulator is highly valued by the South African auditing profession and the IRBA is committed to endeavouring to maintain South Africa's auditing standards and international standing; one means of achieving this is through practice reviews. (IRBA 2014b)

2.5.3.2 Practice reviews

The Auditing Profession Act (RSA 2005) dedicates a separate chapter (chapter v *Accountability of registered auditors*) to the accountability of registered auditors. The IRBA is responsible for protecting the financial interests of the people of South Africa and other stakeholders and for promoting the integrity of the auditing profession by holding auditors to account. These responsibilities are translated into practice through the IRBA's task of continuously maintaining and improving the quality of the work of registered auditors, which forms the foundation for and is implemented through the IRBA's practice review process. (IRBA 2014b) The performance of practice reviews is a statutory function of the IRBA, as mandated in sections 4(1)(a) and 47(a) of the Auditing Profession Act (RSA 2005):

Section 4(1)(a): "The IRBA must... take steps to promote the integrity of the auditing profession, including ... conducting practice reviews or inspections"

Section 47(a): “The Regulatory Board ... may at any time inspect or review the practice of a registered auditor ...”

The IRBA executes this responsibility through two processes; engagement reviews and practice reviews. The objectives of these reviews are to monitor compliance by auditors with the appropriate level of professional standards in the performance of the audit function; to assist auditors to improve their standards; and to review the design and implementation of the systems of quality control employed by firms in terms of ISQC1 *Quality control for audit, assurance and related services practices*, specifically inspecting the system elements of leadership responsibilities, ethical requirements, client acceptance and continuance, human resources, engagement performance and monitoring. (IRBA 2014b)

From the above it is evident that the IRBA’s practice review process plays an important role in enforcing the requirements regarding how to perform audits, thereby raising the level and quality of audit services provided by auditors, with the ultimate result that the accountability process is strengthened, giving the public greater confidence in the financial statements and audit reports.

2.5.4 Corporate governance

Another important element of the regulatory environment is corporate governance. Large companies play an important role in society and there is an increasing awareness that the shareholders are not the only group requiring protection from management. The success or failure of large companies can have far reaching effects on society, both nationally and internationally, as illustrated by corporate failures such as Enron, WorldCom and Masterbond. (Christopher 2010: 683; Parmar et al 2010: 404; Porter 2009: 170; Collier 2008: 933; Gray and Manson 2008: 49) Because large companies are so integral to society, they are considered as much a citizen of a country as is a natural

person who has citizenship. As such they have social and moral standing in society, with all the responsibilities attached to that status. (IoDSA 2009: 22)

From the above it is evident that large companies are so important that society has to find a way of controlling them in the public interest. Consequently, there is a need for greater transparency in the way that companies behave in order for the wider society to be satisfied that their needs are being appropriately considered by management. It is this need for protection of the public interest and for holding large companies accountable that drives corporate governance. (Gray and Manson 2008: 51) The concept of corporate governance can thus be described as the structures in place within a company or imposed by society to control how companies are governed (Christopher 2010: 688; Brennan and Solomon 2008: 890, 899; Gray and Manson 2008: 52; Davis 2005: 143).

The requirement for corporate governance can be on a statutory basis, or as a code of voluntary principles and practices, or a combination of both. For example, the United States of America has chosen to codify a significant part of its governance in an Act of Congress known as the Sarbanes-Oxley Act (USA 2002). South Africa has opted for a voluntary code of best practices and principles, as set out in the *King report on governance for South Africa* (King III), which is applied on a “comply or explain” basis (IoDSA 2009: 10). In the South African public sector, some corporate governance principles are also codified in legislation such as the Public Finance Management Act (RSA 1999) and the Municipal Finance Management Act (RSA 2003) and in the private sector, the application of King III is compulsory for listed companies in terms of the Johannesburg Stock Exchange (JSE) listing requirements (Coetzee: 2010: 15; JSE Limited 2010: Introduction).

The first King report on corporate governance was published by the Institute of Directors in Southern Africa (IoDSA) in 1994 (IoDSA 1994). The report has been revised over time, with a second version, the King II report on corporate governance for South Africa, appearing in 2002 (IoDSA 2002) and King III being

issued in 2009 (IoDSA 2009); the third report becoming necessary because of the Companies Act of 2008 (RSA), the financial crisis that resulted from the credit crunch, as well as changes in international governance trends (IoDSA 2012; IoDSA 2009: 7). King III retained the overarching corporate governance objective of achieving fairness, accountability, responsibility and transparency in management's decision-making processes in running the organisation. However, its focus was expanded to include the importance of conducting business reporting in an integrated manner by putting the financial results in perspective. This is achieved by also reporting on how an organisation has impacted, both positively and negatively, on the economic life of the community in which it operates. (IoDSA 2009: 7, 12) King III was written from the perspective of the board / management as the focal point of corporate governance. Thus, the board of directors should take account of the legitimate interests and expectations of all of the organisation's stakeholders in managing and operating the organisation. (IoDSA 2009: 17, 18)

One of the emerging governance trends incorporated in King III relates to the so called combined assurance model (IoDSA 2009 29). The combined assurance model aims to align and integrate the assurance provided by external assurance providers with that provided by internal assurance providers and management. By combining the assurance obtained from management, internal audit and external audit, risk and governance oversight and control efficiencies are maximised, with the result that overall assurance to the company's stakeholders is optimised. (Coetzee 2010: 14; IoDSA 2009 122) Therefore, it can be concluded that although applied on a voluntary "comply or explain" basis, the corporate governance principles set out in King III add another layer to the accountability of companies and auditors to the South African citizenship at large, increasing public confidence in financial reporting and auditing.

It is evident from the above discussions that the regulatory environment comprises a wide range of aspects from statutory requirements, standards setters, professional institutions and corporate governance. These regulatory

requirements define the environment and draw the boundaries within which companies and auditors function and operate. The regulatory environment establishes the principles with which all the role-players in the accountability process need to comply; both companies as the preparer/ source of financial reports, as well as auditors in the manner in which they conduct the audit and prepare the audit report. It also provides for accountability monitoring mechanisms which compares the actual behaviour or performance for adherence to the regulatory rules and principles, further strengthening accountability.

2.6 CONCLUSION

This chapter discussed the development of the modern organisation and concluded that the modern business has developed into an organisation characterised by a separation between ownership and the right to exercise control. The separation of ownership and control emanate from an organisation's ability to raise vast amounts of capital from a wide variety of investors and creditors by selling shares and/or bonds on securities markets. The divergence between the absentee owners, who are not directly involved in the running of the business, and the use of managers hired by the owners to manage the organisation on their behalf, has led to control of the organisation, which in law is vested in the hands of the owners, effectively having been moved from the owners and taken over by management. This relationship between the owners and managers within an organisation was examined using the agency theory; with the managers (the agents) controlling resources on the owners' (the principals') behalf.

With the concentration of power and control of the organisation in management, management may have incentives to allocate the organisation's resources in ways that are not necessarily consistent with the interest of the absentee owners. Consequently, there is a natural conflict of interest between the

managers and the absentee owners that arises when decisions made by managers to maximise their own utility do not maximise ownership wealth. The shares and/or bonds acquired by investors and creditors on securities markets, give the public/owners a valid interest in the proper use of and stewardship over the organisation's resources. However, with full control of the organisation vesting in management, the absentee owners have no means of directly observing management's actions to ensure that management is acting in the owners' best interest. In these agency relationships, where managers are entrusted with the custody of, and the power to decide the use of resources on behalf of the absentee owners, there exist an accountability obligation on the managers in respect of such resources entrusted to them, resulting in a need for auditing.

It was further discussed that the organisation's duty of accountability is not limited to those who have an ownership interest in an organisation, but extends to all parties who are affected by the actions of the organisation. Management has direct control over the decision-making apparatus of the organisation and are therefore the only group that can enter into contractual relationships with all other stakeholders, including employees, customers, suppliers, creditors, communities and society in general. The unique role of managers, as the agents of not only the shareholders, but also of other stakeholders, as captured in the so-called stakeholder theory, was recognised. As society's values and the business environment change over time and as organisations grow in size and extend their power and influence in society, so changes occur in the extent of the accountability required of their managers. Consequently, it can be concluded that the organisation has a wider relationship to the wellbeing of society in general, implying a wider accountability scope. The general public's need for reassurance about the conduct and performance of those entrusted with the authority to make decisions that might impact them, further strengthen the demand of auditing. The evident deduction from the above is that auditing is a critical function in promoting accountability and the absentee shareholders

and stakeholders turn to the auditor, as a trusted independent party, to hold management to account, thus giving rise to the demand for auditing.

Against this background the foundation and theory of auditing were examined through consideration of the audit postulates and audit definition. The audit postulates provide a starting point for the consideration and resolution of practical problems through the development of audit theory. One of the fundamental audit postulates deals with audit evidence, as evidenced by both Mautz and Sharaf's and Flint's explicit inclusion of the audit evidence concept in their postulates. Consequently, the "audit evidence" postulate directly underlies the focus of this study; i.e. audit evidence, and provide the rationale behind the audit evidence model developed in this study. Turning to the audit definition, the importance of audit evidence in the audit theory and audit process is further evident from the encapsulation of the concept in not only the audit postulates, but also in the audit definition. In broader terms, it was deduced that auditing can be regarded as a process of assessing evidence that enables the auditor to express an opinion. The audit opinion is designed to enhance the degree of confidence of the resource owners that the accounts provided by management in the financial statements are presented in accordance with the applicable financial reporting framework and that they fairly reflect management's custody and use of the owners' resources. The audit opinion, based on the evaluation of evidence, provides assurance on and credibility to the financial statements, thereby enhancing the accountability process.

Within the accountability process the regulatory environment establishes the requirements, rules, standards and principles with which the participants to the accountability process must comply. The regulatory environment that comprises of such bodies as parliament, regulators, professional institutions and standard setters, is important as it sets not only the requirements to perform audits, but also provides the criteria for preparing the financial statements, as well as the rules regarding how the audit should be conducted. A brief overview of the primary regulatory bodies in the South African auditing context was provided.

It is apparent from the discussions throughout this chapter that audit evidence is indispensable to the audit process; without it the auditor cannot form an audit conclusion or express an opinion. The systemic process of objectively obtaining and evaluating evidence is thus a key aspect undertaken by the auditor in executing the audit. The auditor looks for sufficient appropriate evidence to evaluate whether management's statements or assertions correspond to the auditor's evidence about the economic events and actions that took place in order to prove that management's assertions in the financial statements are free from material misstatement, thereby enabling the auditor to express an opinion that enhances the degree of confidence that can be placed on the financial statements. It can therefore be concluded that audit evidence is central to the audit, as part of the accountability process in the agency and stakeholder relationships between management and the absentee shareholders and stakeholders; it is essential in order for the auditor to form an audit conclusion. As a fundamental concept of this study, audit evidence is discussed in more detail in chapter 3.

CHAPTER 3: AUDIT EVIDENCE

3.1 INTRODUCTION

The important role played by the audit function as part of the accountability process in the agency and stakeholder relationships between management and the absentee shareholders and stakeholders, was discussed in chapter 2. In the accountability process, the absentee owners turn to the auditor, as a trusted independent party, to provide assurance that the financial statements prepared by the organisation's managers give a reasonable account of what happened to the organisation and the custody and use of the resources entrusted to the managers of the organisation, thus giving rise to the demand for auditing. Chapter 2 concluded that in general terms, an audit assists in holding management to account, with the essential purpose of enhancing or adding credibility to information, thereby increasing the confidence of users of the financial reports that reflect management's use of the resources entrusted to them. As a result, the purpose of an audit is the expression of an opinion by the auditor on the fair presentation of the financial statements, based on an examination of evidence. The objective is to obtain reasonable assurance, based on an examination of evidence, that will enable the auditor to express an opinion on whether the financial statements are prepared, in all material respects, in accordance with the applicable financial reporting framework (IAASB 2014c: ISA 200 par. 11(a)). This conveys the basic idea that an audit is an investigative process that consists of gathering and evaluating evidence as the basis for the audit opinion. The investigative process is carried out in accordance with a set of standards, with the South African auditing profession applying the ISAs, as discussed in section 2.5.3.1 of chapter 2.

Underlying the ISAs is the IAASB Framework, which provides a frame of reference for the development of the ISAs, as well as for the performance of audits (IAASB 2014b: Framework par. 3). According to the IAASB Framework,

all assurance engagements performed by auditors exhibit five elements: a three party relationship involving the preparer, auditor and users, subject matter, criteria, *evidence* and an assurance report (IAASB 2014b: Framework par. 3, 20). (Refer to section 2.4 of chapter 2 for a discussion on the three party relationship and the elements of an audit within the accountability process.)

This chapter explores the concept of audit evidence as the information used by the auditor to support the audit opinion. This is followed by a discussion in line with the IAASB Framework requirement that the auditor must plan and perform the audit to obtain sufficient appropriate evidence about whether the financial statements are free from material misstatement, emphasising the auditor's consideration of materiality, risk, and the quantity and quality of evidence when determining the nature, timing and extent of evidence gathering procedures. (IAASB 2014b: Framework par. 39) The gathering and examination of audit evidence is fundamental to making an assessment and reaching a conclusion about whether the financial statements are free from material misstatement. It enables the auditor to enhance the degree of confidence of the intended users of the financial statements by expressing an opinion on whether the financial statements are prepared, in all material respects, in accordance with the applicable financial reporting framework. (IAASB 2014b: Framework par. 7; IAASB 2014c: ISA 200 par. 11) Thereafter the chapter concludes by making a case for modelling audit evidence with reference to the aggregation of different types of evidence, the linkage between the risk assessment and the extent of evidence, and the use of structured decision models for the application of professional judgement regarding the gathering of audit evidence.

3.2 AUDIT EVIDENCE

Audit evidence is the information used by the auditor to arrive at the conclusions on which the audit opinion is based (IAASB 2014a: Glossary). In order for the auditor to arrive at reasonable conclusions on which to base the audit opinion,

the auditor needs to obtain both sufficient and appropriate audit evidence about whether the financial statements are free from material misstatement (IAASB 2014c: ISA 200 par. 17). In so doing the auditor should take cognisance of the relationship between the cost of obtaining the evidence and the usefulness of the information obtained, and the examination of audit evidence should be performed both efficiently and effectively (IAASB 2014c: ISA 200 par. A48).

3.2.1 The concept of audit evidence

The general concept of evidence has been described and defined in various ways and from diverse viewpoints. In 1827 Jeremy Bentham (cited in Vanasco, Skousen and Jenson 2001: 207) explained evidence from the viewpoint of persuasiveness in his *Treatise on judicial evidence* as “any matter of fact, the effect, tendency, or design of which, when presented to the mind, is to produce a persuasion concerning the existence of some other matter of fact: a persuasion either affirmative or dis-affirmative of its existence”. The Oxford dictionary provides a general definition of evidence as “facts in support of a conclusion” and “information given personally or drawn from documents etc. to establish fact” (Fowler et al 1982: 334). Further, in their landmark book on *The philosophy of auditing* Mautz and Sharaf (1961: 82) described evidence as “giv(ing) us a rational basis for forming judgements”.

Turning to the more specific auditing viewpoint, both Mautz and Sharaf (1961: 50) and Flint (1988: 31) explicitly included the audit evidence concept in their postulates; the audit postulates provide a starting point for the consideration and resolution of practical problems through the development of audit theory (Flint 1988: 20; Mautz and Sharaf 1961: 45, 49). Mautz and Sharaf (1961: 50) stated that “financial statements and financial data are verifiable” and Flint (1988: 31) postulated that “the subject matter of auditing can be verified by evidence”. The inclusion of audit evidence as one of the fundamental audit

postulates emphasises the concept of audit evidence as a cornerstone of the audit process. (Refer to section 2.3 of chapter 2.)

Furthermore, the classic textbook *Montgomery's auditing* (O'Reilly et al 1999: 127) described audit evidence as the underlying data which substantiate the figures and explanations appearing in the financial statements. Messier et al (2010: 116) explained that the auditor collects evidence to reach an opinion about the fairness of financial statements. Vanasco et al (2001: 208) summed up the meaning of evidence as all the influences upon the mind of the auditor that affect his judgement and ultimately guide his decisions regarding the fair presentation of the financial statements.

Audit evidence is formally defined in ISA 500 *Audit evidence* (IAASB 2014k: ISA 500 par. 5) as the information used by the auditor to arrive at the conclusions on which the audit opinion is based, and must be such that an experienced auditor with no previous connection with the audit must be able to understand the audit evidence obtained and the conclusions reached thereon (IAASB 2014e: ISA 230 par. 8).

Mautz and Sharaf (1961: 82, 83) classified evidence into three broad categories, namely; natural evidence, which exists all around us; created evidence, which is brought forth through effort (for example, an auditor's own calculations); and rational argumentation, which follows logically from observed facts. They concluded that these three broad classes of evidence are not equally persuasive, with natural evidence (physical objects) being the most convincing evidence available and created evidence being equally compelling to the extent that it is equally simple and clear as natural evidence. The same may be true for rational argumentation if it consists of one or two simple steps of reasoning that can be easily understood; long and involved rationalisations however become more difficult to follow and therefore may be less convincing. (Mautz and Sharaf 1961: 84)

This inference by Mautz and Sharaf regarding the persuasiveness of evidence is consistent with observations made in a number of studies by epistemologists and philosophers. For example, Cohen (1977: 352) stated that "it may be rational to believe something yourself on evidence which does not make it completely certain ... but it is sensible to require better evidence than this when you are making assertions which, because they tend to generate beliefs in others, may rebound to affect your own credit." Similarly, Goldman (1986: 21) asserted that "evidential standards for a public claim may differ from those for a private belief." Consistent with these views Smith, Benson and Curley (1991: 294) stated that "because knowledge ... is widely shared, rigorous standards of justification must be applied in authenticating claims. Standards for personal belief need not be so demanding. Indeed, they cannot afford to be since practical affairs require action. For practical purposes, beliefs are knowledge surrogates that allow decisions to be made when relevant propositions cannot be justified as true."

In agreement with the preceding statements, the auditing standards also recognise that the audit evidence on which the auditor draws conclusions and bases the audit opinion is persuasive rather than conclusive (IAASB 2014c: ISA 200 par. 5). The audit opinion is an implicit expression of two conclusions based on the audit evidence collected and processed during the audit: (1) that the opinion is accurate; i.e. that the evidence collected is appropriate to support the opinion, and (2) that the opinion is justified; i.e. the evidence collected provides sufficient support for the opinion (Morton 2002: 95).

Concluding from the above, audit evidence can be seen as having a dual role in the opinion forming process; an "opinion-appropriateness" role and an "opinion-justification" role. Thus, audit evidence is fundamental to the audit process, as it is used by the auditor to arrive at the conclusions on which the audit opinion is based and the auditor must obtain sufficient appropriate audit evidence on which to base the audit opinion.

3.2.2 Sufficient appropriate audit evidence

The auditor lends credibility to financial statements by attesting to the reliability of such statements in the audit opinion (Budescu, Peecher and Solomon 2012: 19). Carrington (2010: 679) stated that “a sufficient audit is about a reliable ritual of verification that produces the comfort users need in order to trust the audited financial statements”. In order to arrive at the conclusions on which the audit opinion is based, the auditor uses audit evidence (IAASB 2014k: ISA 500 par. 5). However, the auditing standards require the auditor to conclude on whether sufficient appropriate audit evidence has been obtained in order to form that opinion (IAASB 2014q: ISA 700 par. 11). Consequently, it can be concluded that the audit opinion is dependent on the sufficiency and appropriateness of the audit evidence obtained. The grounding of the audit opinion in sufficient appropriate audit evidence is further emphasised through specific reference thereto in the auditor’s responsibility paragraph of the audit report, which states “that the audit evidence obtained is sufficient and appropriate to provide a basis for the audit opinion” (IAASB 2014q: ISA 700 par. 33). Thus, at a practical level, the task faced by the auditor is to gather evidence of adequate quantity (sufficiency) and quality (appropriateness) to support the audit opinion (Budescu et al 2012: 19).

“Sufficiency” and “appropriateness” of audit evidence is defined as follows in the International Auditing and Assurance Standards Board’s Glossary of Terms (IAASB Glossary) (IAASB 2014a: Glossary):

- “Sufficiency of audit evidence is the measure of the *quantity* of audit evidence. The quantity of the audit evidence needed is affected by the auditor’s assessment of the risk of material misstatement and also by the quality of such audit evidence” (own emphasis).

- “Appropriateness of audit evidence is the measure of the *quality* of audit evidence; that is, its relevance and its reliability in providing support for the conclusions on which the audit opinion is based” (own emphasis).

This study is specifically concerned with the quantity (sufficiency) of audit evidence. Sufficiency of audit evidence is a measure of the quantity of audit evidence; i.e. it relates directly to the extent of the audit procedures that the auditor determines must be executed to reduce audit risk to an acceptably low level. The quantity or extent of the audit evidence needed is affected by the auditor’s assessment of risk; the greater the risk, the more audit evidence is likely to be required, and also by the quality (appropriateness) of such evidence; less evidence may be needed the higher the quality. (IAASB 2014b: Framework par. 42 - 46; IAASB 2014k: ISA 500 par. A4, A5) Consequently, the sufficiency and appropriateness of evidence are interrelated and the auditor must select a combination of procedures to perform in order to examine sufficient appropriate evidence so that a reasonable level of assurance is obtained to support the opinion on the financial statements.

It is clear that audit evidence planning decisions require complex, multi-criteria judgements from the auditor (Wright and Mock 1988: 101). Whether sufficient appropriate audit evidence has been obtained to reduce audit risk to an acceptably low level that will enable the auditor to draw reasonable conclusions on which to base the audit opinion, is a matter of professional judgement (Causholli and Knechel 2012: 631; Perry 2011: 5; Schmutte and Duncan 2009: 32; Hayes 2007: 58). Hence it will require the application of relevant training, knowledge and experience, within the context provided by the auditing standards, in making informed decisions about the courses of action that are appropriate in the circumstances of the audit engagement (IAASB 2014a: Glossary).

While the auditing standards provide some guidance to assist the auditor in deciding the quantity (sufficiency) and quality (appropriateness) of audit

evidence to be obtained, they do not dictate exactly how much evidence needs to be gathered, or the quality thereof (Perry 2011: 5). With the minimal guidance provided by the auditing standards, the basis for determining what is sufficient appropriate evidence lies with the professional judgement of the auditor, which may mean that little consistency is achieved regarding the quantity and quality of the audit evidence obtained (Perry 2011: 5, 11). Although the auditor's professional judgement is important, the lack in explicit direction in the auditing standards can also be problematic and may have contributed to the IRBA identifying insufficient and/or inappropriate audit evidence as one of the major findings emanating from its audit engagement practice reviews (IRBA 2011: 4, 9). In response, Perry (2011: 12) called for stricter guidelines that provide more structure and detail as to the nature and extent of the evidence the auditor should collect in order to reach an audit conclusion. This call supports the purpose of this study, the objective of which is to develop a decision-making tool or model that provides more structure to the extent of audit evidence decisions. (Refer to section 3.6 for a discussion on the justification for modelling audit evidence.)

In conclusion, in order for the auditor to arrive at reasonable conclusions on which to base the audit opinion, the auditor needs to obtain both sufficient and appropriate audit evidence about whether the financial statements are free from material misstatement. In obtaining an appropriate quantity (sufficiency) and quality (appropriateness) of audit evidence on which to base the audit opinion the auditor also considers audit efficiency and effectiveness; i.e. the relationship between the cost of obtaining evidence and the usefulness of the information obtained. Sufficient appropriate audit evidence must be obtained, but the gathering of audit evidence should be limited once that goal has been achieved. Too much testing can make for a high quality, but overly expensive audit, but insufficient testing makes for a poor quality audit. (CICA 1980: 43) Audit efficiency and effectiveness is discussed in the next section of this chapter.

3.2.3 Audit efficiency and effectiveness

The auditor is required to determine the nature, timing and extent of audit procedures deemed necessary to gather sufficient appropriate audit evidence in order to support the audit opinion. However, in obtaining sufficient appropriate audit evidence auditors often struggle with the question of whether they are over or under auditing; with over auditing referring to efficiency: “Are we doing more than we need to do and wasting resources?” and under auditing relating to effectiveness: “Are we failing to meet our audit objectives?” (Hayes 2007: 58) The principle of efficiency relates to getting the most from the available resources; it conveys the relationship between resources employed and outputs delivered in terms of quantity, quality and timing. The principle of effectiveness, on the other hand, is concerned with meeting the objectives set and achieving the intended results. (INTOSAI 2013: ISSAI 300.2) Therefore, in planning the nature, timing and extent of audit procedures considered necessary to gather sufficient appropriate audit evidence, the auditor continually looks to improve efficiency, while maintaining the necessary effectiveness for each particular audit (Alderman and Tabor 1989: 55). That is, properly directing the audit effort is critical to an efficient and effective audit (Blay, Kizirian and Sneather 2008: 40).

The nature of auditing is such that it does not lend itself to being totally efficient in the sense of avoiding any work that is repetitive or redundant. An audit necessarily involves some retracing of transactions and re-performing of calculations. However, auditors attempt to achieve efficiency through effective evidential planning decisions regarding the nature, timing and extent of audit procedures. (Hayes 2007: 58) The auditing standards recognise this inherent struggle to efficiently and effectively plan the audit and use audit resources, by requiring the auditor to consider the relationship between the cost (efficiency) of obtaining evidence and the usefulness (effectiveness) of the information obtained. The standards however cautions that the matter of difficulty or

expense involved is not in itself a valid basis for omitting an evidence gathering procedure for which there is no alternative. (IAASB 2014b: Framework par. 46)

In order to achieve audit efficiency and effectiveness, the audit planning process should result in a cost-effective portfolio of procedures that are likely to identify material misstatements, thereby reducing audit risk to an acceptably low level. The auditor's challenge is to select a combination of audit procedures to conduct; i.e. tests of controls, substantive analytical procedures and tests of details, and of an appropriate quantity (extent) and quality (nature) in order to gather sufficient appropriate evidence to support an overall opinion on the financial statements. (Wright and Mock 1988: 101) The auditor must use professional judgement in evaluating the required quantity and quality of evidence, and thus its sufficiency and appropriateness, to support the audit report (IAASB 2014b: Framework par. 46). Therefore, the complex, multi-criteria evidential planning judgements about the nature, timing and extent of audit procedures are critical to the efficiency and effectiveness of an audit and the efficiency and effectiveness of an audit rest largely on the auditor's judgement regarding the sufficiency (extent) and appropriateness (nature) of the audit evidence (Mock and Wright 1993: 39; Wright and Mock 1988: 101).

Despite the fact that evidential planning decisions are complex and involve the exercise of professional judgement, there is little research on how such complex judgements are made in practice (Wright and Mock 1988: 102). Consequently, there is a need to develop and communicate over-arching principles to guide the auditor as he makes these difficult decisions and an integrated audit evidence planning model, as envisaged in this study, may assist in this regard (Hayes 2007: 59). (Refer to section 3.6 for a discussion on the justification for modelling audit evidence.)

Consequently, it can be concluded that evidential planning regarding the nature, timing and extent of audit procedures requires the auditor to make complex judgements regarding the sufficiency and appropriateness of the audit evidence

on which the audit opinion is based, thereby significantly impacting on the efficiency and effectiveness of the audit.

3.3 MATERIALITY

ISA 200 (IAASB 2014c: par. 11) indicates that the overall objective in conducting an audit of financial statements is to enable “the auditor to express an opinion as to whether the financial statements are prepared, in all *material* respects, in accordance with an applicable financial reporting framework” (own emphasis). Thus, through the reference to materiality in the overall objective of an audit, the concept of materiality is recognised as being central to auditing.

3.3.1 The concept of materiality

Financial reporting frameworks often discuss the concept of materiality in the context of preparing and presenting financial statements. As an example, the Conceptual Framework for Financial Reporting (IFRS Framework) (IASB 2014: par. QC11) considers information to be material if omitting or misstating it could influence decisions that users make on the basis of the financial information. The concept of materiality is also dealt with in the auditing standards, as the auditor is continually confronted with the need to make judgements about the financial information presented in the financial statements. In line with the IFRS Framework, the auditing standards consider misstatements in the financial statements to be material if they can individually or in aggregate be expected to influence the economic decisions of users taken on the basis of the financial statements. (IAASB 2014h: ISA 320 par. 2)

Consequently, it can be deduced that materiality is a fundamental characteristic of financial statements and therefore of importance to preparers of financial statements, auditors who make judgements about the fair presentation of

financial statements, as well as users who make accounting and business decisions based on the financial statements. This conclusion is supported by Fogarty et al (2006: 44) who stated that although the concept of materiality relates to auditing, it is rooted in accounting and user needs. Thus, when assessing materiality the auditor should consider the needs of users; in effect the auditor is required to put himself in the shoes of the users and to consider whether an item is material enough for users of the information to be influenced by it (Turley and Cooper 1991: 78). The higher the level of risk to the users, the higher the threshold of materiality needs to be (Chong and Vinten 1996: 60).

The concept of materiality therefore requires financial statements to be prepared, presented and audited to be accurate in all material respects and recognises some matters are more important for the fair presentation of the financial statements than other matters (Christensen, Glover and Wood 2012: 137; AICPA 2006: par. 3; Von Wielligh 2005: 196). This is also recognised in the audit opinion by the phrase “the financial statements present fairly, in all material respects”, in the illustrations of audit reports on financial statements in the appendix to ISA 700 *Forming an opinion and reporting on financial statements* (IAASB 2014q: par. A28). The illustrative audit report, in the auditor’s responsibility paragraph, goes further to state that the audit is designed “to obtain reasonable assurance about whether the financial statements are free from material misstatement” (IAASB 2014q: ISA 700). The reference to “obtaining reasonable assurance” in the audit report is intended to communicate an understanding to users that financial statements cannot be perfectly accurate down to the last cent (Zabel and Benjamin 2002: 1). The phrase informs users that the auditors do not guarantee or ensure the fair presentation of the financial statements and that some risk remains that the financial statements are materially misstated even when the opinion is unqualified. In other words, an audit provides a reasonable level of assurance, but it is not an absolute assurance or guarantee. (IAASB 2014c: ISA 200 par. 5; Law 2008: 162)

It can therefore be deduced that the issue of materiality is central to the concept of reasonable assurance; materiality recognises that some matters are important to users' perception of the fair presentation of the financial statements, while other matters are less important. The auditor is responsible for planning and performing the audit to obtain reasonable assurance that material misstatements in the financial statements are detected.

3.3.2 Materiality judgement and the audit process

As discussed in the previous section, materiality is a key concept in the theory and practice of auditing (Messier, Martinov-Bennie and Eilifsen 2005: 155). Materiality is used in all phases of the audit of financial statements and as such is pervasive throughout the audit process, from planning the audit to evaluating the results of audit testing when formulating the audit opinion (Del Corte, García and Laviada 2010: 458). The auditor's consideration of what is regarded as being material at each of the phases of the audit process is a matter of professional judgement (IAASB 2014b: Framework par. 47; Houghton, Jubb and Kend 2011: 484). At the audit planning phase the auditor's judgement regarding materiality is used to develop the scope of the audit and influences the level of evidence to be collected to support the audit opinion, and at the audit completion phase, detected misstatements are assessed against materiality in order to form an audit opinion on the fair presentation of the financial statements (IAASB 2014h: ISA 320 par. 5; Messier et al 2005: 156; Turley and Cooper 1991: 2).

In their review of the research on materiality since 1982, Messier et al (2005: 163) observed that, although many rules of thumb for calculating materiality exist, there are significant differences in the way auditors assess materiality, depending on such factors as, for example, auditor experience, audit firm type and client industry, but that judgement plays a significant role in determining materiality. Although the concept of materiality is clearly defined in theory, the

auditing standards and professional auditing literature offer little practical guidance on the topic, with the result that the way auditors apply and use this concept in practice is one of the more controversial and argued over subjects in the field of auditing (Del Corte et al 2010: 458; Glover, Prawitt, Liljegren and Messier 2008: 42). This was supported by Chen, Zhang and Pany (2008: 240) who concluded that the authoritative guidance on determining materiality is very general, and that non-authoritative advice, tools and guidance therefore become particularly important. According to Acito, Burks and Johnson (2009: 663), the standard setters have opted to view materiality as a matter for professional judgement rather than providing bright-line rules for assessing materiality. They concluded that this leaves management and auditors to “jointly negotiate a subjectively determined, but unobservable, materiality assessment” when assessing and correcting misstatements (Acito et al 2009: 664). Houghton et al (2011: 482) further found that there is an absence of shared understanding about the concept of audit materiality between the relevant stakeholder groups of auditors, auditees, users, standards setters and regulators; that is, differences exist in perceptions of the meaning, application, importance and consequences of the concept of audit materiality and the level of understanding held about its relevance to the audit function.

It can be concluded that the variation in determining materiality in practice may lead to the scope of audit work, and the extent of audit evidence, differing across audits with similar characteristics, thus placing the auditor in a difficult situation and impacting on both the efficiency and effectiveness of the audit. Further, as the auditor's judgement of materiality is influenced by the auditor's perception of the needs of users of financial statements, materiality judgements must be made in light of surrounding circumstances and must consequently involve both quantitative and qualitative considerations. (IAASB 2014h: ISA 320 par. 4; Houghton et al 2011: 484)

3.3.3 Materiality and the size (quantity) and nature (quality) of misstatements

When applying judgement in assessing whether misstatements in the financial statements are material, the auditor is required to consider both the size (quantity) and nature (quality) of misstatements (IAASB 2014j: ISA 450 par. 11). The materiality amount (quantity) determined by the auditor does not necessarily establish a threshold below which misstatements will always be evaluated as immaterial. The circumstances and nature of some misstatements may result in them being material even if they are below materiality. Consequently, the auditor must consider both the size (quantity) and nature (quality) of uncorrected misstatements when evaluating whether they have a material effect on the financial statements. (IAASB 2014h: ISA 320 par. 6)

A holistic approach to materiality assessment is not only recognised by the standard setters (IAASB 2014h: ISA 320; IAASB 2014j: ISA 450), but also by regulators such as the United States Securities and Exchange Commission (US SEC) (1999) and other researchers (Del Corte et al 2010; Acito et al 2009; Zabel and Benjamin 2002). Zabel and Benjamin (2002: 3) found broad acceptance and endorsement of the multi-faceted approach to materiality; i.e. that materiality is not just a number and that materiality judgements must not be limited to numerical thresholds, but must carefully consider the full range of surrounding circumstances in determining whether misstatements are material. Acito et al (2009: 664) cautioned against the use of quantitative rules of thumb for materiality assessment, stating that exclusive reliance on percentage or numerical thresholds has no basis in either the accounting literature or the law. Del Corte et al (2010: 477) further acknowledged that the subjective judgements about materiality that involve both quantitative and qualitative considerations, improve the audit and consequently the credibility of the audited financial statements.

The importance of both quantitative and qualitative materiality decisions is also emphasised by the US SEC in their Staff Accounting Bulletin (SAB) no. 99 *Materiality* (US SEC 1999). SAB 99 (US SEC 1999: 1) unequivocally states that “exclusive reliance on certain quantitative benchmarks to assess materiality in preparing financial statements and performing audits of those financial statements is inappropriate; misstatements are not immaterial simply because they fall beneath a numerical threshold.” SAB 99 (US SEC 1999: 2) recognises that quantitative materiality is only the beginning of an analysis of misstatements and “that exclusive reliance on this or any percentage or numerical threshold has no basis in the accounting literature or the law“. SAB 99 mandates a more comprehensive assessment of all relevant considerations, including surrounding circumstances and the factual context in which the user of the financial statements would view the financial statement item. The overall conclusion being that the auditor must consider both quantitative and qualitative factors in assessing an item's materiality. (US SEC 1999: 2)

Both ISA 450 (IAASB 2014j: par. A16) and SAB 99 (US SEC 1999: 3) list a number of qualitative factors which might cause a low value misstatement to be material, including, for example, whether a misstatement: (a) changes a loss into a profit or vice versa; (b) masks a change in earnings or other trends; (c) affects ratios used to evaluate the entity's financial results; (d) affects compliance with debt covenants; or (e) increases management compensation. These qualitative factors focus on the subjective intentions and motivations of those involved in making disclosure decisions, without reference to the economic significance of the information in question (Jenkins 2005: 24).

Thus, it is evident that materiality should be determined with respect to the total mix of available information, taking cognisance of the full range of context and all the relevant circumstances. Magnitude by itself, without regard to the nature and circumstances in which the judgement has to be made, will not generally be a sufficient basis for a materiality judgement. Consequently, judgements about

materiality should consider both quantitative and qualitative factors, as qualitative factors regarding the nature and circumstance of a quantitatively small misstatement may render the misstatement material. It can be concluded that as a result of the interaction of quantitative and qualitative considerations in materiality judgements, misstatements of relatively small amounts can have a material effect on the financial statements.

3.3.4 Materiality and audit evidence

As discussed in section 3.3.2, the auditor applies judgement regarding the materiality concept both at the audit planning phase and at the audit completion phase. The determination of “planning materiality” is an important judgement made by the auditor as it determines the precision required from the audit examination of audit evidence and provides the basis for deciding the nature, timing and extent of audit testing (IAASB 2014h: ISA 320 par. 6; AICPA 2006: 27; CICA 1980: 43). Materiality is also one of the few key decision variables in the audit process that can be adjusted by the auditor (Turley and Cooper 1991: 70).

The extent of audit testing must be sufficient to enable the auditor to assess the fair presentation of the financial statements on which he is to express an opinion, based on the results of the audit evidence obtained from those tests. In other words, sufficient testing should be carried out to provide evidence of the existence of any material misstatements in the financial statements and the extent of testing is dependent on the materiality concept; i.e. on the size and nature of misstatements that the auditor is willing to accept in the financial statements without qualifying his opinion. (CICA 1980: 42) The extent of audit evidence required to obtain reasonable assurance that the financial statements do not contain a material misstatement varies inversely with the auditor’s materiality judgement; the lower materiality the greater the extent of audit

evidence and effort required and vice versa (Blokdijk, Driehuisen and Dan 2003: 297; CICA 1980: 43).

It is therefore possible to deduce that in the audit context, materiality relates to the level of audit evidence required to obtain reasonable assurance that the financial statements do not contain a material misstatement. Accordingly, the auditor's judgement of materiality directly influences the determination of the extent of evidence to be collected to support the audit opinion and helps to guide the planning judgements regarding the nature, timing and extent of audit testing.

3.4 RISK

The auditor's overall objective in conducting an audit is to obtain reasonable assurance that will enable him to express an audit opinion as to whether the financial statements are free from material misstatement (IAASB 2014c: ISA 200 par. 11). However, there is a risk that the auditor may express an inappropriate audit opinion; i.e. an unqualified opinion when the financial statements are in fact materially misstated, or a qualified opinion when the financial statements are free from material misstatement (IAASB 2014c: ISA 200 par. 13). In order to address this risk the auditor must identify, assess and respond to this risk by obtaining sufficient appropriate audit evidence (IAASB 2014c: ISA 200 par. 7). Thus, the concepts of audit evidence and risk are inter-related.

3.4.1 Risk and assurance

The purpose of an audit is to enhance the degree of confidence of the intended users in the financial statements (IAASB 2014c: ISA 200 par. 3). The auditor is tasked with providing reasonable assurance that the financial statements are

free from material misstatement (IAASB 2014c: ISA 200 par. 5). This is reflected in the illustrative audit report in the appendix to ISA 700 *Forming an opinion and reporting on financial statements*, which states that the audit is designed to obtain reasonable assurance about whether the financial statements are free from material misstatement (IAASB 2014q: ISA 700).

The use of the term “reasonable assurance” is intended to indicate to the users that an audit cannot be expected to completely eliminate the possibility that material misstatements exist in the financial statements (Law 2008: 162). This is because of the inherent limitations of an audit such as management override, collusion among employees, faulty decision-making and human error in any system of internal control, which result in most of the audit evidence on which the auditor draws conclusions and bases the audit opinion, being persuasive rather than conclusive (IAASB 2014c: ISA 200 par. 5; IAASB 2014g: ISA 315 par. A46, A47). The inherent limitations of an audit further arise from the use of audit testing, the need for the audit to be conducted within a reasonable period of time and at a reasonable cost, the nature of financial reporting, which includes assessing the accounting principles used and significant estimates made by management, and the application of subjective professional judgement on the part of the auditor (IAASB 2014c: ISA 200 par. A45; CICA 1980: 42). The reference to “reasonable assurance” in the audit report is therefore intended to indicate to the users that absolute certainty in the execution of an audit is neither achievable nor economically feasible and that the auditor does not guarantee the fair presentation of the financial statements (Alderman and Tabor 1989: 57 - 59). The phrase communicates that there is some risk, referred to as “audit risk”, that the financial statements might be materially misstated when the opinion is unqualified or that the financial statements might be without material misstatements when the opinion is qualified. In other words, an audit provides a reasonable level of assurance, but it is not an absolute assurance or guarantee (Law 2008: 162).

One of the justifications for having an audit in the first place relates to the credibility of the financial statements; that is, the financial statements would otherwise be less reliable to the users (Turley and Cooper 1991: 55). The auditor is therefore required to perform the audit to reduce audit risk to a level that is acceptable for purposes of disclosing his opinion on the financial statements, thereby enabling the users to rely on the financial statements. In planning and executing the audit, the auditor should focus on those areas of the financial statements where the risk of misstatement is the greatest. (Fogarty et al 2006: 43) More attention should be paid to high-risk aspects than those with low risk. The risk assessment phase of the audit is therefore not just a planning tool, but an integral part of evidence gathering as it directs the auditor's attention to issues that require further investigation (Fogarty et al 2006: 44).

3.4.2 The risk-based audit

Over the last decade or so, increasing emphasis has been placed on the auditor's risk assessment, with today's audits being characterised as employing a "risk-based" approach (Fukukawa and Mock 2011: 76, 77). The importance of risk assessment in audit theory, research and practice is, for example, stressed by Budescu et al (2012: 19) who stated that risk assessment has evolved to the point where it has become the "descriptive lens" by which auditors plan and execute the audit. Bell, Peecher and Solomon (2005: 5, 9) went further by describing the risk-based audit approach as one of the most significant audit developments and the PCAOB (2007: 7) "encourages a risk-based approach to ... audits of ... financial statements".

The emergence of the risk-based approach to auditing is also evidenced through Kochetova-Kozloski and Messier's (2011: 150) and De Martinis et al's (2011: 544) statement that research on various aspects of risk-based auditing is pervasive and increasing, as well as by the fact that major audit firms have adopted or changed their audit methodologies to a risk-based approach

(Fukukawa and Mock 2011: 76; Curtis and Turley 2007: 439). The assessment of and response to risks in the execution of an audit are also firmly established in the ISAs, with the processes related to risk-based auditing reflected in, for example, ISAs 300, 315 and 330 (IAASB 2014f: ISA 300; IAASB 2014g: ISA 315; IAASB 2014i: ISA 330).

At an overview level, performing a risk-based audit involves three main steps. The first step requires the auditor to obtain an understanding of the entity and its environment and to assess the risks of material misstatement by performing risk assessment procedures. The second step requires the auditor to use that knowledge to assess the risks of material misstatement at both the overall financial statement level and at assertion level for classes of transactions, account balances and disclosures. The third step requires the auditor to obtain audit evidence by designing and performing audit procedures that respond to the assessed risk of material misstatement for the relevant class of transactions, account balance, disclosure at assertion level. (IAASB 2014g: ISA 315 par. 3; Kochetova-Kozloski and Messier 2011: 151) Consequently, it is evident that an important requirement in the ISAs is the need to link identified risks to the audit actions designed to respond to and address those risks (Fogarty et al 2006: 45). The audit should be a continuous, dynamic and recursive process of risk assessment, with a corresponding update to the risk response that the auditor implements to obtain sufficient appropriate audit evidence (IAASB 2014g: ISA 315 par. A1; Bell et al 2005: 5).

The underlying principle of the risk-based audit approach is that the auditor should devote more resources to classes of transactions, account balances and disclosures that are likely to be misstated and less to those that are less likely to be misstated (Bowlin 2011: 1231). The adoption of a risk-based approach is associated with changes in the scope of the auditor's planning and risk assessment processes and in the related evidence gathering procedures (Blay et al 2008: 39; Curtis and Turley 2007: 439). The risk-based audit approach provides a framework for enhanced audit efficiency and effectiveness through

the focus of audit procedures to respond to assessed risks, both at the overall financial statement level and at assertion level (Bowlin 2011: 1231; Dusenbury, Reimers and Wheeler 1996: 12). In determining a sufficient and appropriate audit response to the auditor's understanding and assessment of client risks, the risk-based approach also improves audit quality (De Martinis et al 2011: 546). Thus, the risk-based audit approach encapsulates the deduction that audit efficiency and effectiveness, and ultimately audit quality, are determined by an appropriate and sufficient response to the auditor's understanding and assessment of the client's risks, when he is obtaining audit evidence.

To conclude; in the broadest sense, the risk-based approach provides a framework for integrating the auditor's risk assessment, carried out in the planning phase of the audit, and formalising its link with the scope of audit testing that follows. Thus, the risk-based approach allows for the auditor's assessment of risks to determine the nature, timing and extent of audit procedures necessary to obtain sufficient appropriate audit evidence. This evidence enables the auditor to express an opinion on the financial statements at an acceptably low level of audit risk.

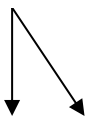
3.4.3 The audit risk model

As discussed in the previous section, current auditing practice regarding evidential planning requires that audit decisions concerning the nature, timing and extent of audit procedures should be risk-based (Blay et al 2008: 39; Fukukawa et al 2006: 41). This approach is prescribed in the ISAs and the standards acknowledge that auditors may employ various approaches to the assessment of risks and that some auditors find the use of a model helpful for purposes of applying a risk-driven audit approach, when assessing risk at assertion level (IAASB 2014c: ISA 200 par. A36).

One practical example is the “audit risk model”, as established in the American Institute of Certified Public Accountants’ (AICPA) (2006: par. 26) Statement on Auditing Standards (SAS) No. 107 *Audit risk and materiality on conducting an audit*. Although the ISAs do not explicitly contain the audit risk model, the concepts are included in the ISAs (IAASB 2014c: ISA 200 par. A32 - A44). As one of the significant and wide-ranging developments in auditing, the audit risk model is also firmly entrenched in practice (De Martinis et al 2011: 544; Fukukawa and Mock 2011: 76; Kinney 2005: 90). It has provided a conceptual framework for audits of financial statements for more than 40 years, by assisting auditors to assess risks at assertion level and use that assessment to determine the nature, timing and extent of audit procedures (Akresh 2010: 65). That is, it promotes a risk-focused approach to allocating audit effort (Blay et al 2008: 39) and provides a framework or structure for the collection of audit evidence (Turley and Cooper 1991: 21). Stilwell and Elliott (1985: 67) describe the audit risk model as “an organised concept for the auditor’s efforts to plan and execute effective, efficient audits”. Blay et al (2008: 40) went further and stated that the audit risk model “assists auditors in the judgement processes of assessing risks and developing an efficient audit plan ... that determine the appropriate mix of audit evidence ... as well as the nature, timing and extent of audit evidence collection”.

At assertion level (the level of focus of this study), the audit risk model expresses audit risk as a function of a number of risk components and it can be represented in a formula as follows (IAASB 2014a: Glossary; Vitalis 2012: 9; De Martinis et al 2011: 546; Messier et al 2010: 72):

$$AR = RMM \times DR$$



$$AR = (IR \times CR) \times DR$$

where:

AR: audit risk

RMM: risk of material misstatement

DR: detection risk

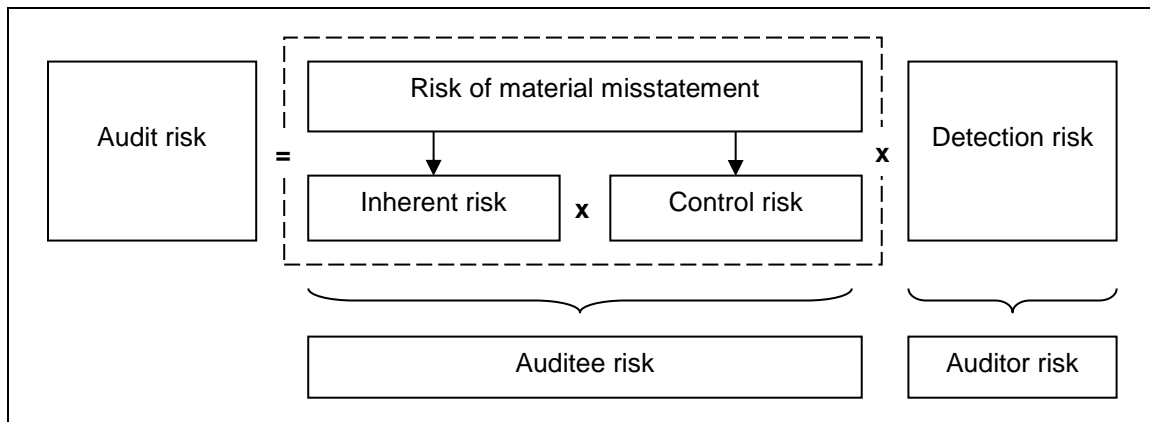
IR: inherent risk

CR: control risk

The audit risk model decomposes the audit risk of incorrectly concluding that no material misstatements exist in the financial statements into risk of material misstatement; the risk that the financial statements are materially misstated prior to audit, and detection risk; the risk that the auditor will not detect a material misstatement that exists. Risk of material misstatement consists of two components; inherent risk, which reflects the susceptibility of an assertion about a class of transactions, account balance or disclosure in the financial statements to a material misstatement before consideration of any related controls, and control risk; the risk that material misstatements that could occur in an assertion will not be prevented, detected or corrected on a timely basis by the internal controls. (IAASB 2014a: Glossary)

Put differently, a misstatement may or may not occur, which relates to inherent risk; when a misstatement occurs, controls may or may not detect and correct it, which relates to control risk; when a misstatement is not detected by controls, the auditor may or may not detect it, which relates to detection risk. When a misstatement is not detected by controls or the auditor, there is a misstatement in the audited financial statements, which relates to audit risk. (Akresh 2010: 68; Waller 1993: 786) Therefore, the audit risk model assumes that for a material misstatement to exist in the audited financial statements a misstatement must occur (IR), controls do not detect it (CR) and it is not detected by the auditor (DR) (Messier and Austen 2000: 120).

The audit risk model at assertion level is schematically illustrated in diagram 3.1.

Diagram 3.1 The audit risk model at assertion level

The ISAs indicate that the audit risk model may be expressed in mathematical terms (IAASB 2014c: ISA 200 par. A36), but do not require a literal use or application of the model and state that it expresses the general relationship of the risks associated with the auditor's assessment of inherent and control risks and that it is not intended to be a mathematical formula including all factors that may influence the determination of the individual risk components (Akresh 2010: 67; AICPA 2006: par. 26). The ISAs further state that the way the auditor considers these risk components and combines them is a matter of professional judgement, rather than a matter capable of precise measurement (IAASB 2014c: ISA 200 par. A32). In fact, Allen, Hermanson, Kozloski and Ramsey (2006: 159) concluded that the audit risk model is sound as a conceptual tool, but that it has some significant limitations as a mathematical equation. It is therefore debatable whether precise mathematical multiplication principles should be attributed to the model. Consequently, as proposed by Akresh (2010: 68), it may be more appropriate to express the audit risk model in a formula using the function symbol because it is not clear what the form of the model should be:

$$AR = f(RMM, DR)$$

$$\text{with } RMM = f(IR, CR)$$

Expressing the audit risk model as “AR = RMM x DR” or “AR = f (RMM, DR)” is a way of conveying the inverse relationship between the assessed risk of material misstatement and detection risk. Thus, for a given level of audit risk, the acceptable level of detection risk bears an inverse relationship to the assessed risk of material misstatement at assertion level. (IAASB 2014c: ISA 200 par. A42) The compensatory nature of the audit risk model implies that lower risk in any one component of audit risk will offset higher risk in a combination of the other risk components (Bell et al 2005: 9). In other words, in order to maintain overall audit risk at an acceptable level when the risk of material misstatement (inherent risk and/or control risk) is high, the auditor must reduce detection risk. Detection risk is reduced by increasing substantive testing accordingly, thereby still achieving the targeted level of overall audit risk. (Hogan and Wilkins 2008: 219, 221) Therefore, any change in the risk of material misstatement that the auditor believes exists will impact the nature, timing and extent of the work that will have to be done by the auditor in order to reduce detection risk to a level that will result in the planned level of audit risk. More specifically with reference to the extent of audit work, if the auditor assesses the risk of material misstatement as low, the acceptable level of detection risk is correspondingly higher and less audit work will be required. As a result, it can be deduced that even where the risk exists that the financial statements may be materially misstated prior to audit, the auditor can still provide an unqualified opinion by appropriately adjusting the nature, timing and extent of audit testing.

Risk of material misstatement, or the “(IR x CR)” component of the audit risk model, exists independently of the audit since it represents the risk that a material misstatement exists prior to the audit. The auditor has no direct control over this risk; its level is a function of the auditee and its environment. Consequently, it is sometimes referred to as auditee risk. (Messier and Austen 2000: 120) The ISAs do not ordinarily refer to inherent risk and control risk separately, but rather to a combined assessment of the risk of material

misstatement, where the risk of material misstatement is the combination of the assessments of risks and related controls. The ISAs do however allow the auditor to assess inherent and control risks together or separately, depending on preference and practical considerations. (IAASB 2014c: ISA 200 par. A40) The focus of this study is on a combined risk assessment. This focus is warranted in light of the results of various studies that indicate that many audit firms have shifted from separate to combined risk assessments, making the latter the predominant approach to the determination of auditee risk (Miller, Cipriano and Ramsay 2012: 449; Vandervelde, Tubbs, Schepanski and Messier 2009: 147; Bedard, Simnett and Devoe-Talluto 2001: 84; Martinov and Roubuck 1998: 122).

The risk of material misstatement form the theoretical starting point for designing further audit procedures (Fogarty et al 2006: 49) and the auditor must assess the risk of material misstatement in order to determine the acceptable level of detection risk given a planned level of audit risk (Messier and Austen 2000: 120). The acceptable level of detection risk bears an inverse relationship to the assessed risk of material misstatement at the assertion level for a given level of audit risk (IAASB 2014c: ISA 200 par. A42). Detection risk in turn influences the testing to be performed during the audit; it relates to the nature, timing and extent of the auditor's procedures that are determined by the auditor to reduce detection risk and thereby audit risk, to an acceptably low level. For example, the greater the risk of material misstatement the auditor believes exists, the less the detection risk that can be accepted and, accordingly, the more persuasive (both in nature and extent) the required audit evidence needs to be. As detection risk is a function of the nature, timing and extent of the audit procedures performed, it implies that detection risk is also a function of the efficiency (getting the most from the available resources) and effectiveness (achieving the intended results) of the audit procedures and of their application by the auditor. (IAASB 2014c: ISA 200 par. A43) Consequently, detection risk and by inference audit risk, lies with the auditor and is therefore sometimes

referred to as auditor risk (De Martinis et al 2011: 546). Detection risk however can only be reduced, not eliminated, because of the inherent limitations of an audit (IAASB 2014c: ISA 200 par. A44). (Refer to section 3.4.1 for a discussion on the inherent limitations of an audit.) Thus, evaluating detection risk and audit risk when using the audit risk model involve considerable professional judgement on the part of the auditor.

In conclusion, the audit risk model articulates the relationship between risk and audit evidence. The audit risk model is used to better plan and perform audit procedures to respond to the assessed risk of material misstatement by focussing the nature, timing and extent of audit procedures on those areas where the risk of misstatement is the greatest in order to reduce the risk of material misstatement to an acceptable level and achieve an efficient and effective outcome. The interaction between risk and the nature, timing and extent of audit evidence is explored and discussed further in section 3.5.3.

3.5 NATURE, TIMING AND EXTENT OF EVIDENCE GATHERING PROCEDURES

The auditor's assessment of the risk of material misstatement at the assertion level provides a basis for considering the appropriate audit strategy and plan for further audit procedures. When responding to the assessed risks the auditor must design and perform audit procedures whose nature, timing and extent are based on and are responsive to those risks and there should be a clear linkage between the nature, timing and extent of the audit procedures and the assessed risk at assertion level. (IAASB 2014i: ISA 330 par. A4, A8)

3.5.1 The nature, timing and extent of evidence gathering procedures in response to assessed risk

Mock and Wright (1999: 55) described audit planning as a two-stage process: risk assessment and evidence planning. The risk assessment phase involves identification of important risk factors that impact the likelihood of material misstatement at assertion level, followed by an assessment of the level of risk in order to determine which classes of transactions, account balances and disclosures to focus on. The evidence planning phase requires the auditor to determine the audit evidence needs (nature, timing and extent of tests) for the particular circumstances of the client in order to provide a basis for expressing an audit opinion. (Vitalis 2012: 9)

The ISAs also require the auditor to design and perform audit procedures whose nature, timing and extent are based on and are responsive to the assessed risks (IAASB 2014i: ISA 330 par. 6). This is further supported by the application of the audit risk model, which prescribes that the auditor's risk assessment should affect the gathering of audit evidence (Blay et al 2008: 40; Fogarty et al 2007: 59). Therefore, the auditor must establish an overall audit strategy that sets the scope, timing and direction of the audit, subject to the completion of the auditor's risk assessment procedures (IAASB 2014f: ISA 300 par. 7, A8). After the risks of material misstatement have been assessed and the overall audit strategy has been established the auditor must develop and tailor the audit plan to be responsive to the identified risks, and in which the nature, timing and extent of the audit procedures are set out in a manner that, when performed, will result in the reduction of audit risk to an acceptably low level (IAASB 2014f: ISA 300 par. 9). The application of a standard audit strategy to all audits will generally not be responsive to the identified risks of material misstatement on a specific audit, and will therefore not be an appropriate response under the ISAs (IAASB 2014i: ISA 330 par. 6). Consequently, the evidence planning phase of the audit, in terms of which the auditor designs the nature, timing and extent of audit procedures appropriate to the specific

circumstances of the client, is critical. This study is specifically concerned with the extent of audit evidence. Therefore, the concepts of the “nature” and the “timing” of audit procedures are not explored further, but are only considered with reference to their ISA definitions. The concept of the “extent” of audit procedures is explored from both an ISA and literature viewpoint.

3.5.1.1 *The nature of audit procedures*

The nature of audit procedures has a two-fold association and refers to both their purpose and type. The purpose of audit procedures relates to assurance being obtained from tests of controls or from substantive procedures; with a further choice between substantive analytical procedures vs. tests of details for the latter. The type of audit procedures relates to evidence being obtained through inspection, observation, inquiry, confirmation, recalculation, re-performance or analytical procedures. (IAASB 2014i: ISA 330 par. A5)

The auditor’s assessment of risks may impact the types of audit procedures to be performed, as well as the nature and combination of the procedures selected by the auditor for execution (IAASB 2014i: ISA 330 par. A9). For example, when the assessed risk for a specific class of transactions, account balance or disclosure or assertion is high, the auditor may plan to obtain sufficient appropriate audit evidence through both inspection of documentation and external confirmation, or the auditor may elect to address the assessed risk by performing a combination of both tests of controls and tests of details.

3.5.1.2 *The timing of audit procedures*

The timing of audit procedures refers to when they are performed, or the period or date to which the audit evidence relates (IAASB 2014i: ISA 330 par. A6).

Audit procedures may be performed at an interim date or at the period end or may be performed unannounced or at unpredictable times (IAASB 2014i: ISA 330 par. A11). For example, when the risk of material misstatement is high, the auditor may decide it is more appropriate to perform substantive procedures regarding the rights and obligations / occurrence of a specific class of transactions, account balance or disclosure at the period end rather than at an earlier date.

3.5.1.3 The extent of audit procedures

The extent of audit procedures refers to the quantity of a specific audit procedure to be performed; for example, a sample size or the number of observations of a control activity (IAASB 2014i: ISA 330 par. A7).

The extent determines the amount or scope of testing. The extent of an audit procedure is established through the judgement of the auditor after considering the materiality, the assessed risks of material misstatement, and the degree of assurance the auditor plans to obtain. In general, the extent of audit procedures increases as the risk of material misstatement increases. However, increasing the extent of an audit procedure is effective only if the timing and nature of the procedure are relevant to the specific risk. (IAASB 2014i: ISA 330 par. A15) For example, when the risk of material misstatement regarding the completeness of a specific class of transactions, account balance or disclosure is high, it may be appropriate to increase the sample size of items to be tested. This study is specifically concerned with the extent of audit evidence and the extent of audit procedures is explored in more detail from a literature point of view in section 3.5.4 below.

3.5.2 The extent of substantive analytical procedures, tests of controls and tests of details

The three types of further audit procedures that the auditor has at his disposal to obtain sufficient appropriate audit evidence differ in focus. Substantive analytical procedures involve the comparison of recorded financial statement amounts with expectations developed by the auditor through the analysis of plausible relationships among both financial and non-financial data. (IAASB 2014n: ISA 520 par. 4, A2) Substantive analytical procedures examine whether a recorded financial statement amount is subject to material misstatement without considering the details of the individual transactions that comprise the recorded amount (Messier, Simon and Smith 2013: 140; Brewster 2011: 915; Dănescu and Spătăcean 2009: 25; Glover, Prawitt, Wilks and McDaniel 2005: 200; Knechel 1988: 74). Thus, substantive analytical procedures are concerned with the reasonableness or the precision of the expectation developed by the auditor based on known relationships.

In contrast, tests of controls and tests of details focus on the individual control activities and transactions that result in the recorded financial statement amounts (Akresh 2010: 70; Kinney 1979: 456). When designing tests of controls and tests of details, the auditor determines means of selecting items for testing that are effective in obtaining sufficient appropriate audit evidence to enable the auditor to draw reasonable conclusions on which to base the audit opinion. Depending on the particular circumstances, the means of selecting items for testing that are available to the auditor include 100% examination, selecting specific items, sampling or a combination of these means. (IAASB 2014k: ISA 500 par. A52) However, in designing tests of controls and tests of details, ISA 330.A47 (IAASB 2014i) states the means of selecting items for testing and the extent of testing is generally thought of in terms of sampling and sample size, which is also the approach adopted in this study.

The justification for making use of samples when performing tests of controls and tests of details vs. selecting all items or selecting specific items for testing, as well as applying expectations that are sufficiently precise instead of absolutely precise when performing substantive analytical procedures, relate back to the auditor's overall objective in conducting an audit of the financial statements (Whittington and Pany 2010: 327; AICPA 2008: par. 2.15; Hitzig 2004: 33; Blocher and Patterson 1996: 54; Kinney and McDaniel 1996: 53). That is, to obtain a reasonable level of assurance rather than absolute certainty that the financial statements are free from material misstatement (IAASB 2014c: ISA 200 par. 5).

The sufficiency of audit procedures or the extent of audit evidence judged necessary to enable the auditor to obtain reasonable assurance that the financial statements are free from material misstatement, is determined based on considerations of materiality, assessed risks of material misstatement and the level of assurance required (IAASB 2014b: Framework par. 47 - 49). Generally, the extent of audit procedures increases as the risk of material misstatement and the required level of assurance increase; i.e. the auditor must obtain more persuasive audit evidence the higher the auditor's assessment of risk (IAASB 2014i: ISA 330 par. A19). This may typically be achieved by increasing sample sizes for tests of controls and tests of details or by performing substantive analytical procedures at more precise levels (IAASB 2014o: ISA 530 par. A10; Hitzig 2004: 33; Blocher and Patterson 1996: 54; Kinney and McDaniel 1996: 53).

The purpose of this study is to develop an audit evidence planning model that is specifically concerned with the extent of substantive analytical procedures (through the quantification of precision intervals) and the extent of tests of controls and tests of details (by means of determination of sample sizes). As such, the following sections briefly highlight these concepts, but only to the level necessary for the development of the audit evidence planning model and the

illustration of the effect of the model on the extent of audit evidence derived from substantive analytical procedures, tests of controls and tests of details.

3.5.2.1 Substantive analytical procedures

Analytical procedures are employed at various stages of the audit. The ISAs require the use of analytical procedures during planning as risk assessment procedures (IAASB 2014g: ISA 315 par. 6(c)) and at the finalisation of the audit when forming an overall conclusion on the financial statements (IAASB 2014n: ISA 520 par. 1). In addition to using analytical procedures during the risk assessment and conclusion phases of the audit, analytical procedures may also be employed as substantive procedures to obtain sufficient appropriate audit evidence regarding the fair presentation of classes of transactions, account balances and disclosures (IAASB 2014n: ISA 520 par. 1).

The auditor uses analytical procedures during the planning phase of the audit to better understand the entity and its environment, as well as to identify potential problem and high risk areas, in order to better plan the nature, timing and extent of further audit procedures. At the finalisation of the audit, analytical procedures are used as an overall review of the financial statements for purposes of evaluating the reasonableness and consistency of the financial statements with the audit results and the auditor's knowledge of the entity. (Samaha and Hegazy 2010: 887; Dănescu and Spătăcean 2009: 25; Koskivaara 2007: 334)

Analytical procedures conducted at the planning and conclusion of the audit, are not primarily focused on substantive audit evidence; as such these analytical procedures are often conducted at a high level; for example, at financial statement level. The objective of employing analytical procedures as substantive procedures is to obtain audit evidence about the fair presentation at the class of transactions, account balance or disclosure level. Substantive analytical procedures are performed in the execution phase of an audit to either

indicate the existence of a possible misstatement or to provide reliable audit evidence that recorded financial statement amounts are free from material misstatement. (Glover et al 2005: 200) This study is specifically concerned with the use of analytical procedures as substantive procedures. For purposes of audit efficiency and effectiveness, substantive analytical procedures may be used in place of and in combination with tests of details (Samaha and Hegazy 2010: 888; Biggs, Mock and Simnett 1999: 45; Hirst and Koonce 1996: 457).

Substantive analytical procedures are reasonableness tests of classes of transactions, account balances and disclosures in the financial statements and involve the evaluations of financial statement information through the analysis of plausible relationships among both financial and non-financial data, such as payroll costs to number of employees, as well as among elements of financial information that would be expected to conform to a predictable pattern based on the entity's experience, such as gross margin percentages (IAASB 2014n: ISA 520 par. 4, A2). Thus, substantive analytical procedures are concerned with the comparison of recorded amounts to expected amounts developed by the auditor. The comparison assists the auditor in identifying significant differences for investigation of possible material misstatements in the recorded amounts and supports the auditor's decisions regarding the reasonableness of the amounts shown in the financial statements (IAASB 2014n: ISA 520 par. 5).

The basic rationale underlying substantive analytical procedures is that conformity of financial statement amounts with amounts reasonably expected on the basis of past experience and other known conditions, provides relevant and reliable audit evidence for audit purposes. As such, substantive analytical procedures rely on the auditor's ability to identify plausible relationships among both financial and non-financial data and to generate expected amounts based on his past experience and knowledge of the entity and its environment. (Messier et al 2013: 147; Knechel 1988: 75)

Substantive analytical procedures are concerned with the study of relationships of financial information with the appropriate non-financial information or operating data (Koskivaara 2007: 334). Various methods exist for capturing these relationships and converting data into expected amounts. These methods range from performing simple comparisons to the use of complex models and techniques. Some typical methods include ratio analysis, reasonableness tests, trend analysis and regression analysis (Samaha and Hegazy 2010: 899; Koskivaara 2007: 337; Colbert 1994: 3). Ratio analysis incorporates the relationships between two or more variables and includes the calculation of financial ratios and the comparison thereof with related ratios for a prior year, an industry average or budget (Blocher and Patterson 1996: 53; Colbert 1994: 5). Reasonableness tests employ non-financial data independent of the accounting information system to predict the recorded amount (Koskivaara 2007: 337; Colbert 1994: 3, 7). Trend analysis points out trends in the recorded amount and involves the comparison of a current account amount with the prior year amount or with a trend in the amount for two or more prior periods (Blocher and Patterson 1996: 53; Colbert 1994: 4, 7). Regression analysis is another form of trend analysis. It statistically models the relationships between one or more independent variables into an equation which is then used to predict the value of the dependent variable in the current period (Koskivaara 2007: 337; Colbert 1994: 4, 7).

However, when employing analytical procedures as substantive procedures, the auditor is not only interested in a model that predicts an expectation of the recorded amount. Substantive analytical procedures also include the investigation of significant differences where the actual amount deviates from the expected amount or where fluctuations or relationships that are inconsistent with other relevant information are identified (IAASB 2014n: ISA 520 par. 7). The auditor's investigation of any significant difference should begin with an attempt to obtain a satisfactory explanation for the difference from known conditions, inquiry of management and further investigation, followed-up with

corroboration by other audit evidence relevant to the explanations obtained (Messier et al 2013: 156; Blocher and Patterson 1996: 55; Hirst and Koonce 1996: 476; Stringer 1975: 7). Thus, following the identification of a significant difference, the auditor develops alternative explanations for the difference, obtains corroborating audit evidence relating to the difference, evaluates the explanations in light of the audit evidence gathered and selects the explanation judged to be the correct cause of the difference (Messier et al 2013: 167; Dănescu and Spătăcean 2009: 25; Green 2005: 67; Leitch and Chen 2003: 148).

If, based on the auditor's evaluation of the explanation, the plausible relationship used by the auditor to generate the expected amount appears to be incorrect, the auditor would reject the recorded amount as fairly stated and apply other substantive audit procedures. However, if the explanation is judged to be plausible and the correct cause of the difference, it is quantified and incorporated into a revised expected amount. If, after this revision, an unacceptable difference still remains, further explanations should be investigated. It may be necessary for the auditor to go through several such iterations before arriving at an audit conclusion. (Messier et al 2013: 144; Green 2005: 67; Leitch and Chen 2003: 148 - 149; Biggs et al 1999: 46) Thus, in performing substantive analytical procedures, the auditor iterates through explanation development and evaluation as necessary until the significant difference is satisfactorily explained.

However, if, in the auditor's professional judgement, an acceptable expected value cannot be calculated after performing several iterations of the analytical procedure; i.e. a significant difference still exists, then the difference might be indicative of a material misstatement (Blocher and Patterson 1996: 55). In these instances no assurance is derived from the substantive analytical procedure as it is considered to have been ineffective. This leaves the auditor with the remaining alternative of performing sufficient additional tests of details to overcome the implicit presumption that the significant difference might be the

result of a material misstatement. (Messier et al 2013: 144; Stringer 1975: 7) If, on the other hand, the results from the substantive analytical procedures are acceptable; i.e. the difference between the recorded amount and the expected amount is not significant, then the auditor is able to obtain the intended level of assurance from performing substantive analytical procedures and the extent of tests of details required may be reduced (Samaha and Hegazy 2010: 901; Hitzig 2004: 33; Biggs et al 1999: 45).

The investigation of significant differences calls for competent professional judgement in evaluating and quantifying suggested cause-and-effect relationships, in distinguishing conditions that are unique to the relationship in question from those that are not and in avoiding the acceptance of broad generalisations. The use of substantive analytical procedures without the application of adequate experience, skills and competence, extensive knowledge of the entity and thoughtful analysis can result in inappropriate audit conclusions being formed based on the audit evidence obtained. (Messier et al 2013: 164, 174; Biggs et al 1999: 43; Stringer 1975: 7)

3.5.2.2 Tests of controls and tests of details

Tests of controls are designed to evaluate the operating effectiveness of controls in preventing, or detecting and correcting, material misstatements in the financial statements. Whereas tests of details are designed to discover material misstatements in the financial statements that have not been prevented, or detected and corrected by controls. (IAASB 2014i: ISA 330 par. 4) When designing tests of controls and tests of details, the auditor determines means of selecting items for testing that are effective in obtaining sufficient appropriate audit evidence to enable the auditor to draw reasonable conclusions on which to base the audit opinion. Depending on the particular circumstances, the means of selecting items for testing that are available to the auditor include 100% examination, selecting specific items, sampling or a

combination of these means. The application of any one or a combination of these means of selecting items for testing may be appropriate depending on the particular circumstances. (IAASB 2014k: ISA 500 par. 10, .A52)

However, ISA 330 (IAASB 2014i: par. A47) specifically states that, in designing and performing tests of controls and tests of details, the extent of audit procedures is generally thought of in terms of sampling and the quantity of procedures to be performed in terms of sample sizes. Thus, in line with this ISA requirement and for purposes of achieving audit efficiency and effectiveness, this study considers the extent of tests of controls and tests of details to be performed in response to the auditor's risk assessment and the desired level of assurance from the perspective of sample sizes.

The use of sampling

The use of sampling when performing tests of controls and tests of details vs. selecting all items or selecting specific items for testing, relates back to the auditor's overall objective in conducting an audit of the financial statements. That is, to obtain a reasonable level of assurance rather than absolute certainty that the financial statements are free from material misstatement (IAASB 2014c: ISA 200 par. 5). The justification for reasonable assurance rather than absolute certainty regarding the reliability of the financial information is based on the fact that the auditor must obtain sufficient appropriate audit evidence to afford a reasonable basis for the audit opinion (Whittington and Pany 2010: 327; AICPA 2008; par. 2.15). Thus, the auditor chooses the means of selecting items for testing that are most efficient and effective in meeting the audit objective.

As entities have grown in size, auditors were increasingly forced to rely on sampling as the only practical means of obtaining sufficient appropriate audit evidence. If sampling was not used, every item comprising an account balance, class of transactions or disclosure would need to be tested. The cost of such an

examination would far outweigh the benefit obtained and would be prohibitive because of the amount of time required to perform such an examination. As a result, the use of sampling in auditing is common because of the need to gather audit evidence over large populations of client data in an efficient and cost-effective manner. (Eilifsen, Messier, Glover and Prawitt 2010: 283; Whittington and Pany 2010: 327; AICPA 2008: par. 2.15; Colbert 2001: 27; Robertson 1995: 106)

Consequently, it can be deduced that the use of sampling arises from the relationship between the cost and time required to examine all the items comprising the population and possible adverse consequences from incorrect conclusions that may result from examining only a sample of items. Sampling provides the auditor with a means of obtaining almost identical information than what would have been obtained had all items been tested, but at a much lower cost. Thus, sampling is an efficient and effective method of gathering audit evidence, with the use of sampling being one of the key reasons for the audit report expressing a reasonable assurance opinion rather than an absolute certification of the correctness of the financial statements.

The concept of sampling

In general terms, sampling can be described as the process of selecting a group of items; referred to as the sample, from a larger set of data or items; known as the population, and using the characteristics of the sample to draw inferences about the characteristics of the entire population of items. The underlying assumption of sampling is that the sample will allow accurate inferences to be made about the population. (Whittington and Pany 2010: 327; Colbert 2001: 27) In other words, sampling involves the selection of less than 100% of items from a population, such that all the items in the population have a chance of being selected, with the objective of the sample providing a reasonable basis for reaching a conclusion on all the items in the population,

including those not selected for testing (IAASB 2014o: ISA 530 par. 5(a)). Consequently, sampling is designed to enable conclusions to be drawn about an entire population on the basis of testing only a selection of items drawn from the population.

In the audit environment, the auditor's objective when using sampling is to provide a reasonable basis for the auditor to draw conclusions about the population (class of transactions, account balance, or disclosure) from which the sample is selected (IAASB 2014o: ISA 530 par. 4). Sampling enables the auditor to obtain and evaluate audit evidence about some characteristic of the items selected from a class of transactions, account balance, or disclosure (the population) in order to form or assist in forming a conclusion concerning the class of transactions, account balance, or disclosure from which the sample was drawn (IAASB 2014o: ISA 530 par. A4). Based on the results of applying audit procedures to a representative sample of items selected from the class of transactions, account balance, or disclosure, the auditor can make an inference, by projecting or extrapolating the sample results, about the entire class of transactions, account balance, or disclosure from which the sample was selected (O'Reilly, et al 1999: 331).

Statistical vs. non-statistical sampling

Sampling can be applied using either non-statistical or statistical sampling approaches (IAASB 2014o: ISA 530 par. A4). ISA 530 (IAASB 2014o: par. 5(g)) defines statistical sampling as a sampling approach that uses random selection of the sample items and probability theory to evaluate sample results. A sampling approach that does not have these characteristics is considered non-statistical sampling. It is evident that ISA 530 (IAASB 2014o) recognises and permits both statistical and non-statistical methods of sampling.

Both statistical and non-statistical methods are based on the same fundamental sampling theories, methods and assumptions (Eilifsen et al 2010: 283; AICPA 2008: par. 2.26). Consequently, a properly designed non-statistical sampling application that considers the same factors that would be considered in a properly designed statistical sample can provide results that are as effective as those from a statistical sampling application and both approaches, when appropriately applied, can provide sufficient appropriate audit evidence (AICPA 2008: par. 2.21). The decision whether to use a statistical or non-statistical sampling approach is generally a matter for the auditor's judgement (IAASB 2014o: ISA 530 par. A9).

Although the auditor is not required to use statistical sampling to determine sample size, ISA 530 (IAASB 2014o: par. A9, .A11) indicates that sample sizes should be similar regardless of whether a statistical or non-statistical approach is used. In other words, non-statistical sampling does not justify an auditor using sample sizes that are too small to provide sufficient appropriate audit evidence. With a non-statistical sampling application, the auditor relies on his professional judgement, knowledge of the underlying statistical sampling theories and statistically-based formulas, together with non-statistical sampling guidance contained in audit firm policy, to determine non-statistical sample sizes. (AICPA 2008: par. 2.26; Elder and Allen 2003: 986; Hall, Hunton and Pierce 2002: 125; Turley and Cooper 1991: 119) Therefore, to properly apply non-statistical sampling, the auditor's judgement and the non-statistical sampling guidance must be grounded in statistical sampling theory.

However, a concern with the use of non-statistical sampling is that the auditor's sampling judgements may differ significantly from sampling theory, resulting in testing that is not as effective as statistical sampling (Eilifsen et al 2010: 282). This risk may be addressed by adopting non-statistical sampling guidance and procedures that are easier and simpler to use, that encourage consistency in sampling judgements made across engagement teams and that are based on

sampling theories, methods and assumptions (Eilifsen et al 2010: 264; AICPA 2008: par. 2.26).

As a result, many audit firms have adopted structured non-statistical sampling approaches that enable the more difficult statistical sampling decisions to be made centrally at firm level and to be built into the audit firms' non-statistical sampling guidance that allows for the use of a formula approach to the determination of non-statistical sample sizes (Eilifsen et al 2010: 264; Whittington and Pany 2010: 352; AICPA 2008: par. 2.26; Elder and Allen 2003: 986; Hall et al 2002: 125; Hall, Herron, Pierce and Witt 2001: 170).

Thus, when the effect of the integrated audit evidence planning model on the extent of tests of controls and tests of details is considered in chapter 5, this study adopts a structured non-statistical sampling approach founded in and consistent with statistical sampling theories, methods and assumptions. It is based on ISA 530's (IAASB 2014o: par. A4) recognition of non-statistical sampling as an acceptable approach and is in line with common auditing practice of implementing non-statistical sampling. The study derives a non-statistical sampling model, based on statistical sampling theories, methods and assumptions, that employs a simple formula approach to the determination of non-statistical sample sizes and that is quantitatively linked to the required overall levels of assurance. (Refer to section 5.7 of chapter 5.)

3.5.3 The purpose of evidence gathering procedures

As discussed in section 3.5.1.1, audit procedures refer to tests of controls and substantive procedures, with substantive procedures further comprising substantive analytical procedures and tests of details.

Deciding on an appropriate audit strategy and planning the nature, timing and extent of audit procedures involve a series of choices regarding the level and type of testing for individual classes of transactions, account balances and

disclosures. The auditor's assessed risks also impact the choices regarding the combination of audit procedures to be performed. In some cases, the auditor may determine that performing substantive procedures alone is appropriate. In such instances, the auditor may, depending on the circumstances, determine that performing substantive analytical procedures only will be sufficient to reduce audit risk to an acceptably low level, that only tests of details are appropriate or that a combination of substantive analytical procedures and tests of details are most responsive to the assessed risks. (IAASB 2014i: ISA 330 par. A4).

In other cases, the auditor may determine that an effective response to the assessed risks of material misstatement will only be achieved by performing tests of controls in addition to substantive procedures. However, performing tests of controls alone is insufficient and the ISAs require the auditor to perform substantive procedures for each material class of transactions, account balance and disclosure. (IAASB 2014i: ISA 330 par. A42) Perhaps in response to this ISA requirement to always perform some substantive procedures and not just tests of controls, Curtis and Turley (2007: 459) and Mock and Wright (1993: 59) observed some reluctance by auditors to rely on controls and instead to apply a substantive testing strategy in order to reduce costs. Knechel (2007: 389) further observed that "traditional audit testing tended to be substantive in nature" and Hogan and Wilkins (2008: 220) found no evidence that audit effort is sensitive to reliance on internal controls. Curtis and Turley (2007: 444, 458) also identified discomfort with auditors regarding the lack of "linkage" between evidence from testing controls, the extent of substantive testing required and the opinion given on the financial statements. As a result, they concluded that the decision by auditors to employ an audit strategy that includes both tests of details and tests of controls remains problematic (Curtis and Turley 2007: 460).

The principles underlying the audit risk model imply aggregating assurance obtained from different types of procedures to address the assessed risk of material misstatement at the assertion level and formulate an opinion on the

financial statements. The audit risk model therefore requires the auditor to aggregate the level of evidence obtained from tests of controls, substantive analytical procedures and tests of details. (Turley and Cooper 1991: 25) The auditor's assessment of the identified risks at assertion level provides a basis for considering the appropriate combination of types of procedures. For example, the auditor may determine that the assessed risk of material misstatement for a particular assertion may only be addressed if tests of controls are performed in combination with substantive procedures (tests of details or analytical procedures). Alternatively, the auditor may decide that performing tests of details alone is an effective approach or that performing a combination of substantive analytical procedures and tests of details is appropriate for a particular assertion. However, irrespective of the approach selected, the auditor must always perform substantive procedures for each material class of transactions, account balance and disclosure. (IAASB 2014i: ISA 330 par. A4).

Aggregating audit evidence from different types of procedures is not a well-developed concept and little guidance exists on the matter, as is evidenced in the literature. Curtis and Turley (2007: 458) stated that "there is no general theory of evidence aggregation" and concluded that auditors are not comfortable with the inference or judgement involved in testing and relying on controls, as opposed to detail tests, and issuing an audit opinion based thereon. This is magnified by a lack of reduction in substantive testing where controls are tested. These results were in line with the earlier findings by Srinidhi and Vasarhelyi (1986: 64) that indicated that auditors disagree on how to aggregate audit evidence and that aggregating evidence to come to a final audit opinion remains mostly informal (Turley and Cooper 1991: 27). Knechel (2007: 390) further found that although auditors have in the past tested controls, evidence suggests that auditors have never been comfortable or effective at integrating reliance on internal control with other types of audit evidence. This results in the traditional tendency for audit testing to be substantive in nature (Knechel 2007:

389). Thus, the process of aggregating evidence from different types of procedures to come to a final audit opinion remains largely judgemental in practice, even though assurance from testing controls should in theory lead to a reduction in the extent of substantive tests (IAASB 2014i: ISA 330 par. A10, A15; Fogarty and Rigsby 2010: 310).

It is possible to deduce that the above concerns regarding the use of tests of controls and the aggregation of evidence from different types of procedures may be alleviated by a decision-making tool or model that demonstrates to auditors a linkage between assurance obtained from testing controls and the extent of substantive testing required, that will still result in sufficient appropriate audit evidence to support the audit opinion. Such a decision-making tool or model that formalises the aggregation of evidence to reduce the extent of substantive testing if assurance is obtained from tests of controls may also result in a more efficient and effective audit. The development of such a model is envisaged in this study and the above therefore supports the objective of this study.

3.5.4 The interaction between evidence gathering procedures and risk

The auditor's judgements regarding the nature, timing and extent of audit procedures must be responsive to the risks particular to the client and must further be adaptive to changes in risks (Mock and Wright 1993: 39). To formulate an efficient and effective audit strategy, the risk assessment and evidence planning phases of the audit must be linked (Wright and Bedard 2000: 124). Thus, risk recognition and assessment and audit evidence planning should be integrated processes, and the recognition and interpretation of risks should provide the foundation for an efficient and effective audit, with the effectiveness of the audit ultimately being determined by decisions regarding the nature, timing and extent of audit procedures. However, a number of studies have found that there is no link between risk assessment and the extent of

testing, which is the focus of this study. The findings from these studies are highlighted below.

Bedard (1989: 57) found great reliance on the audit plans used in prior years, resulting in the repetition of a large number of procedures; that is, the nature and extent of the audit plans remain stable from year to year. The results of two separate studies conducted by Mock and Wright (1999: 55; 1993: 39, 59) also indicated that audit evidence planning is not clearly adjusted for identified risks, contrary to expectations. They found that the nature of audit procedures changed little to address changes in risk and that there is little evidence of a strong correlation between the level of risk and the extent of testing. Even when changes in risk occurred, the extent of the audit procedures is strongly related to the number of prior misstatements and not to the changes in risk. (Mock and Wright 1999: 55; Mock and Wright 1993: 39, 59)

In a study that examined the impact of risks identified through the execution of analytical procedures during the risk assessment phase of the audit on audit plans, Glover, Jiambalvo and Kennedy (2000: 27) established that a high proportion of auditors do not revise their plans; i.e. they do not increase the extent of testing, when faced with increased audit risk indicated by preliminary analytical procedures. Wright and Bedard (2000: 123) conducted an analysis of how activities undertaken in the risk assessment phase flow through to decisions concerning the nature and extent of audit procedures. Their analysis also showed that identified risks are not associated with differences in extent of testing or with justification of extent of testing decisions (Wright and Bedard 2000: 123).

The same conclusion was reached by Johnstone and Bedard (2001: 199) when they examined how risk factors affect engagement planning; they found that the nature of audit testing varies with risk, but the extent (planned audit hours) of testing does not change. Elder and Allen (2003: 1000) reported that the association between risk assessment and extent of evidence is not significant.

These findings are supported by later studies by Fukukawa et al (2006: 41) and De Martinis et al (2011: 546) who again reported that the association between risks and the audit plans is somewhat weak. Hogan and Wilkins' (2008: 238) study on the relationship between assessed control risk and increased audit effort (audit fees) was inconclusive regarding whether increased control risk results in an increase in the extent of testing.

Blay et al's (2008: 40) findings indicated that planned audit procedures are affected by preliminary risk assessments; specifically that higher preliminary risk assessments are related to the collection of more persuasive and extensive evidence. However, their results were based on data drawn from only one specific office from one big 4 audit firm (Blay et al 2008: 50).

On completion of an in-depth literature review on the linkage of risk assessments to subsequent testing, Allen et al (2006: 159) concluded that most of the academic research suggests that the link between risk assessments and extent of testing is weaker than one would expect. They concluded that "efforts to improve this linkage appear to be quite appropriate", which directly supports one of this study's objectives: to link the extent of audit evidence with the level of assessed risks (Allen et al 2006: 159). This study's objective is to provide guidance on the appropriate extent of testing once the risk assessment judgements have been made.

These results were confirmed by two doctoral studies. Luo (2011: 71) investigated whether audit programs are responsive to audit risk and concluded that auditors in general do not adjust their audit programs and the nature and extent of audit procedures to increased audit risk. Similarly, Seidel (2014: 44) examined the effective use of the audit risk model at the account level. He found an increased incidence of account-level misstatements when control risk within that particular account is high, suggesting ineffective response to high control risk at the account level. That is, auditors do not maintain a responsive

link between account-level risk assessment and the design, performance and evaluation of substantive audit tests. (Seidel 2014: 44)

There are several possible reasons why the link between assessed risks and the extent of audit procedures is weak, including the possibilities that auditors do not recognise risks, interpret them differently or have difficulty in adapting the audit plan. A reason may be that the auditor prefers to adjust the nature of the audit procedures, rather than increasing audit hours or sample sizes, in order to achieve more effective testing within a given budget. (Hogan and Wilkins 2008: 236; Fukukawa et al 2006: 60; Wright and Bedard 2000: 126) Auditors may also believe that standard audit plans are robust enough to detect a large variety of potential misstatements or that the plan used in the prior period is cost effective. The cognitive strain of continually re-evaluating the plan, or a “sunk cost” phenomenon, resulting in the auditor who developed the plan not wanting to alter it, may be further reasons for risk assessments not impacting on the extent of planned audit procedures. (Elder and Allen 2003: 984; Mock and Wright 1993: 58) The lack of a strong relationship between evidence planning and assessed risks may also result from the fact that audit extent decisions are complex and dependent on many factors and therefore require complex judgements in order to design an audit plan tailored to the client’s particular risks. In addition, economic factors such as price competition may influence the auditor not to adapt the extent of testing to risks. (Curtis and Turley 2007: 444; Mock and Wright 1999: 71)

Mock and Wright (1999: 56) suggested that the use of decision tools or models may allow for closer correspondence between client risks and audit plans. Bedard, Mock and Wright (1999: 134) went further and concluded that the low correlation between extent of audit testing and assessed risks “implies that an important area for additional research is to explore alternative audit (evidence) planning models”; again supporting the objective of this study.

If audit plans are not clearly related to the risks specific to the client, it could result in questions concerning audit efficiency and effectiveness (Bedard et al 1999: 96). In contrast, the quantification of decisions regarding risk assessments is expected to lead to more efficient and effective auditing (Fukukawa and Mock 2011: 76). The auditor's evidence planning judgements regarding the appropriate nature, timing and extent of audit procedures deemed necessary to gather sufficient appropriate audit evidence therefore impact substantially on the efficiency and effectiveness of the audit (Mock and Wright 1993: 3; Alderman and Tabor 1989: 60). (Also refer to section 3.2.3.)

In the early years of the auditing profession, the audit opinion was formulated only after the examination of evidence supporting all or substantially all transactions and balances. Today such a strategy is impractical for both economical and timeliness reasons and the concept of testing is widely accepted as part of the auditing theory and principles. (Eilifsen et al 2010: 283; Fogarty and Rigsby 2010: 305; Whittington and Pany 2010: 327; AICPA 2008: par. 2.15; Colbert 2001: 27; CICA 1980: 1) However, the Canadian Institute of Chartered Accountants (CICA) (1980: Preface) found that the guidance on extent of audit testing have been meagre. In addition, despite the concept of testing being explicitly expressed in the ISAs, auditors still struggle with the question of whether they are over- or under-auditing, with under-auditing relating to effectiveness – “Is the auditor failing to meet his audit objectives?” and over-auditing referring to efficiency – “Is the extent of auditing more than what is needed and wasting resources?” (Hayes 2007: 58) The concern facing the auditor is that too little testing makes for an inexpensive, but poor quality audit, whereas too much testing makes for an overly expensive audit. The question of “how much to test”; i.e. the extent of audit evidence, is therefore fundamental to every audit, particularly in light of the conflicting pressures of escalating audit costs, growing user expectations and increasingly onerous audit requirements on the auditor's judgement. (Seidel 2014: 2; Charles et al 2010: 15 - 18; Fogarty and Rigsby 2010: 304, 315; Bierstaker, Houston and

Wright 2006: 2; Kinney 2005: 106) As a result, Hayes (2007: 59) concluded that there is a “need to develop and communicate over-arching principles and guide staff as they make these difficult and non-stop decisions”. More specifically, the CICA (1980: 3) concluded that “there is an increasing need for guidance in the determination of the extent of testing”, which directly supports the objective of this study.

The audit evidence gathering process involves different types of procedures in varying quantities in order to address the assessed risks of material misstatement, enabling the auditor to reach the conclusions on which the audit opinion is based. Despite the importance of evidence planning the number of studies in this area has been limited, as is evident from the above discussion. Those studies that have been conducted did not show a clear correlation between evidence planning and the extent of testing and the level of, or changes in assessed risks. These results lead to questions about potential audit inefficiencies (over-testing) and ineffectiveness (failure to sufficiently address risk). Consequently, there is an increasing need for formal and definitive guidance on the determination of the extent of testing in the form of an integrated audit evidence planning model to be used as a decision-making tool.

3.6 THE CASE FOR MODELLING AUDIT EVIDENCE

As discussed in the preceding sections of this chapter, the auditor implicitly or explicitly weighs a number of criteria when planning the nature, timing and extent of audit procedures, amongst them materiality, assessed risks and the sufficiency and appropriateness of the evidence to be collected. The ISAs recognise that the auditor may find a model that expresses the relationship between risk and audit evidence useful when planning the nature, timing and extent of audit procedures (IAASB 2014c: ISA 200 par. A36). This is also supported by the literature, as discussed below.

Evidence planning judgements are complex, multi-criteria decisions and the appropriate application of professional judgement plays a crucial role in making these decisions. In exercising their professional judgement auditors also apply their individual attributes such as knowledge, cognitive and other skills, experience, ability and personality, in making decisions about the courses of action that are appropriate in the circumstances of the audit engagement, which make their judgements susceptible to biases and omissions. (IAASB 2014a: Glossary; Curtis and Turley 2007: 459; Jeppesen 2007: 590; Knechel 2007: 389; Nelson et al 2005: 42, 48; Bedard and Graham 2002: 41) In addition, the ISAs provide relatively little guidance as to how some of these judgements should be applied in practice. As an example, ISA 200 (IAASB 2014c: par. A36) states that “the auditor may make use of a model that expresses the general relationship of the components of audit risk in mathematical terms to arrive at an acceptable level of detection risk”, but is silent on the design and implementation of such a model, leaving it to the judgement of the auditor.

For these reasons, as well as audit firms’ continuing search for an audit approach that will enable the auditor to perform an effective audit strategy and plan in the most efficient manner, there is a growing trend towards increasing structure in audit decision-making along a structured-unstructured continuum, with unstructured firms leaving more decisions to the judgements of the individual auditor and structured firms placing more emphasis on auditor consensus; i.e. in a given situation different auditors should arrive at similar opinions (Charles et al 2010: 19; Curtis and Turley 2007: 441 - 444; Smith et al 2001: 40; Kinney 1986: 74, 75; Sullivan 1984: 62). Charles et al (2010: 19) and Cushing and Loebbecke (1986: 1) further confirmed that many audit firms revised their audit methodologies towards greater structure and formalisation in order to recognise the audit as an integrated process and to set audit tools that provide detailed guidance to the auditor in carrying out specific audit steps. They further expressed the view that of the unstructured firms in their study, some were moving towards a more structured approach and that there was no

indication that any of the firms in the study were moving in the direction of a less structured approach (Cushing and Loebbecke 1986: 40).

The increasing use of structured audit methodologies was reiterated by Turly and Cooper (1991: 32) and Jeppesen (2007: 590) who found that the emphasis in large audit firms is on the use of structured audit methodologies and standardisation of audit work to provide a framework for the flexible exercise of professional judgement, as well as by Bowrin (1998: 41) who noted that “the concept of a structured audit approach has been employed extensively in the field of auditing”. The motivation for changing to a more structured audit methodology stems from the needs to implement a consistent approach across a large audit practice, to control audit risk, to manage audit costs and to perform more efficient and effective audits, as well as the revised requirements in the ISAs (Curtis and Turley 2007: 459; Bowrin 1998: 62; Cushing and Loebbecke 1986: 1).

Cushing and Loebbecke (1986: 32) defined a structured audit methodology as “a systematic approach to auditing characterised by a prescribed, logical sequence of procedures, decisions and documentation steps, and by a comprehensive and integrated set of policies and tools designed to assist the auditor in conducting the audit.” A structured audit methodology therefore provides a specific and comprehensive frame of reference to be used for decision-making by the individual auditor on an audit, with different areas of the audit clearly related to one another, with a predetermined way of proceeding, and with a clear pattern of organisation (Mullarkey 1984: 73). The emphasis is on a process that allows the individual auditor to exercise judgement and to adapt the audit strategy and plan to the unique characteristics of the client. Rather than standardising audit work, a structured approach provides a framework within which judgement must be used and, in fact, specifies the judgements to be made. (Turley and Cooper 1991: 30) A structured approach is neither overly rigid nor lacking in focus, but it provides a disciplined approach based on risk assessment to determine audit effort (Mullarkey 1984: 73).

MacLulich (2003: 807) further showed that judgement and structure go well together and that a structured approach to auditing is recognised as promoting a framework for the flexible exercise of judgement.

Cushing and Loebbecke's (1986: 32) definition of a structured audit methodology includes an important characteristic in that a structured approach encompasses the development and implementation of decision tools or models that improve the quality of audit judgements beyond relying purely on individual auditor judgement. Rohrmann (1986: 363 - 365) defined a decision aid (tool) as "any explicit procedure for the generation, evaluation and selection of alternative courses of action that is designed for practical application and multiple use", going on to state that decision tools "made decisions easier and better because they decompose the decision process into comprehensible parts, reveal goals and preferences, guide information search and integration, and are based on a rational concept for the comparison, evaluation and selection of alternatives". Decision tools are employed in various different phases of the audit, with the spectrum of decision tools varying from the relatively simple, such as checklists, audit plans, the audit risk model and sample size estimation tools to highly complex computerised models intended to mimic judgement and artificial intelligence-based systems (Nelson et al 2005: 5; Abdolmohammadi and Usoff 2001: 139).

Although audit decision-making cannot be reduced to a quantitative model and will always require the application of considerable judgement (Sullivan 1984: 62), Wright and Mock (1988: 113) have suggested that decision tools or models that aid the auditor in exercising complex, multi-dimensional evidence planning judgements may significantly improve audit efficiency and effectiveness. Bowrin (1998: 62) concluded that a structured audit approach exercises greater control over the execution of audit tasks and that it is apparent that the adoption of a structured audit approach improves audit efficiency and effectiveness. In addition, Knechel (2007: 389) stated that decision tools that promote the use of judgement are more successful. Audit

firms also use decision tools or models to standardise work processes to control work and promote consistency in decision-making across audit engagements and over time, as well as to supplement any cognitive deficiencies in an auditor's attributes and to facilitate the delegation of audit work to less experienced staff, thereby preventing biases and omissions and improving auditor performance compared to unaided decision-making situations (Curtis and Turley 2007: 459; Jeppesen 2007: 590; Nelson et al 2005: 53; Bedard and Graham 2002: 41; Abdolmohammadi and Usoff 2001: 139).

Structured audit methodologies, encompassing decision models, have both advantages and disadvantages, with some of the disadvantages being the following (Nelson et al 2005: 53, 54; Turley and Cooper 1991: 28, 29; Cushing and Loebbecke 1986: 43):

- A structured approach may be inflexible, as it is designed to anticipate the features of typical audits. This could lead to the structured approach being inefficient and ineffective when applied to an atypical audit environment, resulting in the formulation of an inappropriate audit opinion.
- Standardisation may force the auditor to perform procedures that allow for all eventualities, but that are not really necessary or appropriate to the individual audit.
- The auditor's thinking may become mechanistic, resulting in failure by the auditor to observe important facts or to reason through to appropriate judgements and conclusions.
- A structured approach may stress a particular audit strategy, such as heavy reliance on controls, when another strategy may be more appropriate in the circumstances.
- Some auditors may believe that structured tools reduce the application of judgement to an unacceptably low level.

- The cost of developing and updating a structured approach and the related decision tools, as well as implementing the strategy may be high.
- Use of decision tools can hinder trainee auditors' acquisition of knowledge.

The advantages of structured audit methodologies and decision models can be traced to a number of emerging trends in the auditing profession. The auditing environment is becoming ever more regulated, both in terms of legislative and auditing standard requirements, putting pressure on audit firms to ensure adherence to all such requirements on each audit. Audit firms are increasingly sensitive to audit litigation and adverse press, while being subject to rising price competition. The complexity of the economic environment, as well as computer systems and technology, is greater than ever, making it more difficult to ensuring that audit reporting properly reflects economic and financial reality. (Öhman and Wallerstedt 2012: 242; Charles et al 2010: 15 - 18, 36; Feldmann and Read 2010: 267; Fogarty and Rigsby 2010: 301, 304, 315; Glover, Prawitt and Taylor 2009: 222; Knechel 2007: 383, 384; Bierstaker et al 2006: 1, 2; Kinney 2005: 90, 95, 98, 104) The adoption of a structured audit approach and the use of decision models may assist in responding to these trends, resulting in the following advantages (Turley and Cooper 1991: 28, 29; Kachelmeier and Messier 1990: 211; Cushing and Loebbecke 1986: 42):

- A structured approach may result in the execution of more efficient audits by enabling the auditor to focus on the specific judgements required in the particular client's circumstances, thereby allowing for a reduction in the number of procedures to be performed.
- A structured approach depends less heavily on more experienced and thus more costly audit staff, which may result in increased price competitiveness.
- In response to growing regulation and litigation, a structured audit approach may improve quality control of audit work. In particular, a

structured approach ensures that the same general strategy is followed on all audits, which improves compliance with the ISAs and legislated requirements.

- A structured approach may improve communication among auditors within a firm, reducing the possibility of misunderstandings.
- The use of a structured approach may make the audit less subjective and decreases the probability of inconsistency between audits, as judgement is applied within a clear framework.
- Decision tools may increase the importance of judgements as auditors are required to provide the decision tool inputs.
- A structured approach may assist in making the training of audit staff easier. As the methodology is based on a logical sequence of steps, it may be easier for all levels of audit staff to understand.
- A structured approach gives auditors a reference to better grasp the work they are performing and how it inter-relates to achieve the overall audit objective and to design an efficient and effective audit strategy and audit plan.

Relating the above advantages and disadvantages to the context of the auditor's risk assessment, it can be argued that there is an increased need for a "thinking" approach to auditing; a structured methodology that is adaptive rather than rigid and that recognises the role of professional judgement. Exercising professional judgement throughout the audit process is essential to the proper conduct of an audit and a structured audit approach must therefore provide a specific, but flexible framework within which the auditor can exercise professional judgement. The model developed in this study, the objective of which is to provide more structure to judgement regarding the extent of audit evidence, may be justified, as it could be argued that such a model could

achieve most or all of the listed advantages, without being subject to some of the disadvantages. The model mitigates the possible disadvantages by allowing for the flexible application of judgement regarding the different audit strategies that are accommodated in the model, thereby outperforming both of the two opposing positions of “structured” and “unstructured” audit approaches.

3.7 CONCLUSION

The purpose of an audit is to enhance the degree of confidence of users in the financial statements. This is achieved through an independent process that provides reasonable assurance for the auditor to express an opinion on the fair presentation of the financial statements, based on an examination of evidence. Consequently, this chapter considered the gathering and examination of audit evidence in support of the audit opinion from the point of view that audit evidence is central to every audit and must be gathered both efficiently and effectively. The auditor is required to examine sufficient appropriate evidence about whether the financial statements are free from material misstatement and must consider materiality, risk and the quantity and quality of available audit evidence when doing so, particularly when determining the nature, timing and extent of audit evidence gathering procedures.

The relationship with and impact of materiality and risk on audit evidence were considered. The auditor’s judgement of materiality directly affects the determination of the level of evidence to be collected to support the audit opinion and helps to guide the planning judgements regarding the nature, timing and extent of audit procedures. The auditor is required to obtain reasonable, but not absolute assurance that the financial statements are fairly stated by obtaining sufficient appropriate audit evidence to reduce the risk that the auditor may express an inappropriate audit opinion on the financial to an acceptably low level, enabling users’ reliance on the financial statements. In order to address this risk the auditor must identify, assess and respond to this risk by

obtaining sufficient appropriate audit evidence. Consequently, the concepts of audit evidence and risk are inter-related and the audit risk model articulates the relationship between risk and audit evidence. The audit risk model provides a vehicle for integrating the auditor's risk assessment, carried out in the planning phase of the audit, and formalising its link with the scope of audit testing that follows. Thus, the audit risk model forms the starting point for designing further audit procedures and allows for the auditor's assessment of risks to determine the nature, timing and extent of audit procedures necessary to obtain sufficient appropriate audit evidence. This evidence enables the auditor to express an opinion on the financial statements at an acceptably low level of audit risk. The risk assessment phase of the audit therefore influences the extent of audit procedures and directs the auditor's focus to those areas of the financial statements where the risk of misstatement is the greatest in order to achieve an efficient and effective outcome.

The audit evidence gathering process involves obtaining assurance from a range of sources in varying quantities and using different types of audit procedures in order to reach the conclusions on which the audit opinion is based. Despite the importance of audit evidence planning considerations, the chapter indicated that the number of studies in this area has been limited. The studies that have been conducted did not show a clear correlation between evidence planning and the extent of testing and the level of, or changes in risks, nor did they answer the question of how to aggregate evidence from different types of procedures (tests of controls, substantive analytical procedures and tests of details) in order to reach a final audit opinion. Such findings lead to questions about potential audit inefficiencies (over-testing) and ineffectiveness (failure to sufficiently address risk). The chapter further considered that the ISAs lack practical implementation principles to assist the auditor in deciding how much testing should be carried out to obtain sufficient appropriate audit evidence in order to get reasonable assurance on the fair presentation of the financial statements before issuing an audit opinion thereon. The auditor has

been left to his own devices to decide how to relate the risk assessment to the evidence planning decisions and without a method to bring together the audit test results in a way that can be used in the decision-making process. Further, many audit firms have revised their audit methodologies towards greater structure and formalisation in order to recognise the audit as an integrated process.

Based on the above, the chapter concluded that there is an increasing need for a formal and definitive decision approach on the determination of the extent of testing in the form of an audit evidence planning model, to be used as a decision-making tool that provides detailed guidance to the auditor on formulating the audit plan and carrying out specific audit steps. Such an audit evidence model should be adaptive rather than rigid and should provide a framework for the auditor to exercise professional judgement.

The objective of this study is to develop an integrated audit evidence planning model that quantitatively influences and guides the auditor's judgements regarding the extent and aggregation of audit evidence in response to the auditor's risk assessment, thereby enabling the auditor to express an opinion on the financial statements. The following chapter is dedicated to explaining the research methodology that is followed in the study to develop such a model.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 INTRODUCTION

The previous two chapters provided an overview of the literature relevant to this study. The literature review located the study within the theory of auditing and contextualised the study with reference to the fundamental concepts and principles of audit evidence. Chapter 3 concluded by making a case for modelling audit evidence by means of grounding the study in the relevant literature. It supported the objective of this study; the development of an integrated audit evidence planning model that quantifies the extent of audit evidence by taking into account the inter-relation between the extent and combination of tests of controls, substantive analytical procedures and tests of details.

In this chapter the research methodology of the study is discussed. Research in accounting and auditing is generally accepted as being part of social sciences research (Eriksson and Kovalainen 2008: 154; Gurd 2008: 122; Ryan, Scapens and Theobald 2002: 9; Kirk and Van Staden 2001: 177). Leedy and Ormrod (2010: 2) defined research as a systematic process of collecting, analysing and interpreting information in order to increase our understanding of a phenomenon about which we are interested. Research can also be described as an original investigation undertaken in order to contribute to knowledge and understanding in a particular field (Myers 2009: 6). Research may be labelled in many different ways based on the general category into which the utility or implications of the research falls; “academic”, “scientific”, “fundamental”, “basic”, “applied”, to give just five examples (Ryan et al 2002: 1; Salkind 2009: 14). In contrast to basic research, which has no intent for immediate application at the time it is completed (Salkind 2009: 14), the overarching objective of this study is to develop an integrated audit evidence planning model to quantify the extent of audit evidence. In order to achieve this objective the study is conducted in three

phases. Phase one involves a review of the literature in order to obtain an understanding of the related concepts, principles and theories. Phase two entails the interpretation of the results from phase one, which insights are incorporated into the development of the integrated audit evidence planning model that is based on the grounded theory model building approach. Phase three looks at the evaluation of the integrated audit evidence planning model for adherence to the ISAs.

In essence, research is a creative intellectual activity that leads to the discovery, interpretation or production of new knowledge, which has the potential to transform our understanding of the world around us (Myers 2009: 6; Leedy and Ormrod 2010: 2; Ryan et al 2002: 7). Thus, research is about the interpretation of information to create new knowledge. The knowledge produced is new in the sense that the facts, the interpretation of those facts, or the theories used to explain them may not have been used in a particular way before within a specific discipline (Myers 2009: 6). The research design, which is the plan or blueprint followed to conduct the research study and to create this new knowledge, is systematic and follows logical, developmental procedures within an established paradigm and in accordance with existing guidelines (Leedy and Ormrod 2010: 6; Creswell 2009: 5; Williams 2007: 65). These guidelines, referred to as the research methodology or approach, provide the researcher with a specific direction for the procedures in the research design (Creswell 2009: 11).

4.2 RESEARCH METHODOLOGY (APPROACH) AND METHODS

Underlying and unifying any research study is its methodology or approach (Leedy and Ormrod 2010: 6). Babbie (2010: 4) defined the research methodology as “the science of finding out”. The methodology or approach of a research study is concerned with the logic of scientific enquiry (Grix 2010: 32); that is, the procedures for scientific investigation about how we come to know of

the world or gain knowledge about it (Denzin and Lincoln 2011: 12; Eriksson and Kovalainen 2008: 15). Thus, the methodology is the overall conceptual approach or strategy adopted in conducting research and it directs the whole research study.

Whereas the research methodology encapsulates the overall process and procedures of doing research, research methods are the particular techniques used in conducting research (Ryan et al 2002: 36). Research methods can be seen as the techniques, tools or procedures used to collect, manipulate, analyse and interpret the data and information necessary to address the specific research questions being asked about the world (Grix 2010: 30; Myers 2009: 4; Salkind 2009: 307; Mouton 2013: 49). Therefore, methods offer the researcher ways of gathering information or gaining insight into a particular issue.

There are many possible research methodologies (approaches) and methods that may be employed to execute a study that will arrive at reliable, well-argued conclusions, each with its own advantages, disadvantages and suitability to specific research fields and studies (Myers 2009: 53; Salkind 2009: 209, 225, 241; Eriksson and Kovalainen 2008: 113; Hofstee 2006: 120; Mouton 2013: 143). As stated by Babbie (2010: 19, 59), there is not a simple recipe for or just one way of conducting social research. Rather, the power and potential of social research lies in the many valid approaches and methods it comprises. There are however different broad inter-related distinctions underlying the variety of research approaches and two of them, inductive vs. deductive research and qualitative vs. quantitative research, are highlighted below.

4.2.1 Inductive vs. deductive research

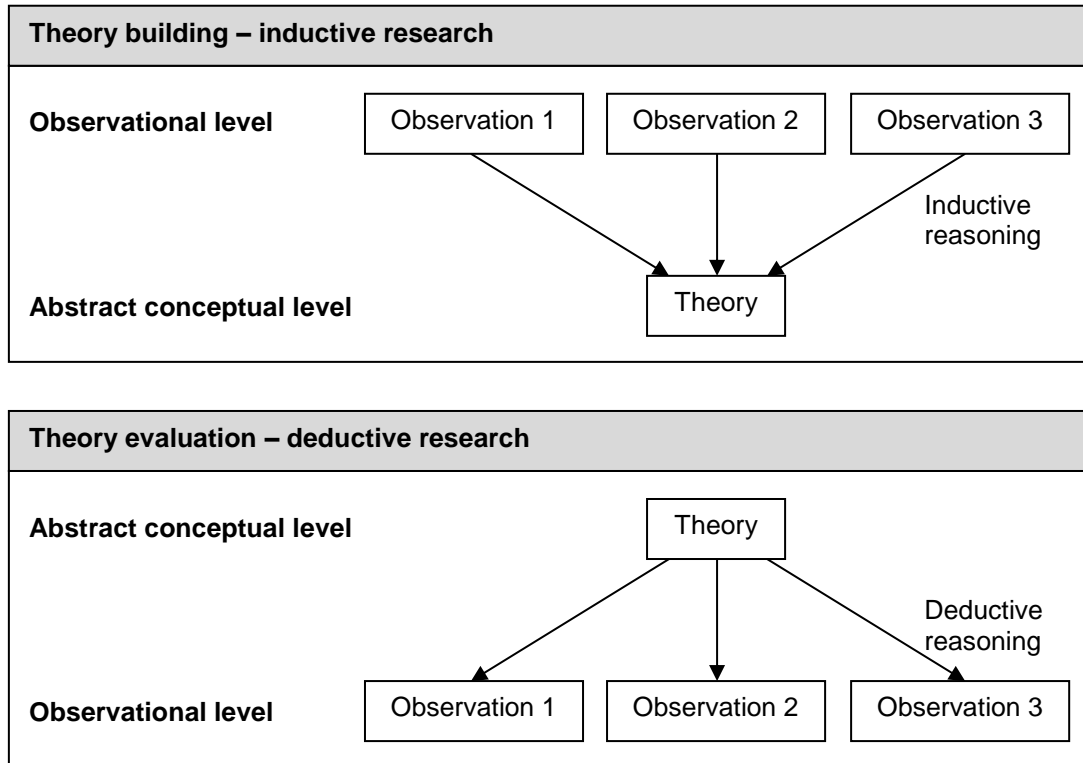
Deductive reasoning or deductive research moves from the general to the specific; it starts from general statements and predicts specific observations

(Babbie 2010: 23, 28). In deductive research, theory is the first source of knowledge and the research proceeds from theory, through hypothesis, to observations (Eriksson and Kovalainen 2008: 22). Therefore, deductive reasoning begins with a theory that is tested through observations (Babbie 2010: 51). It can be labelled as theory driven research, as opposed to research that seeks to derive theories from observations (indicative research) (Grix 2010: 164).

In contrast to deductive research, inductive reasoning or inductive research reasons from the particular to the general; general principles and theories are developed from specific research observations (Babbie 2010: 22; Eriksson and Kovalainen 2008: 22). Inductive research draws conclusions from the analysis and interpretation of specific observations and attempts to generalise from the specific observations and conclusions to develop abstract ideas and theories (Grix 2010: 144, 164). Therefore, the construct of theory emerges from the observations (Myers 2009: 259).

It is evident from the preceding discussion that one of the distinctions that can be made between indicative and deductive research is based on the different roles played by theory. Deductive research begins with a theory that is tested through observations, whereas inductive research begins with observations from which theory emerges (Babbie 2010: 51). Thus, inductive and deductive research can also, more descriptively, be referred to as theory building and theory testing (evaluation) research (De Vaus 2001: 5). Theory building (inductive) research is seen as a process that begins with observations and uses inductive reasoning to derive a theory from these observations in an attempt to make sense of the observations. Theory evaluation (deductive) research, by contrast, begins with a theory and uses that theory to guide which observations to make, which observations should provide credibility to the theory and confirmation of the worth of the theory. This is illustrated schematically in diagram 4.1.

Diagram 4.1: Theory building (inductive) and theory evaluation (deductive) research

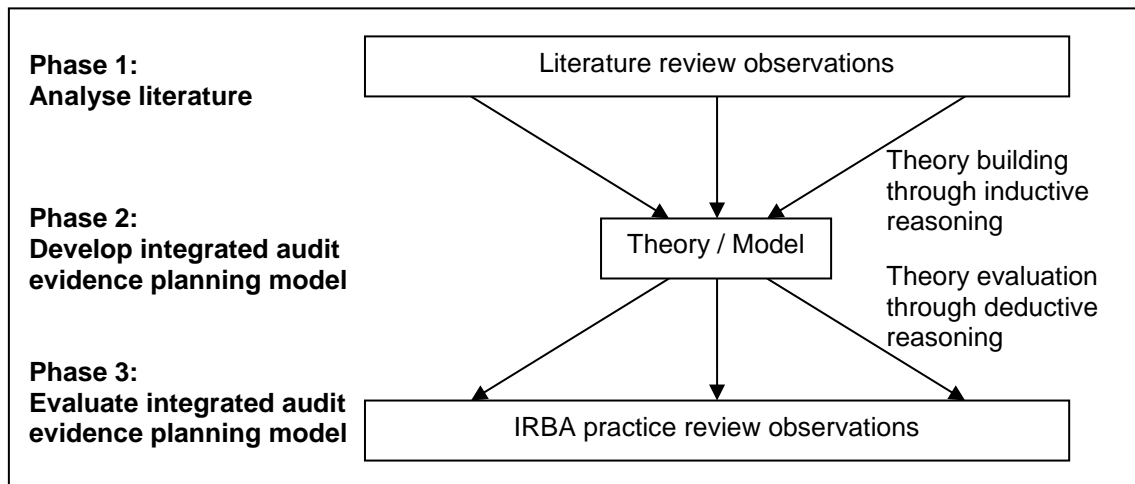


(Source: Adapted from Leedy and Ormrod (2010: 33); and De Vaus (2001: 5))

According to Eriksson and Kovalainen (2008: 21), social research often involves both inductive and deductive reasoning processes at some point in the same study. Consequently, although theory building and theory evaluation studies may be employed as alternative research approaches, this study employs them in combination. The overarching objective of this study is to develop an integrated audit evidence planning model, which is done through inductive reasoning from observations and insights gathered through the literature review; i.e. theory (model) building. The study is therefore focussed on the development of the integrated audit evidence planning model and not on the evaluation or testing thereof.

However, the adherence of the integrated audit evidence planning model to the ISA requirements is confirmed through incorporation of the model into the audit methodology of the AGSA, which is assessed for adherence to the ISAs through practice review by the IRBA; i.e. theory (model) evaluation. This approach is schematically illustrated in diagram 4.2.

Diagram 4.2: Theory building and theory evaluation research applied in this study



4.2.2 Qualitative vs. quantitative research

At an overall level, qualitative research can be described as the in depth study of social phenomena with a focus on text, while quantitative research is used to study general trends across a population, with a focus on numbers (Creswell 2009: 173; Myers 2009: 260). The intention with quantitative research is to produce data that can be quantified (counted, measured and weighed) and that can therefore be manipulated and compared mathematically. In this type of research the researcher is interested in finding general patterns and relationships among variables for testing theories and making predictions. (Grix

2010: 170) In this way, quantitative studies emphasise the measurement and analysis of causal relationships between variables (Denzin and Lincoln 2011: 8).

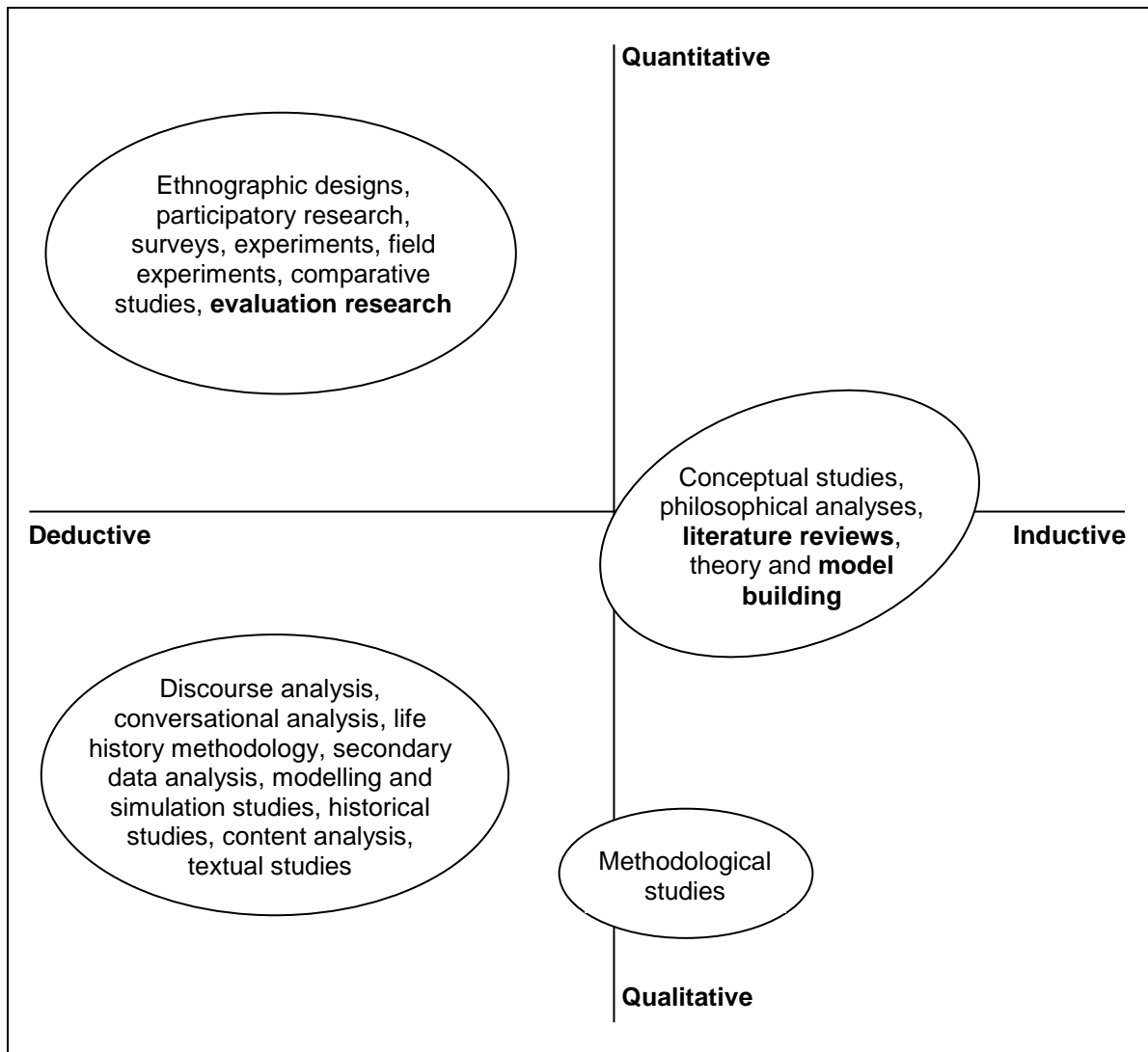
Qualitative research, on the other hand, is characterised by the examination of the inherent traits, characteristics and qualities of the objects of inquiry and tends to be interpretative in nature (Grix 2010: 170). The word “qualitative” implies that the emphasis is on the qualities and meanings of the matters under investigation (Denzin and Lincoln 2011: 8). Qualitative research allows the researcher to explore and obtain a deeper understanding, at a more detailed level, of the complexity and meaning of the phenomena under study (Tavallaei and Abu Talib 2010: 570; Williams 2007: 70). It is a holistic approach that involves discovery through purposeful description, explanation and interpretation that leads to “an unfolding model”; that is, the formulation and construction of new and emerging theories (Creswell 2009: 173; Williams 2007: 67). As a result, qualitative research is theory generating, allowing the researcher to generalise from the qualitative research observations to a theory or model (Babbie 2010: 296; Myers 2009: 9).

Tavallaei and Abu Talib (2010: 571) stressed the importance of the different roles played by theory when considering qualitative and quantitative research. In quantitative research, the aim is to prove and confirm a hypothesis or theory through deductive reasoning. However, in qualitative research one does not begin with a theory to test or verify. Qualitative research is chosen when there is little information about the topic under study and a relevant theory base is missing. (Tavallaei and Abu Talib 2010: 571, 575) Further, most qualitative research is orientated towards the inductive rather than the deductive approach (Babbie 2010: 51). Therefore, qualitative research intends to create an appropriate theory which suits the topic through inductive reasoning.

Based on the above discussion, it can be concluded that, similarly to inductive research as discussed in section 4.2.1, qualitative research lends itself to theory

building or model development, basing its premises on inductive, rather than deductive reasoning. Further, in line with this deduction, the objective of this study, which is to develop an integrated audit evidence planning model, indicates the application of an inductive qualitative theory building research approach to this study. The inductive vs. deductive and qualitative vs. quantitative research approaches comprise umbrella terms under which a wide and diverse range of research methodologies (approaches) and methods can be categorised. Diagram 4.3 schematically maps out the various research methodologies or approaches using the dimensions of inductive vs. deductive research and qualitative vs. quantitative research.

Diagram 4.3: Mapping research approaches



(Source: Adapted from Mouton (2013: 144))

As indicated above, this study is underlain by an inductive qualitative research approach. Based on this underlying inductive qualitative foundation, the study employs a combination of three research approaches in order to meet the objectives of the study and thereby contributing towards the existing body of knowledge: literature review, model development (theory and model building)

and model evaluation (evaluation research). Each of these research approaches are discussed in more detail below.

4.3 LITERATURE REVIEW

The purpose of a literature review is to explore, compare, summarise and critically analyse what has been written by other researchers about the topic of the research study (Eriksson and Kovalainen 2008: 44). This provides an overview and understanding of the scholarship in a certain field through an analysis of the issues, trends and debates (Hofstee 2006: 121; Mouton 2013: 179). The literature review locates the positionality of the research being reported on within its field. It clarifies the key concepts and current theoretical thinking, and identifies principles, definitions and theories without attempting to be all encompassing. (Babbie 2010: 506, 523; Clough 2002: 89) A review of the literature is essentially part of inductive reasoning, where the researcher works from a selection of texts that is read in order to come to a proper understanding of and theoretical insights in a specific domain of scholarship (Mouton 2013: 179).

Ryan et al (2002: 34) stated that a well-formulated theory (model) is usually derived from a review of the previous academic literature. Consequently, this study employs a review, analysis and interpretation of the extant literature significant to the study (Christopher 2010: 683). The purpose is to understand the related concepts, principles and theories in order to critically analyse and interpret them, thereby creating new perspectives that enable the development of the integrated audit evidence planning model through a theory and model building approach. Both local and international literature sources are used in the literature review, including pronouncements by local and international professional bodies, accredited research journals, relevant dissertations and theses, authoritative textbooks, published guidelines and websites.

4.4 MODEL DEVELOPMENT

Phase two of this study employs a theory and model building research approach to develop the integrated audit evidence planning model. Mouton (2013: 176) defined theory and model building studies as theoretical and inductive studies aimed at developing new models and theories or refining existing models and theories. Through critical thinking, which involves the evaluation of information or arguments in terms of their worth, the relevant literature is analysed and evaluated for its value and relevance (Beyer 1995: 8). The insights derived from the critical analyses, interpretations and evaluations of the literature significant to this study are incorporated into the development of the model, through the application of a theory and model building approach.

4.4.1 Theory building

Leedy and Ormrod (2010: 34) pointed out that the human mind is very constructive and that people have a natural inclination to develop theories about the world around them. The human mind pulls together what it learns about the world to form an organised and integrated understanding about a wide variety of phenomena and through the construction of theories and models attempt to explain phenomena in the world (Leedy and Ormrod 2010: 35; Mouton 2013: 176). Theories create new ways of understanding the world by systematically explaining observations and phenomena that relate to a particular aspect of life, thereby bringing order out of chaos and giving meaning to observations (Babbie 2010: G12; Hofstee 2006: 130). Therefore, a theory is a systematic set of inter-related statements that makes explanatory or causal claims about reality; it is “an organised body of concepts and principles intended to explain a particular phenomenon” (Leedy and Ormrod 2010: 5).

Both Babbie (2010: 32) and Strauss and Corbin (2008: 106) stressed the importance of explanation in theory building, indicating that theories seek to

provide logical explanations for what we see and observe. Tavallaei and Abu Talib (2010: 572) went further and stated that the word “theory” is merely a reference to a particular kind of explanation. Thus, theorising is the process of systematically formulating and organising ideas and concepts to explain and understand a particular phenomenon and a theory is the set of inter-connected ideas that emerge from this process (Tavallaei and Abu Talib 2010: 572).

Developing theory is a complex activity and it involves thinking actively and intentionally about the phenomena and information at hand (Leedy and Ormrod 2010: 35; Strauss and Corbin 2008: 55). Theory building begins with the facts and information known about a particular phenomenon and requires the researcher to think about the facts and information and to interpret, condense and delineate them into concepts through inductive reasoning. This is followed by making statements of relationship about those concepts, integrating and linking them all together into a theoretical whole that forms the foundation of a new theory about the phenomenon being studied. (Leedy and Ormrod 2010: 35; Strauss and Corbin 2008: 106) Strauss and Corbin (2008: 103) emphasised that facts, information and concepts alone do not make theory. They must be linked, filled in with detail and presented as a set of inter-related concepts to construct theory. It is the overall integrating and unifying explanation that raises the research facts, information and concepts to the level of theory. (Strauss and Corbin 2008: 103) Therefore, theory building takes place in successive stages and it can be denoted as a set of well-developed concepts that are systematically inter-related through statements of relationship to construct a theory that explains some phenomenon (Tavallaei and Abu Talib 2010: 572; Strauss and Corbin 2008: 55). Although totally new theories can emerge from this process, studies of this nature may also test an aspect of an existing theory, refine it, or expand its applicability (Hofstee 2006: 130).

Ryan et al (2002: 28) concluded that researchers in the financial disciplines find the notion of a “model” as an abstraction of reality a more meaningful concept to handle than the notion of a “theory”. They defined a model as an abstract

theoretical description of reality that is developed through an exhaustive process of refinement and validation and further stated that the assumptions within the model should be internally consistent in the logical sense and should be as simple as the logical integrity of the model will permit (Ryan et al 2002: 27, 28). Good models (and theories) provide causal accounts of the world, allow one to make predictive claims under certain conditions, bring conceptual coherence to a domain of science, and simplify our understanding of the world (Mouton 2013: 176).

This study employs a theory and model building approach, in line with the principles discussed above, to develop the integrated audit evidence planning model. It critically analyses and interprets the various relevant principles and concepts derived from the literature review and then systematically links and integrates them in successive stages through the application of inductive reasoning, deliberate thinking and logical interpreting to construct the integrated audit evidence planning model that quantifies (explains) the extent of audit evidence. In particular, the grounded theory approach to theory and model building is applied in this study.

4.4.2 Grounded theory

Strauss and Corbin's (2008) grounded theory research approach has been increasingly adopted as the preferred theory building approach in management, finance and auditing research studies (Myers 2009: 107; Eriksson and Kovalainen 2008: 169; Gurd 2008: 122). One of the attractions of the grounded theory approach in these research fields is its potential to develop new concepts and theories. Grounded theory has a particular purpose which is to move beyond description to the generation and discovery of theory (Tavallaei and Abu Talib 2010: 574). Consequently, it enables the generation of theories rather than the confirmation of existing theories and the generation of theory is one of the factors that distinguishes grounded theory from other research approaches

(Elharidy, Nicholson and Scapens 2008: 145; Eriksson and Kovalainen 2008: 156; Kirk and Van Staden 2001: 175). The approach begins with observations rather than hypotheses and seeks to discover patterns and relationships between concepts to develop theories from the ground up (Babbie 2010: 396; Grix 2010: 167). Therefore, it begins with phenomena that develop into theory. Theories or new theoretical concepts are the end result of grounded theory research, with Eriksson and Kovalainen (2008: 42, 156) stating that any grounded theory study should result in the generation of new theory. In fact, the true potential of grounded theory is realised only if it is used to progress to theory generation (Myers 2009: 107).

Strauss and Corbin (2008: 1) used the term grounded theory in a more generic sense to denote theoretical constructs derived from qualitative analysis of data. Grounded theory develops theories on an inductive qualitative basis. It is a qualitative research approach that uses a systematic set of procedures to develop an inductively derived grounded theory about a phenomenon. (Gurd 2008: 122) The qualitative research aspect encourages a rich understanding of the situation and enables the flexible and detailed in-depth study of the issues and concepts (Kirk and Van Staden 2001: 175, 177). Whereas inductive reasoning advances theory construction and requires active and explicit analysis and interpretation of the particular issues and concepts (Denzin and Lincoln 2011: 361). Strauss and Corbin (2008: 48) described this interpretation as a productive, transformative process that sets forth the multiple meanings of an event, object, experience, principle or concept. They saw interpretation as illuminating, bringing out and refining the meanings that can be sifted from the research findings. Thus, analyses and interpretations generate new knowledge and a deeper understanding because they tend to go beyond what everyone already knows, thereby raising the research findings to a conceptual level. (Strauss and Corbin 2008: 48)

According to Martin and Turner (1986: 141), grounded theory is “an inductive, theory discovery methodology that allows the researcher to develop a

theoretical account of the general features of a topic, while simultaneously grounding the account in empirical observations or data". Grounded theory seeks to inductively build a theoretical framework regarding a particular concept that is firmly grounded in the related concepts and phenomena, systematically analysed and interpreted (Myers 2009: 107; Kirk and Van Staden 2001: 209). It attempts to close the gap between research and theory by constructing abstract theory that is grounded in and consists of plausible relationships among the researched concepts and phenomena (Grix 2010: 122; Eriksson and Kovalainen 2008: 156; Strauss and Corbin 2008: 48). As a result, grounded theory can be described as a systematic qualitative approach used to derive a general, abstract theory at a conceptual level through inductive reasoning that explains a process, action, or interaction about a topic that is grounded in the related concepts and phenomena (Ellis and Levy 2009: 328; Williams 2007: 68). Grounded theory enables relevant theoretical concepts to emerge from the data and, in this way, leads to the discovery of theory (Kirk and Van Staden 2001: 176).

In addition to the emergence of theory from principles and concepts, a further essential characteristic of grounded theory is the constant, iterative, comparative and systematic process of qualitative collection and inductive analysis of information that enables the generation of theory (Denzin and Lincoln 2011: 361; Elharidy et al 2008: 145; Gurd 2008: 128). It features a circular, inter-linked, global, rather than linear, approach to the research process in which the analysis and interpretation of principles and concepts, and the generation of theory are not separate stages (Kirk and Van Staden 2001: 176). Further, in grounded theory the writing stage is regarded as a part of the research process, as it sharpens the researcher's emerging analyses and interpretations (Denzin and Lincoln 2011: 361; Babbie 2010: 396). Kirk and Van Staden (2001: 176) compared the research process to a complex network in which the stages in the process are not disparate, separate, linear steps, but constantly overlap and interplay. In grounded theory the researcher goes back

and forth between the qualitative inquiry of the information collection and inductive analysis, because they reciprocally inform and advance each other, thereby allowing relationships between the concepts to become evident. As the patterns of relationships among concepts become clearer through the emergent iterative process and successive conceptual analysis, the theory develops. (Denzin and Lincoln 2011: 360; Babbie 2010: 396) Therefore, the stages of the iterative process are linked to each other by the emergence of meaning from the principles and concepts through the comparison of the observations and concepts with one another and with the evolving indicative theory (Babbie 2010: 396; Eriksson and Kovalainen 2008: 156; Kirk and Van Staden 2001: 176). During each step of the iterative process, the abstract and conceptual level of the theory is raised and its strength intensified. The power of grounded theory lies in the interactive essence that comes from its iterative comparative process. (Denzin and Lincoln 2011: 361) Thus, theorising in grounded theory is an interactive and inter-related process and theoretical sensitivity is all about recognising insights and relationships, minor and major, that lead to discovery and theory building (Elharidy et al 2008: 145; Kirk and Van Staden 2001: 180).

As discussed above, the purpose of the grounded theory approach is to move beyond general descriptions to the construct of theory. The approach is therefore particularly suited to the objective of this study which is to develop an integrated audit evidence planning model. This study uses the grounded theory approach to develop the integrated audit evidence planning model on an inductive qualitative basis. This is achieved by means of a systematic, iterative, comparative and inter-linking process, analysing and interpreting the relevant principles and concepts that are grounded in the applicable ISAs and literature. Through each iterative, overlapping, interpretive step of the process relationships are created among the relevant principles and concepts, thereby adding successive further aspects to the model and raising its conceptual level until the final model emerges.

4.4.3 Model visualisation

Like theory, a diagram (boxes and arrows) is an abstraction of reality and it may be constructed as a means of simplifying reality and to indicate the links between specific components (Grix 2010: 21, 170). Therefore, diagrams can be a good way of sorting out and visualising the relationships between principles and concepts (Grix 2010: 21; Strauss and Corbin 2008: 107). Usually boxes and arrows are used to depict and attempt to make explicit significant relationships between specific aspects of the diagram. The boxes and arrows themselves do not mean anything, except that they depict the effect of one concept on another. If the relationships between variables are written in text the reader has to imagine it in his mind. However, by using a diagram the reader receives an abstract picture of the relationships. (Grix 2010: 21) In this way, diagrams can be useful and valuable tools for sorting out the relationships between and for integrating principles and concepts, because they provide abstract, visual representations of the concepts and their relationships (Strauss and Corbin 2008: 107).

At its most simplistic Grix (2010: 20) described a diagram as “a representation of something”, but goes further to define it as an abstraction from reality that serves the purpose of ordering and simplifying our view of reality, while still representing its essential characteristics. It is a representation of reality that delineates certain aspects of the real world as being relevant to the problem under investigation. It makes explicit the significant relationships among the aspects that enable the formulation of propositions regarding the nature of these relationships. (Grix 2010: 21) Strauss and Corbin (2008: 108) explained that diagrams need not contain every concept that emerged during the research process, but that they should rather focus on the major concepts and principles to prevent them from being overly complicated. Therefore, the development of diagrams demands careful thinking about the logic of the relationships between the major principles and concepts. Diagrams should flow and the logic should be apparent without a lot of explanation. Diagrams with too many words, lines

and arrows and where the relationships between the principles and concepts are not clear, come across as unclear and muddled and make it difficult for the reader to know what the major point is. Further, the use of successive diagrams throughout a research study should also lead to the integration and inter-relationship of the theory or model being constructed. (Strauss and Corbin 2008: 108)

This study makes use of diagrams throughout to visualise and clarify the links and relationships between the principles and concepts relevant to the construct of the integrated audit evidence planning model. In fact, the development of the integrated audit evidence planning model culminates in a visual illustration thereof that brings together all the main concepts and principles that are derived during the research process. The visualisation of the model assists the reader to understand the flow, logic and interaction of the various concepts and principles discussed and how they lead to the integrated audit evidence planning model.

4.5 MODEL EVALUATION

A key confirmation of any model that lends credibility to that model is whether it is theoretically commensurate with any known empirical facts within the domain (Ryan et al 2002: 28), which is the reason why this study is concluded with a third phase, the confirmation of the integrated audit evidence planning model. Babbie (2010: 363) defined evaluation research as research undertaken for the purpose of appraising and assessing the conceptualisation and design of some social intervention and to determine whether the intervention has produced the intended result. Evaluation research intends to confirm the success level of an approach, procedure, model, result, program, policy, strategy or anything else that requires a structured evaluation or appraisal (Hofstee 2006: 126; Mouton 2013: 158). That is, it seeks to evaluate some aspect of the research results (Babbie 2010: 387). As such, evaluation research is an outcome assessment

and it is one of the last stages of a research study (Grix 2010: 166). Often the intended outcomes can be evaluated with reference to an analysis of existing published documents such as annual reports, field records, letters, etc. (Babbie 2010: 366; Mouton 2013: 158).

This study is concluded by evaluating the integrated audit evidence planning model for conformity to the ISAs. This is accomplished through incorporation of the model into the audit methodology of the AGSA. This practical implementation of the model leads to two secondary objectives of this study (secondary objectives 5 and 6 in section 1.3 of chapter 1), namely confirmation that the model adheres to the ISA requirements and that it is a practical tool to benefit the users thereof when conducting an audit. This was achieved by way of an objective and unbiased assessment of the model through the IRBA's practice review of the AGSA. This independent review of the model by the audit regulating body in South Africa against appropriate, established assessment criteria and standards, demonstrates the IRBA's support for the adherence and conformity of the integrated audit evidence planning model with the ISA requirements and as a practical tool for implementing and applying the ISAs.

4.6 ETHICAL CONSIDERATIONS

The integrated audit evidence planning model presented in this study was developed by the author as part of her role as technical specialist in the Research and Development unit of the office of the AGSA. However, the conceptualisation, research, argumentation, development and writing of the model, as reported in this study, are the author's own original work.

Assurance was provided to the AGSA that the model will be used only for purposes of this study, where after informed consent and written permission was obtained from the author's employer to use the model in this study. (Refer to addendum A for a copy of the approval letter.) Further, the inclusion of the

integrated audit evidence planning model into this study does not breach any confidentially arrangements, as the AGSA's audit methodology, which incorporates the integrated audit evidence planning model, is publicly available and must be used by all audit firms doing work for the AGSA.

4.7 CONCLUSION

In this chapter the research methodology (approach) to the study was discussed. Research is concerned with the interpretation of information to create new knowledge. The research design followed to create this new knowledge is systematic and follows logical, developmental procedures within an established paradigm and in accordance with existing guidelines. These guidelines (research methodology or approach) underlie and unify the study and provide the researcher with an indication of how to perform the research. The methodology is the overall conceptual approach or strategy adopted in the research project, whereas the research methods are the particular techniques, tools and procedures used in conducting research.

The research methodology or approach of this study is based on the broad underlying research principles of inductive qualitative research. Inductive research can be described as theory building research where a general theory emerges from the particular observations. Qualitative research allows for a deeper and more detailed understanding of the qualities and meanings of the phenomena under investigation. Qualitative research and inductive research complement each other as both lend themselves to theory building or model development; qualitative research creates theories through the application of inductive reasoning. Based on this underlying inductive qualitative foundation, the study employs a combination of three research approaches in order to meet the objectives of the study: literature review, model development (theory and model building) and model evaluation (evaluation research).

It was explained that the literature review provides an understanding of the key concepts, principles, theories and current theoretical thinking related to this study through critical analysis and interpretation, thereby creating new perspectives as a basis for the development of the integrated audit evidence planning model.

Phase two of this study employs a theory and model building research approach to develop the integrated audit evidence planning model. The chapter clarified that a theory is a systematically organised body of inter-related concepts and principles that seeks to provide a logical explanation for and understanding of a particular phenomenon. Theory building begins with the facts and information known about a particular phenomenon and requires the researcher to interpret, condense and delineate them into concepts through inductive reasoning. Thereafter statements of relationship between these concepts are made to integrate and link them together into a new theory about the phenomenon being studied. In this study the model building takes place in successive phases from the critical analysis and interpretation of the relevant principles and concepts derived from the literature review that are systematically linked and integrated through the application of inductive reasoning, deliberate thinking and logical interpreting to construct the integrated audit evidence planning model. In particular, the grounded theory approach to theory and model building is applied in this study.

Grounded theory research is particularly suited to the development of new concepts and theories. It begins with phenomena that develop into theory. Theories or new theoretical concepts are the end result of grounded theory research and the true potential of grounded theory is realised only if it is used to progress to theory generation. Grounded theory develops theories on an inductive qualitative basis. The qualitative research aspect enables a rich understanding and in-depth study of the issues and concepts, whereas the inductive reasoning requires active and explicit analysis and interpretation of the particular issues and concepts. The theory that is developed is grounded in

these concepts and phenomena. Grounded theory enables the generation of theory through a constant, iterative, comparative, systematic step-wise process in which the analysis and interpretation of principles and concepts and the generation of theory are not separate stages. Rather they overlap and inter-link to allow the meaning of the principles and concepts to emerge and the relationships between the concepts to become evident through the comparison of the observations and concepts with one another and with the evolving indicative theory. The power of grounded theory lies in the interactive essence that comes from its iterative comparative process and each step of the iterative process raises the conceptual level of and strengthens the emerging theory.

The grounded theory approach, used on an inductive qualitative basis, is particularly suited to the objective of this study which is to develop an integrated audit evidence planning model. This is achieved by means of a systematic, iterative, comparative and inter-linking process, analysing and interpreting the relevant principles and concepts that are grounded in the applicable ISAs and literature. Through each iterative, overlapping, interpretive step of the process relationships are created among the relevant principles and concepts, thereby adding successive further aspects to the model and raising its conceptual level until the final model emerges.

As part of the model development approach of this study, model visualisation is used to provide an abstract, visual representation of the relevant concepts and their relationships. Diagrams are used to visualise, clarify and simplify the links and relationships between the principles and concepts relevant to the construct of the integrated audit evidence planning model, while still representing its essential characteristics. The visualisation of the model assists to understand the flow, logic and interaction of the various concepts and principles and how they are brought together to culminate in the integrated audit evidence planning model.

The final phase of this study employs an evaluation research approach. Evaluation research is an outcome assessment and it is one of the last stages of a research study. It is undertaken to appraise and assess the conceptualisation and design of some social intervention and whether it is theoretically commensurate with any known empirical facts within the domain. To complete this study, the integrated audit evidence planning model is evaluated for conformity to the ISA requirements through the IRBA's practice review of the AGSA.

The integrated audit evidence planning model presented in this study was developed by the author as part of her work at the AGSA. The chapter was concluded with reference to the ethical considerations pertaining to the use of author's AGSA work for purposes of this study.

The next chapter, chapter 5, is the main focus of this study, as it achieves the objective of the study, which is to develop the integrated audit evidence planning model. The chapter deals with the development of the integrated audit evidence planning model, based on the analysis, interpretation and extension of the relevant principles and concepts that were explored in the literature review chapters (chapters 2 and 3). It also addresses the evaluation of the integrated audit evidence planning model.

CHAPTER 5: DEVELOPMENT OF THE INTEGRATED AUDIT EVIDENCE PLANNING MODEL

5.1 INTRODUCTION

The overall objective of this study is to develop an integrated audit evidence planning model to quantify the extent of audit evidence. That is, to develop a model that can be used quantitatively to influence and guide the auditor's judgements regarding the extent and combination of tests of controls, substantive analytical procedures and tests of details in an objective, structured and logical manner, and that quantitatively relates and integrates these judgements with the auditor's risk assessment and overall levels of assurance. This objective, to build such a model, is executed in this chapter.

The previous chapter explained the research approach of this study, which is based on the broad underlying research principles of inductive qualitative research. A combination of three research approaches is employed in order to meet the overall objective of the study. Phase one was completed in chapters 2 and 3 and involved a review of the literature in order to obtain an understanding of the relevant concepts, principles and theories. Phase two uses the grounded theory approach to theory and model building in order to develop the integrated audit evidence planning model, based on the analysis, interpretation and extension of the relevant principles and concepts that were explored in the literature review chapters. Phase three employs evaluation research to look at the evaluation of the integrated audit evidence planning model for adherence to the ISAs. Phases two and three are presented in this chapter.

The ISAs acknowledge that various approaches may be used to accomplish the audit evidence planning decisions and judgements (IAASB 2014c: ISA 200 par. A36). They further recognise that some auditors find a decision model that expresses the general relationships of such a model in mathematical terms

useful when planning audit procedures (IAASB 2014c: ISA 200 par. A36). Although this acknowledgement in the ISAs provides the auditor with some direction as to a possible approach that will result in sufficient appropriate audit evidence, the ISAs lack practical implementation principles and are silent on how to design such a mathematical model that will assist the auditor in deciding how much testing to carry out in order to obtain reasonable assurance on the fair presentation of the financial statements on which to base the audit opinion. The auditor has been left to his own devices to exercise judgement in deciding how to relate the risk assessment to the evidence planning decisions and how to combine the audit test results from tests of controls, substantive analytical procedures and tests of details in a way that can be used in the audit evidence planning decision-making process.

In response to the above and in line with the overall objective of this study, this chapter develops a decision approach in the form of an integrated audit evidence planning model. This chapter therefore forms the focus of this study. The chapter starts by exploring the inter-relationship between different types of audit evidence to derive the audit evidence mix matrix that is illustrated by means of the assurance bucket analogy. (Refer to section 5.2.3.) This is followed by an investigation of audit evidence in relation to audit risk, and the quantitative link to overall levels of assurance and levels of assurance for different types of audit evidence. Thereafter the model considers the quantification of the extent of further audit procedures (tests of controls, substantive analytical procedures and tests of details). It further integrates the above discussions to deduce a schematic visualisation of the integrated audit evidence planning model. This is followed by a reflection on the use of judgement in the application of the integrated audit evidence planning model and the chapter concludes with a consideration of the model's adherence to the ISA requirements.

5.2 THE INTER-RELATIONSHIP BETWEEN TYPES OF AUDIT EVIDENCE

The overall purpose of the auditor in conducting an audit of financial statements is to enhance the users' confidence in the financial statements by expressing an opinion on whether the financial statements are free from material misstatement (IAASB 2014c: ISA 200 par. 3). The auditor is required to obtain reasonable assurance that the financial statements are free from material misstatement as the basis for the audit opinion. Reasonable assurance is achieved when sufficient appropriate audit evidence has been gathered to reduce the risk of expressing an inappropriate opinion on the financial statements to an acceptably low level. (IAASB 2014c: ISA 200 par. 5) Thus, audit evidence is central to the overall objective of an audit of expressing an opinion on whether material misstatements exist in the financial statements; it is the information used by the auditor to draw reasonable conclusions on which to base the audit opinion. In addition, there is a relationship between the sufficiency and appropriateness of audit evidence, the assessed risks of material misstatement and the nature, timing and extent of the audit procedures that will enable the auditor to express an opinion on the financial statements at an acceptably low level of audit risk.

As part of planning an audit that will result in sufficient appropriate audit evidence on which to base the audit opinion two inter-related processes can be identified; risk assessment and evidence planning. Risk assessment involves the identification and assessment of risk factors that impact the likelihood of material misstatement, followed by an assessment of the level of risk at assertion level in order to determine which classes of transactions, account balances and disclosures to focus on. The risk assessment provides a basis for designing and implementing responses to the assessed risks of material misstatement and it informs the auditor's evidence planning decisions. (IAASB 2014g: ISA 315 par. 3) Therefore, as a first step, the auditor performs risk assessment procedures to obtain an understanding of the entity and its environment, including the entity's internal control, in order to identify and

assess the risks of material misstatement at the financial statement and assertion levels (IAASB 2014g: ISA 315 par. 3). Once the risks of material misstatement have been assessed an audit strategy and accompanying audit plan are developed that determine the nature, timing and extent of further audit procedures to be performed in particular areas to respond to the assessed risks of material misstatement. ISA 330.6 (IAASB 2014i) explicitly states that the auditor must design and perform audit procedures that are responsive to the risks of material misstatement at the assertion level. The understanding obtained by means of the risk assessment establishes a frame of reference within which evidence planning takes place. The auditor exercises professional judgement to plan the audit to respond to the assessed risks of material misstatement, including designing and performing further audit procedures to obtain sufficient appropriate audit evidence. (IAASB 2014g: ISA 315 par. A1) An audit is a continuous, dynamic process of gathering, updating and analysing information throughout the audit (IAASB 2014g: ISA 315 par. A1). The auditor's risk assessment may change during the course of the audit, based on new information that is obtained or on audit evidence obtained from performing further audit procedures that is inconsistent with the audit evidence on which the auditor's original risk assessment was based. In such circumstances, the risk assessment must be revised and the planned further audit procedures must be amended accordingly. (IAASB 2014g: ISA 315 par. 31)

Audit evidence planning, the other inter-related process referred to earlier, requires the auditor to relate the risk assessment to decisions about the nature, timing and extent of audit evidence needed in the client's particular circumstances and environment. The basic relationship being that the higher the assessment of risk, the more persuasive the audit evidence needs to be, which may increase the extent of audit work that will have to be done. (IAASB 2014i: ISA 330 par. 7(b), A19) It can be deduced that the risk assessment decides the persuasiveness of the audit evidence required, which can be related to the amount or extent of further audit procedures to be performed. In

conceptual terms, the evidence planning process can be seen as obtaining reliance from different types of evidence in response to the assessed risks in order to reduce audit risk to an acceptably low level and give a reasonable level of assurance on which to base the audit opinion. Professional judgement is required to determine the different types of procedures to be performed and the extent to which such procedures should be performed during the course of the audit. Assurance may be drawn from tests of controls and from substantive procedures, with the latter providing a further choice between substantive analytical procedures and tests of details. Evidence planning further requires judgement regarding the inter-relation between the different types of audit procedures, as well as the accumulation or aggregation of the extent of audit evidence obtained from the different audit procedures that are performed in response to the assessed risks.

In terms of ISA 330.4 (IAASB 2014i), the auditor has three types of further audit procedures at his disposal in order to respond to the assessed risks of material misstatement: tests of controls, substantive analytical procedures and tests of details. Tests of controls are performed to test the operating effectiveness of controls in preventing, or detecting and correcting material misstatements at the assertion level, whereas substantive procedures (substantive analytical procedures and tests of details) are designed to detect material misstatements at the assertion level (IAASB 2014i: ISA 330 par. 4). A combination of these three types of further audit procedures is performed to respond to the auditor's assessment of the risks of material misstatement and to provide the audit evidence on which the audit opinion is based (Budescu et al 2012: 19, 24).

5.2.1 Audit evidence gathering approaches

The audit plan sets out the different combinations of types of audit procedures and the extent of such procedures used to obtain audit evidence about the assertions for specific classes of transactions, account balances and

disclosures (IAASB 2014f: ISA 300 par. A12). The extent and type of audit evidence (tests of controls, substantive analytical procedures and tests of details) that the auditor decides are necessary to form an opinion on the financial statements require the auditor's professional judgement (IAASB 2014i: ISA 330 par. A60, A62). This judgement will be influenced by answering such questions as: what are the circumstances of a particular engagement; what are the risks of material misstatement of the financial statements; what are the significant classes of transactions, account balances and disclosures in the financial statements; what is the auditor's understanding of the entity's internal control; etc? These questions are not exhaustive, but indicate the kinds of considerations and judgements the auditor must make in planning the combination of types and extent of further audit procedures to perform in order to obtain sufficient appropriate audit evidence on which to base the audit opinion (IAASB 2014i: ISA 330 par. 7). The goal in every audit must be to respond to the entity's specific circumstances and assessed risks of material misstatement, as well as to obtain the required audit evidence in the most efficient and effective manner. The application of a standard combination of types and extent of procedures to all assertions, classes of transactions, account balances and disclosures will generally not be responsive to different risks of material misstatement. Consequently, a standard combination of types and extent of procedures is not an appropriate response in terms of the ISAs as it will not provide a clear linkage between the assessed risks of material misstatement and the nature, timing and extent of the auditor's further audit procedures (IAASB 2014i: ISA 330 par. A8).

Therefore, in deciding the nature, timing and extent of audit procedures to be performed in order to obtain sufficient appropriate audit evidence at assertion level, the auditor can choose from a number of alternative approaches (IAASB 2014i: ISA 330 par. A4). For purposes of the current study and in accordance with ISA 330.A3 (IAASB 2014i), alternative approaches refer to the different combinations of types of audit procedures; i.e. tests of controls, substantive

analytical procedures and tests of details, the varying extents of such procedures, together with the linkage or inter-relationship between the procedures. The auditor might, for example, decide to perform tests of controls in combination with limited substantive procedures for one assertion, but might decide to obtain audit evidence mainly from substantive procedures for another assertion. For example, in relation to revenue, tests of controls may be most responsive to the assessed risk of material misstatement of the completeness assertion, whereas substantive procedures may be most responsive to the assessed risk of misstatement of the occurrence assertion (IAASB 2014i: ISA 330 par. A9). It is therefore necessary to evaluate the different audit evidence gathering options available to the auditor or the different approaches that the auditor can employ under the ISAs to obtain sufficient appropriate audit evidence.

5.2.1.1 The combined vs. substantive audit evidence gathering decision

The auditor's assessment of the risks of material misstatement, based on the auditor's understanding of the entity's internal control, provides an indication of whether or not the controls are properly designed, implemented and/or operating effectively (IAASB 2014i: ISA 330 par. 8(a)). That is, the results of the risk assessment procedures require the auditor to make the first audit evidence gathering decision (referred to as D1); whether or not to rely on the operating effectiveness of controls in determining the nature, timing and extent of substantive procedures. It requires a decision from the auditor on whether or not to test the expectation that controls are operating effectively, by performing tests of controls in order to obtain sufficient appropriate audit evidence regarding whether or not the relevant controls are in fact operating effectively.

This decision presents the auditor with one of two alternatives. When obtaining an understanding of the entity's controls and evaluating the design and implementation of the controls, the auditor may either conclude that there is a

reasonable expectation that the controls are suitably designed to effectively prevent, or detect and correct, material misstatements in an assertion, or that they are not suitable to do so (IAASB 2014i: ISA 330 par. A20). Clearly in the latter case, where the risk assessment procedures indicate that the controls are not properly designed and/or implemented, there is no point in testing the operating effectiveness of controls. Instead the auditor will perform only substantive procedures to obtain the desired extent of audit evidence needed to reduce the risk of material misstatement for the particular class of transactions, account balance, disclosure and assertion to an acceptably low level. This approach may be referred to as a substantive approach, as controls are not tested and the required level of assurance is obtained exclusively from substantive procedures (substantive analytical procedures and tests of details), which implies a greater extent of substantive procedures.

Where the evaluation suggests that the controls are properly designed and implemented, as well as operating effectively, the auditor is required to make a decision as to whether or not he intends to rely on the operating effectiveness of controls in order to perform less extensive substantive procedures (tests of details and analytical procedures), referred to as a combined approach. The basic audit approach alternatives are either to perform tests of controls and thereby limit substantive procedures (a combined approach), or to perform only substantive procedures (a substantive approach). The exception is that a combined approach is compulsory when an entity conducts its business using information technology (IT) and no documentation of transactions is produced or maintained, other than through the IT system (IAASB 2014i: ISA 330 par. A24). However, irrespective of whether the auditor obtains assurance from testing controls, he must perform substantive procedures for each material class of transactions, account balance and disclosure (IAASB 2014i: ISA 330 par. A18). Consequently, a decision must be made regarding whether to proceed directly with a substantive approach or to continue with a combined approach by performing tests of controls to obtain audit evidence that the

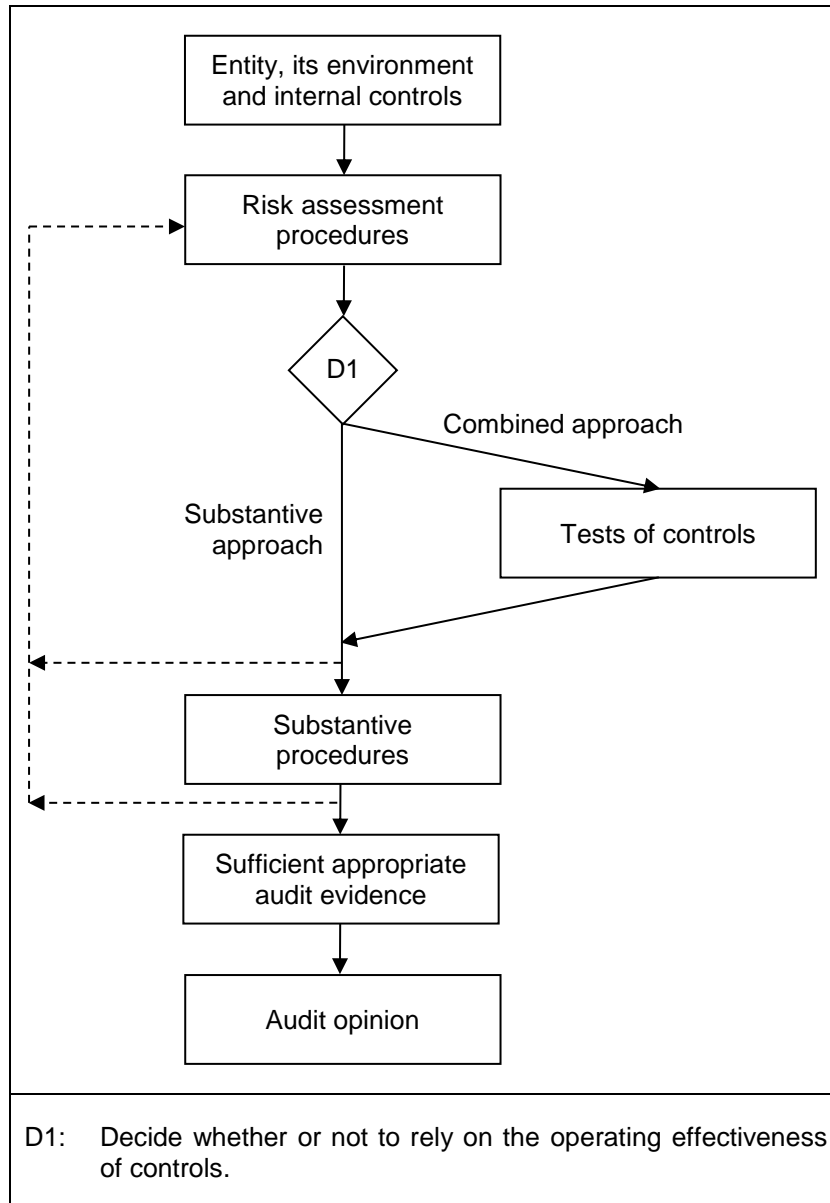
controls are, in fact, operating effectively. Of course, for a poorly designed system of internal control the auditor will omit testing controls, as even efficient operation of such controls cannot be used to justify reducing the extent of substantive procedures and resources spent on testing such poorly designed controls will be wasted.

The decision between a combined approach and a substantive approach is generally based on efficiency and effectiveness considerations; i.e. will it be efficient and effective to limit substantive procedures for a specific class of transactions, account balance, disclosure and assertion by performing tests of controls or will it be more efficient and effective to perform substantive procedures only? The auditor's aim is to not only choose an approach that will adhere to the ISA requirements, but that will most efficiently and effectively limit the risk of material misstatement of the financial statements to an acceptably low level. (Eilifsen et al 2010: 168; AICPA 2008: par. 3.77; O'Reilly et al 1999: 134 - 136; Kinney 1975: 15) As substantive procedures must always be performed for each material class of transactions, account balance and disclosure (IAASB 2014i: ISA 330 par. A18), performing tests of controls is generally more efficient and effective only if the audit time and effort saved by limiting substantive procedures exceed the time and effort spent in performing the tests of controls, or if the tests of controls provide assurance on more than one assertion, class of transactions, account balance or disclosure (O'Reilly et al 1999: 153). Similarly, it may be efficient and effective to (1) test the operating effectiveness of controls at the same time as evaluating their design and implementation (IAASB 2014i: ISA 330 par. A21), (2) obtain audit evidence about the operating effectiveness of controls from certain risk assessment procedures (IAASB 2014i: ISA 330 par. A22), or (3) design tests of controls to be performed concurrently with tests of details on the same transaction (IAASB 2014i: ISA 330 par. A23). Further, only tests of controls that are suitably designed to prevent, or detect and correct, a material misstatement in an assertion will be efficient and effective (IAASB 2014i: ISA 330 par. A20).

Thus, in making the first audit evidence gathering decision (D1) between a combined approach and a substantive approach, the auditor should not automatically decide to perform tests of controls, even if it seems that they may provide the necessary audit evidence, without considering whether performing them will be efficient and effective. The audit approach for each significant class of transactions, account balance and disclosure will depend on the auditor's judgement about the materiality of the class of transactions, account balance or disclosure, about how effectively relevant controls are designed, implemented and operating and about whether it is more efficient and effective to test the controls than to perform substantive procedures only.

The above discussion on the initial audit evidence gathering decision between a combined approach and a substantive approach is schematically presented in diagram 5.1.

Diagram 5.1: Combined vs. substantive audit evidence gathering decision model



5.2.1.2 The substantive analytical procedures vs. tests of details audit evidence gathering decision

From the preceding discussion on combined vs. substantive audit evidence gathering approaches, it is evident that the auditor may choose to obtain the

audit evidence needed to address the risks of material misstatement entirely from substantive procedures (substantive analytical procedures and tests of details), or together with testing controls under a combined approach. However, in terms of the ISAs (IAASB 2014i: ISA 330 par. 18) the desired level of audit evidence cannot be obtained from tests of controls alone; that is, assurance solely obtained from testing controls is not sufficient for material classes of transactions, account balances and disclosures. Thus, irrespective of whether or not assurance was obtained from performing tests of controls, substantive procedures must be performed for the assertions relevant to material classes of transactions, account balances and disclosures. This requirement reflects the fact that even if the design and implementation of controls are adequate and the operating effectiveness is acceptable, there are inherent limitations such as management override, collusion among employees, faulty decision-making and human error in any system of internal control and the auditor should not rely only on internal control to the exclusion of substantive procedures. (IAASB 2014g: ISA 315 par. A46, A47)

Substantive procedures comprise both substantive analytical procedures and tests of details (IAASB 2014i: ISA 330 par. 4). While substantive procedures are always required, the relative mix of substantive analytical procedures and tests of details can vary depending on the circumstances, with the assurance obtained from one reducing the assurance needed from the other. This brings the auditor to the second audit evidence gathering decision (referred to as D2); whether to perform either substantive analytical procedures or tests of details or a combination of both.

The auditor chooses the nature and combination of substantive procedures that is most efficient and effective in obtaining the extent of audit evidence required to reduce audit risk to an acceptable level. Although substantive analytical procedures commonly provide an efficient means of obtaining assurance, they are generally more applicable to large volumes of transactions that tend to be predictable over time (IAASB 2014n: ISA 520 par. A6). In contrast, tests of

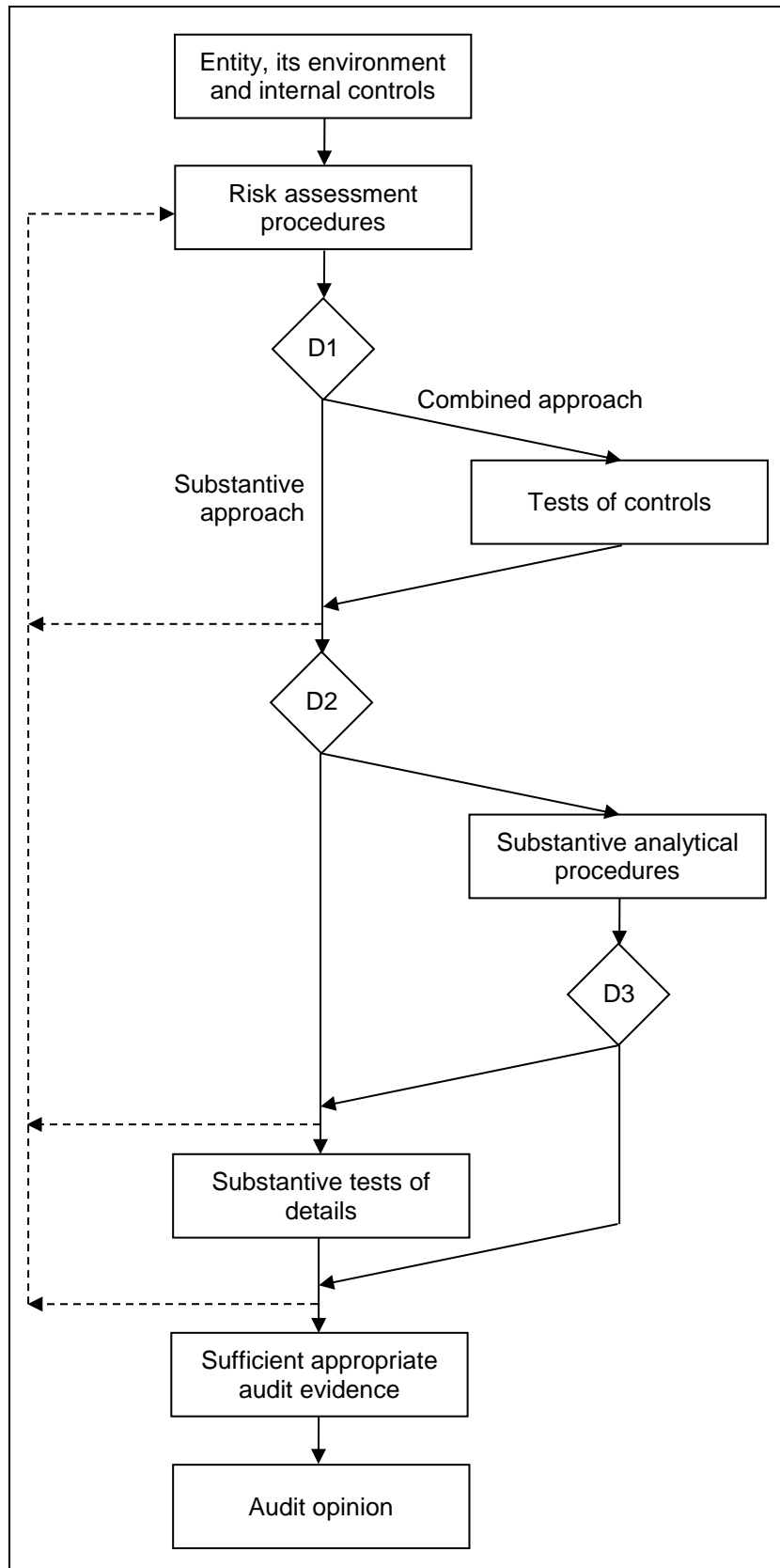
details are typically more effective in providing a higher level of assurance, even if they are less efficient (Eilifsen et al 2010: 168). As a result, depending on the circumstances, the auditor may determine that performing substantive analytical procedures alone may be sufficient to reduce the risks of material misstatement to an acceptably low level, or that performing only tests of details may be appropriate, or that a combination of substantive analytical procedures and tests of details are most responsive to the assessed risks. Where controls are properly designed, implemented and operating effectively, performing substantive analytical procedures alone can be sufficient. However, if the auditor determines that an assessed risk of material misstatement at the assertion level is a significant risk, the auditor must perform substantive procedures that are specifically responsive to that risk (IAASB 2014i: ISA 330 par. 21). (Refer to section 5.3.2 for a discussion on the impact of significant risk.) As a result, tests of details, either alone or in combination with substantive analytical procedures and/or tests of controls, are most likely appropriate.

In addition to the requirement that substantive procedures must always be performed for each material class of transactions, account balance and disclosure, there are two further situations where the extent, nature and combination of substantive procedures may need to be reconsidered. (1) Where the results from tests of controls are unsatisfactory: If the expectation that controls are properly designed and implemented is not supported by the results of the tests on these controls, the auditor should either test alternative or more controls or increase the extent of substantive procedures. However, rather than testing additional or alternative controls, it is often more efficient and effective to increase the extent of substantive procedures to reflect the change in the controls assurance. (IAASB 2014i: ISA 330 par. A46) (2) Where substantive analytical procedures identify unusual fluctuations: If the unusual fluctuations in the relationships of a class of transactions, account balance or disclosure to other financial or non-financial information cannot be resolved, the auditor should perform other audit procedures such as tests of details, to determine

whether misstatements have actually occurred (IAASB 2014n: ISA 520 par. 7(b)). This is referred to as audit evidence gathering decision D3.

The above discussion on the second and third audit evidence gathering decisions regarding substantive procedures in response to the initial combined vs. substantive approach decision is schematically presented in diagram 5.2. The diagram builds on and expands the schematic in diagram 5.1.

Diagram 5.2: Audit evidence gathering decision model



- D1: Decide whether or not to rely on the operating effectiveness of controls.
- D2: Decide whether to perform either substantive analytical procedures or tests of details or a combination of both.
- D3: Decide whether tests of details need to be performed.

Diagram 5.2 illustrates a simplified network of the different audit evidence gathering options available to the auditor or the different approaches that the auditor can employ to obtain sufficient appropriate audit evidence in support of the audit opinion. It demonstrates the inter-relationship between tests of controls, substantive analytical procedures and tests of details in the audit planning decisions that are required in response to the risk assessment.

From analysing diagram 5.2, it is evident that the auditor potentially has three decision points in response to the risk assessment procedures performed to obtain an understanding of the entity's internal control and prior to reaching an audit opinion. This leaves the auditor with six possible routes to an opinion. Three involve tests of controls; i.e. a combined approach is followed, while the other three routes do not include tests of controls; i.e. a substantive approach is used. Under the first three routes, tests of controls are performed together with (1) substantive analytical procedures alone or (2) only tests of details or (3) a combination of substantive analytical procedures and tests of details. The remaining three routes require only substantive procedures: the auditor can perform (4) substantive analytical procedures alone or (5) only tests of details or (6) a combination of substantive analytical procedures and tests of details, without performing tests of controls in addition to these substantive procedures.

Often one or more parts of the auditor's decision route, planned in response to the assessed risks, may yield unsatisfactory results in a particular audit situation and the auditor should consider the contingent nature of the D1, D2 and D3 decisions in planning the audit approach. In particular, (1) tests of controls may indicate that the auditor cannot be confident that the properly designed controls are being applied an acceptably high percentage of the time, (2) the control-design itself may not be adequate for reliance even if the controls are operating effectively, as they may be subject to management override or collusion, or (3) the substantive analytical procedures may indicate unusual relationships that cannot be resolved. The appropriate response by the auditor under all these

alternative conditions, as illustrated in diagram 5.2, is to conduct further tests of details although the nature, timing and extent of the tests may vary.

Further, the auditor must keep in mind that an audit is a continuous and iterative process of gathering, updating and analysing information throughout the audit (IAASB 2014g: ISA 315 par. A1). As the auditor performs the planned tests of controls, substantive analytical procedures and tests of details, information may come to the auditor's attention that differs significantly from the information on which the initial risk assessment was based (IAASB 2014g: ISA 315 par. 31). This may cause the auditor to revise the assessed risks, to modify the D1, D2 and D3 audit evidence gathering decisions and to re-evaluate the planned further audit procedures accordingly for all or some of the classes of transactions, account balances or disclosures and related assertions. For example, substantive analytical procedures may indicate a previously unrecognised risk of material misstatement or the nature of the misstatements detected by performing tests of details may indicate a significant deficiency in internal control. (IAASB 2014i: ISA 330 par. A60) The continuous and iterative revision of further audit procedures in response to changes in the risk assessment is illustrated in diagram 5.2 by means of the dotted lines.

When planning the audit approach and selecting the most appropriate audit evidence gathering route, the auditor should also keep efficiency and effectiveness considerations in mind (El-Masry and Hansen 2008: 26; Hayes 2007: 58). It is unlikely that tests of details via D3 will require large sample sizes, but to perform them in addition to tests of controls and/or substantive analytical procedures may not be as efficient and effective as performing tests of details via D1. Only if controls are found to be adequate and no unusually relationships are revealed through substantive analytical procedures (i.e. no tests of details are required) will the combined route be more efficient and effective than the tests of details route. Thus, depending on the particular circumstances, the auditor may judge testing controls to be inefficient and ineffective and to rather perform extensive tests of details only. This conclusion

is supported both in the literature (Eilifsen et al 2010: 168, 171; AICPA 2008: par. 3.77, O'Reilly et al 1999: 150 - 153) and in the ISAs, with ISA 330.A4(b) (IAASB 2014i) confirming that "... the auditor may determine that ... performing only substantive procedures is appropriate ... because testing controls would be inefficient ...".

5.2.2 The audit evidence mix matrix

It can be concluded from the above discussion on diagram 5.2 that the choice of which types of audit procedures to use and how extensively they need to be performed can vary widely in response to different levels of internal control effectiveness and risks of material misstatement. Even within a given audit, the different audit evidence gathering approaches employed by the auditor are likely to vary between different classes of transactions, account balances and disclosures and from assertion to assertion. In order to obtain sufficient appropriate audit evidence in response to the risks of material misstatement identified through the risk assessment procedures, the auditor employs various combinations of types of audit procedures; i.e. tests of controls, substantive analytical procedures and tests of details. These different combinations of procedures can be referred to as the audit evidence mix matrix and is summarised in table 5.1.

Table 5.1: Audit evidence mix matrix

Types of procedures	Audit evidence gathering approaches					
	Combined approaches			Substantive approaches		
	Approach 1	Approach 2	Approach 3	Approach 4	Approach 5	Approach 6
Tests of controls	Yes	Yes	Yes	–	–	–
Substantive analytical procedures	Yes	–	Yes	Yes *	–	Yes
Tests of details	–	Yes	Yes	–	Yes	Yes

* This approach cannot be employed where the risk of material misstatement is significant (IAASB 2014i: ISA 330 par. 21). (Refer to section 5.3.2 for a discussion on the impact of significant risk.)

It is evident from the above table that the auditor has more than one type of audit evidence on which to base his opinion and that the audit evidence obtained from each audit procedure potentially is just a part of the total audit evidence that the auditor obtains. Often the auditor does not rely on a single audit procedure to obtain sufficient appropriate audit evidence, but reaches an overall conclusion based on the results of numerous inter-related procedures that are performed.

5.2.3 The assurance bucket analogy

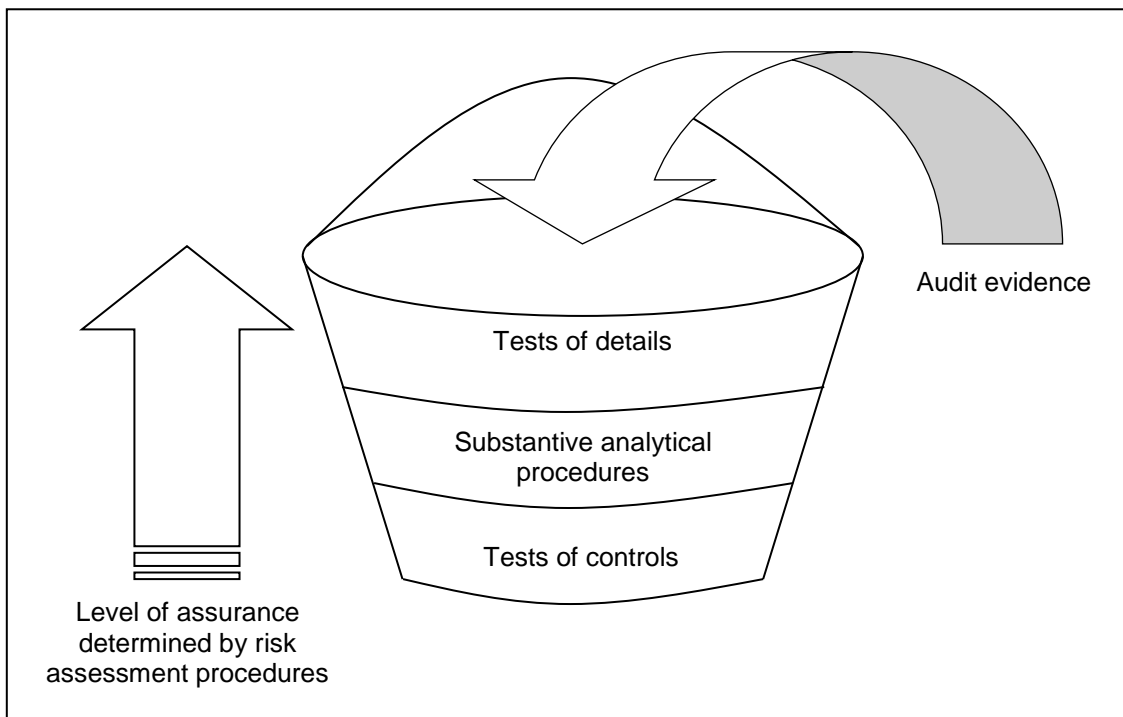
Eilifsen et al (2010: 171) introduced an alternative way in which to visualise the audit evidence mix matrix through the use of the “assurance bucket” analogy. The analogy helps to understand and visualise how the auditor decides on the proper mix of audit evidence. The assurance bucket must be filled with sufficient audit evidence to obtain the level of assurance necessary to reduce audit risk to

an acceptably low level to support the audit opinion. In the analogy used by Eilifsen et al (2010: 171), the assurance bucket is filled through the use of four types of procedures; these are risk assessment procedures, tests of controls, substantive analytical procedures and tests of details.

This study also finds it useful to employ the assurance bucket analogy, but adapts Eilifsen et al's (2010: 171) analogy as follows: the results of the auditor's risk assessment procedures are used to determine the size of the assurance bucket to be filled by a combination of the three remaining types of procedures; tests of controls, substantive analytical procedures and tests of details. The risk assessment procedures are not used to fill the assurance bucket as in Eilifsen et al's (2010: 171) application, but rather to determine the size of the assurance bucket; i.e. the extent of audit evidence required from tests of controls, substantive analytical procedures and tests of details. This application is supported by the ISAs as the auditor performs risk assessment procedures by obtaining an understanding of the entity and its environment, including the entity's internal control, in order to enable the auditor to identify and assess the risks of material misstatement at the financial statement and assertion levels (IAASB 2014g: ISA 315 par. 5). The auditor's objective in performing risk assessment procedures is to provide a basis for designing and implementing responses to the assessed risks of material misstatement (IAASB 2014g: ISA 315 par. 3); that is, to provide a basis for designing and performing tests of controls and substantive procedures. Risk assessment procedures by themselves do not provide sufficient appropriate audit evidence (IAASB 2014g: ISA 315 par. 5); they only direct the planning and design of further audit procedures (tests of controls, substantive analytical procedures and tests of details) whose nature, timing and extent are responsive to the assessed risk of material misstatement at the assertion level and that will provide sufficient appropriate audit evidence on which to base the audit opinion (IAASB 2014g: ISA 315 par. A109). Therefore, it is in line with the ISAs to apply the assurance bucket analogy in such a manner that the risk assessment procedures are not

used to fill the assurance bucket, but rather to determine the size of the assurance bucket; i.e. the extent of audit evidence required from tests of controls, substantive analytical procedures and tests of details. The continuous, dynamic nature of an audit may however necessitate the re-evaluation of the size of the assurance bucket. Where audit evidence from tests of controls, substantive analytical procedures and tests of details is inconsistent with the information on which the originally bucket-size decision was based, the assessed risk and the size of the assurance bucket are modified and the nature, timing and extent of further audit procedures changed accordingly. The assurance bucket analogy is illustrated in diagram 5.3.

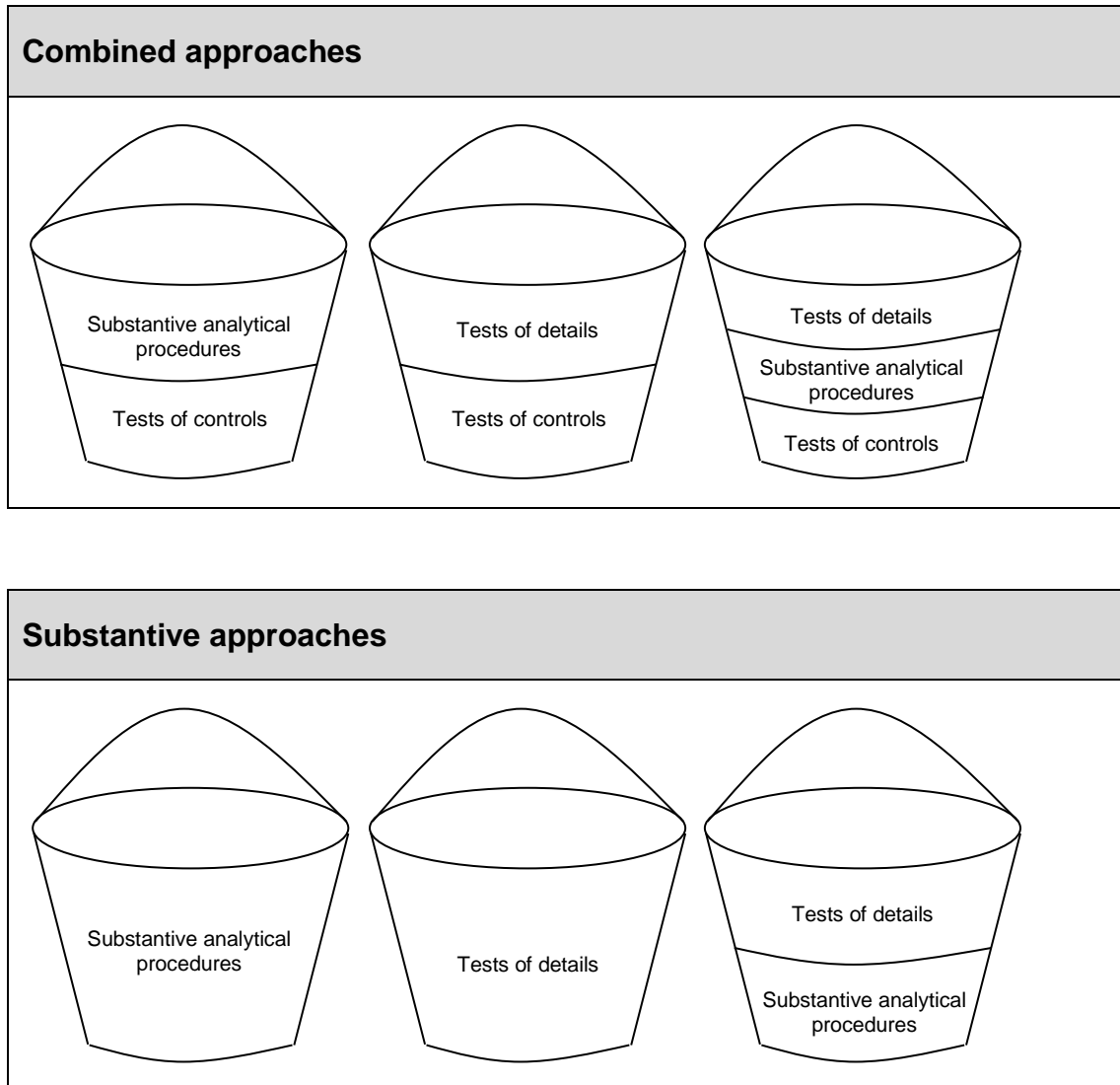
Diagram 5.3: The assurance bucket analogy



(Source: Adapted from Eilifsen et al (2010: 171))

Following the audit evidence gathering decision process set out in diagram 5.2 the auditor first considers filling the bucket with audit evidence from tests of controls. The auditor may next perform substantive analytical procedures and adds the assurance gained from these procedures to the bucket. The auditor would then need to fill up the remainder of the assurance bucket with audit evidence obtained through tests of details. Following all the alternative audit evidence gathering decision routes through diagram 5.2 and considering the various audit evidence mixes illustrated in the six different audit evidence gathering approaches in the matrix in table 5.1, the auditor can potentially fill the assurance bucket as presented in diagram 5.4.

Diagram 5.4: Alternative assurance buckets



5.3 LEVELS OF ASSURANCE OF TYPES OF AUDIT EVIDENCE

The auditor's overall objective in conducting an audit is the expression of an audit opinion on whether the financial statements are free from material misstatement (IAASB 2014i: ISA 330 par. 11). The auditor needs reasonable assurance (i.e. a high level of assurance) that the opinion is appropriate and therefore needs to limit his exposure to audit risk (i.e. the risk of expressing an

inappropriate audit opinion) to an acceptably low level. The auditor reduces the risk of expressing an inappropriate opinion to an acceptably low level by obtaining sufficient appropriate audit evidence (IAASB 2014c: ISA 200 par. 5) through proper planning of the nature, timing and extent of further audit procedures (IAASB 2014i: ISA 330 par. 8).

5.3.1 Overall assurance and audit risk

Audit risk is the risk that the auditor expresses an inappropriate audit opinion when the financial statements are materially misstated; i.e. there is some risk that the financial statements might be materially misstated even when the opinion is unqualified. (Refer to section 3.4.3.) Audit risk should not only be considered in relation to the financial statements as a whole, but should also be taken into account for specific classes of transactions, account balances and disclosures and their related assertions because they are likely to have different patterns of risk and the different audit procedures are likely to have varying degrees of efficiency and effectiveness. Therefore, the auditor's overall objective in conducting an audit can be linked to the objective of limiting audit risk in individual classes of transactions, account balances and disclosures and assertions so that the overall audit risk is limited to an acceptably low level (or conversely, that the level of assurance is sufficiently high) at the completion of the audit, to permit the auditor to express an opinion on the financial statements as a whole.

The auditor manages this risk of expressing an inappropriate audit opinion by designing and performing audit procedures that will permit expressing an opinion on the financial statements with a low risk that the opinion is inappropriate (IAASB 2014c: ISA 200 par. A43). This is achieved by varying the nature, timing and extent of audit procedures in response to the auditor's assessment of risk. Therefore, the nature and extent of audit evidence gathered by the auditor are related to the level of assurance that is sufficient to reduce

the risk of expressing an inappropriate opinion to an acceptably low level. Stated another way, the auditor seeks a low risk that the opinion expressed is inappropriate, or a high level of assurance that the financial statements are free from material misstatement in order for him to express an unmodified opinion on whether the financial statements are prepared in accordance with an applicable financial reporting framework (IAASB 2014c: ISA 200 par. 3).

Thus, it can be deduced that the compliment of audit risk is an expression of the level of assurance that the opinion will be appropriate. For example, if an auditor accepts 10% audit risk, the level of assurance is specified as 90%. Limiting audit risk to an acceptably low level and obtaining a suitably high level of assurance are alternative ways of looking at the same process. Audit risk is the corollary of the level of assurance that the auditor needs at the conclusion of the audit when expressing the audit opinion.

5.3.2 Setting overall levels of assurance

The integrated audit evidence planning model developed in this study is defined in terms of levels of assurance rather than audit risk. It uses the concept of levels of assurance (i.e. acceptable levels of audit risk) to model and direct the audit procedures and to quantitatively influence the extent of testing. As a start, it is therefore necessary to establish overall levels of assurance, or alternatively, overall levels of audit risk that are acceptable under the integrated audit evidence planning model. Establishing an overall audit risk or level of assurance with which the auditor feels comfortable, allows the auditor to say to clients and the public, in litigation or wherever it is questioned, that this specific level of assurance was achieved on which the conclusions and audit opinion are based. This is in line with acceptable auditing practice, as various firms have established acceptable overall levels of audit risk as a matter of firm policy, whether qualitatively (e.g. low) or quantitatively (e.g. 5%). For example, Hooks (2011: 389) stated that planning is simplified if audit firms have guidelines

regarding the level of audit risk they are willing to accept and Houston, Peters and Pratt (1999: 286) referred to various studies that have shown that audit firms have policies that set audit risk at predetermined levels. Some firms express these risks using terms like “high, moderate and low” or “substantial, moderate and little” rather than using estimates of risk percentages (AICPA 2008: par. 4.41; Elder and Allen 2003: 985; Kachelmeier and Messier 1991: 55).

However, quantitative risks or levels of assurance are expected to provide more meaningful measures and contribute to more consistent communication within audit teams and to more effective quality control, thereby potentially leading to more efficient and effective audits (Fukukawa and Mock 2011: 76). To this end, Kechelmeier and Messier (1991: 55), for example, linked “substantial, moderate and little” levels of assurance to 95%, 90% and 77.7%, respectively, whereas Eilifsen et al (2010: 282) recommended a percentage interval of 90 – 95% for a high level of assurance, 80 – 85% for a moderate level of assurance and 70 – 75% for a low level of assurance. In a study on the development of the audit methodologies of large accounting firms in the United Kingdom, Turley and Cooper (1991: 67) found that a 95% level of assurance, or a 90% level with an increase to 95%, was often used. Chong and Vinten (1996: 37) indicated that a 90% - 95% level of assurance is most appropriate. As a final example, the audit sampling guide, issued by the AICPA (2008: table 4.6), provides the guidelines specified in table 5.2 for setting levels of assurance.

Table 5.2: Levels of assurance vs. audit risk

Level of assurance (Risk of material misstatement)	Level of audit risk (%)	Level of assurance (%)	Assurance factor
Slight level of assurance (Slight risk of material misstatement)	37%	63%	1
Standard level of assurance (Standard risk of material misstatement)	14%	86%	2
Significant level of assurance (Significant risk of material misstatement)	5%	95%	3

(Source: Adapted from AICPA (2008: table 4.6))

Although the audit sampling guide issued by the AICPA is not authoritative under the ISAs issued by the IAASB, it does provide useful guidelines of what is considered reasonable levels of assurance that are widely accepted in practice. This was confirmed in literature studies; Hall et al (2002: 130) found that most auditors in public accounting, industry and government rely on the AICPA literature in their sampling practices, whereas Hoogduin, Hall and Tsay (2010: 137) stated that the AICPA levels of assurance are commonly used in practice. Consequently, it is appropriate and in line with generally accepted auditing practice and global audit guidance, to adopt the AICPA recommended levels of assurance in the integrated audit evidence planning model developed in this study.

The AICPA guidance on which table 5.2 is based does not assign descriptors to the risk and levels of assurance. The descriptors of “slight, standard and significant” used to depict the different levels of assurance are assigned for purposes of this study. It is similar to other qualitative risk expressions such as “high, moderate and low” and “substantial, moderate and little” that are found in literature, as discussed above. (AICPA 2008: par. 4.41; Elder and Allen 2003:

985; Kachelmeier and Messier 1991: 55) Table 5.2 also assigns assurance factors of 1, 2 and 3 to the different levels of assurance. It is a quantitative way of expressing the qualitative descriptors of slight, standard and significant levels of assurance, respectively. Although these factors may at this stage appear to be arbitrary, they have a distinct meaning that is derived in section 5.7.1.4.

The auditor's assessment of the identified risks at the assertion level is used to plan the extent of further audit procedures to be performed. The extent of audit evidence gathered by the auditor should provide a level of assurance that is sufficient to respond to the assessed level of audit risk and the auditor must obtain more persuasive audit evidence the higher the auditor's assessment of risk (IAASB 2014i: ISA 330 par. 7(b)). As a minimum, the auditor must increase the extent of audit evidence and therefore the level of assurance obtained in order to respond to this requirement (IAASB 2014i: ISA 330 par. 21, A19). Thus, the higher the level of risk, the greater the quantity of audit evidence and the level of assurance that are required.

Applying these principles and the AICPA guidelines on levels of assurance to this study, the integrated audit evidence planning model assumes three distinct risk levels that imply the following three corresponding levels of assurance:

- Slight (63%) level of assurance = 1:

If the class of transactions, account balance or disclosure is not material by value or nature and does not require special audit consideration to respond to the assessed risk of material misstatement at the assertion level, this is the level of audit evidence that should be obtained.

- Standard (86%) level of assurance = 2:

A standard level of audit evidence is needed if the class of transactions, account balance or disclosure is material by value and/or nature and does not require special audit consideration to respond to the assessed risk of material misstatement at the assertion level.

- Significant (95%) level of assurance = 3:

This is the level of audit evidence that is required if the class of transactions, account balance or disclosure is material by value and/or nature and, in the auditor's judgement, requires special audit consideration to respond to the assessed risk of material misstatement at the assertion level.

Typically a standard level of assurance will most often be applied in practice. Under these conditions the auditor is exposed to a 14% risk of expressing an inappropriate audit opinion when the financial statements are materially misstated. Therefore, the extent of audit evidence gathered by the auditor should provide an 86% level of assurance that the financial statements are free from material misstatement.

In those situations where, in the auditor's judgement, an assessed risk requires special audit consideration to respond to the assessed risk of material misstatement at the assertion level, ISA 330.21 (IAASB 2014i) requires the auditor to perform substantive procedures that are specifically responsive to that risk. The auditor can do so by varying the nature, timing and/or extent of the substantive procedures. In order to respond to this requirement, the integrated audit evidence planning model developed in this study adopts the approach of increasing the extent of audit evidence to be obtained by requiring a 95% level of assurance, thereby reducing the risk of expressing an inappropriate opinion from 14% under the standard level of assurance to only 5% in these circumstances.

Strictly speaking, in terms of the ISAs the auditor is not required to perform further audit procedures in situations where the auditor's risk exposure is only slight; i.e. where the auditor is exposed to a 37% risk of expressing an inappropriate audit opinion and thus requires a 63% level of assurance from audit evidence. A slight level of assurance is defined above as being applicable to classes of transactions, account balances or disclosures that are not material

by value or nature. Even though the ISAs only require the auditor to perform audit procedures for each material class of transactions, account balance and disclosure (IAASB 2014i: ISA 330 par. 18), there is nothing in the ISAs that prohibits the execution of some audit procedures where the level of risk is only slight. Consequently, this integrated audit evidence planning model caters for such situations in the interest of prudence and risk-averseness.

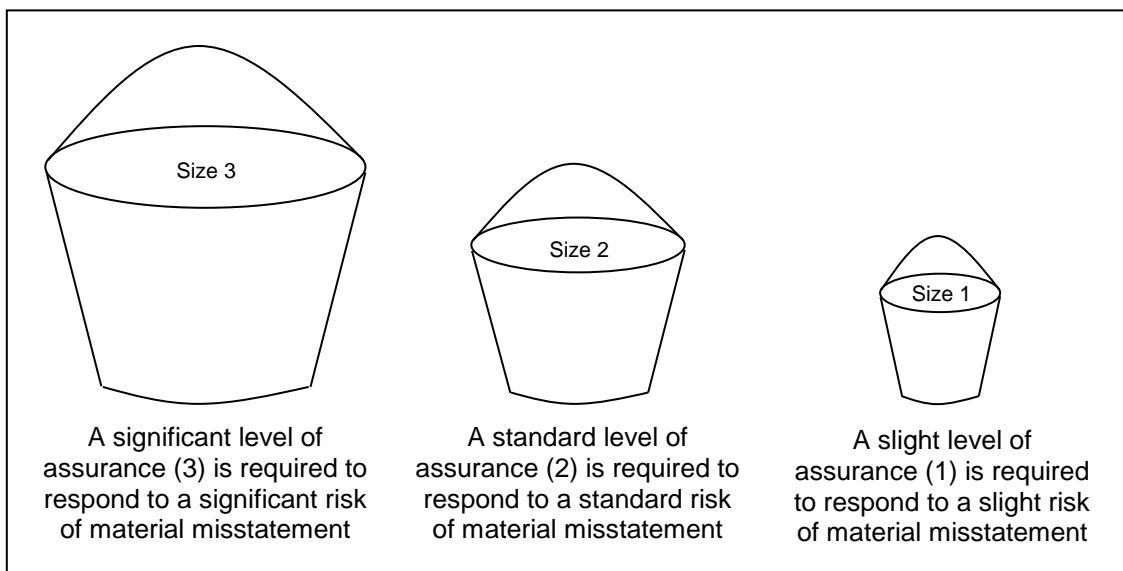
It can be deduced that by defining the integrated audit evidence planning model developed in this study in terms of levels of assurance rather than audit risk, the above discussion together with the summary thereof in table 5.2, demonstrate the link between the assessment of risks of material misstatement and the levels of assurance required from audit evidence to reduce audit risk to an acceptably low level. It captures and explains what is intuitively evident: the higher the risks of material misstatement, the greater the extent of audit evidence and the higher the level of assurance required in order to reduce audit risk to an acceptably low level. Establishing this inter-relationship between the evaluation of the risks of material misstatement and the level of assurance from the audit procedures that is required to reduce audit risk to an acceptably low level, focuses more attention and an increased extent of audit procedures on high risk areas. That is, there is a corollary between audit risk and assurance, the measurement of the first provides firm guidelines for and serves as input to the quantification of the second, the extent of audit evidence.

5.3.3 Application to the assurance bucket analogy

The assurance bucket analogy that was introduced in section 5.2.3, is expanded on to help understand and visualise how the auditor decides on the extent of testing required to reduce audit risk to an acceptably low level and to achieve the required level of assurance. The size of the assurance bucket in response to the risk assessment must be large enough to contain the extent of audit evidence to provide the level of assurance necessary to reduce audit risk

to an acceptably low level to support the audit opinion. The size of the assurance bucket will vary depending on the auditor's risk assessment. Obviously certain assertions will present bigger risks for some classes of transactions, account balances or disclosures than for others. This is illustrated in diagram 5.5.

Diagram 5.5: The size of the assurance bucket in response to the assessed risks of material misstatement



After the auditor has determined the risks associated with the assertions for a specific class of transactions, account balance or disclosure the size of the assurance bucket; i.e. the related level of assurance needed to reduce audit risk to an acceptably low level, can be determined and the assurance bucket can then be filled with audit evidence from the various types of procedures (tests of controls, substantive analytical procedures and tests of details).

5.3.4 The compensatory nature of audit evidence

As discussed in section 3.4.3, the audit risk model expresses audit risk (AR) as a function of the risk of material misstatement (RMM); the risk that the financial statements are materially misstated and detection risk (DR); the risk that the auditor will not detect a material misstatement that exists. It can be represented in a formula as $AR = f(RMM, DR)$ or $AR = RMM \times DR$. Expressing the audit risk model as $AR = RMM \times DR$ conveys the compensatory or inverse relationship between the assessed risk of material misstatement and detection risk. Thus, for a given level of audit risk, the acceptable level of detection risk bears an inverse relationship to the assessed risk of material misstatement and the greater the risk of material misstatement the auditor believes exists, the greater the nature, timing and extent of work that will have to be done by the auditor in order to reduce detection risk to a level that will result in the planned overall level of assurance. Therefore, the auditor varies the nature, timing and extent of audit procedures (tests of controls, substantive analytical procedures and tests of details) in response to his assessment of risk, which in turn informs the desired overall level of assurance.

The compensatory nature of the audit risk model also reveals a compensatory relationship between the types of audit procedures (tests of controls, substantive analytical procedures and tests of details). For a targeted overall level of assurance (or overall audit risk) for a particular class of transactions, account balance, disclosure or assertion, there exists a compensatory relationship between the extent and types of audit procedures, such that as more assurance is obtained from one type, less assurance is required from other types. (IAASB 2014i: ISA 330 par. A4; Arens, Elder and Beasley 2012: 411; Eilifsen et al 2010: 171; O'Reilly et al 1999: 318)

In the first instance, there is a trade-off between tests of controls and substantive procedures. The auditor's understanding of internal control obtained as part of the risk assessment procedures provides the basis for the auditor's

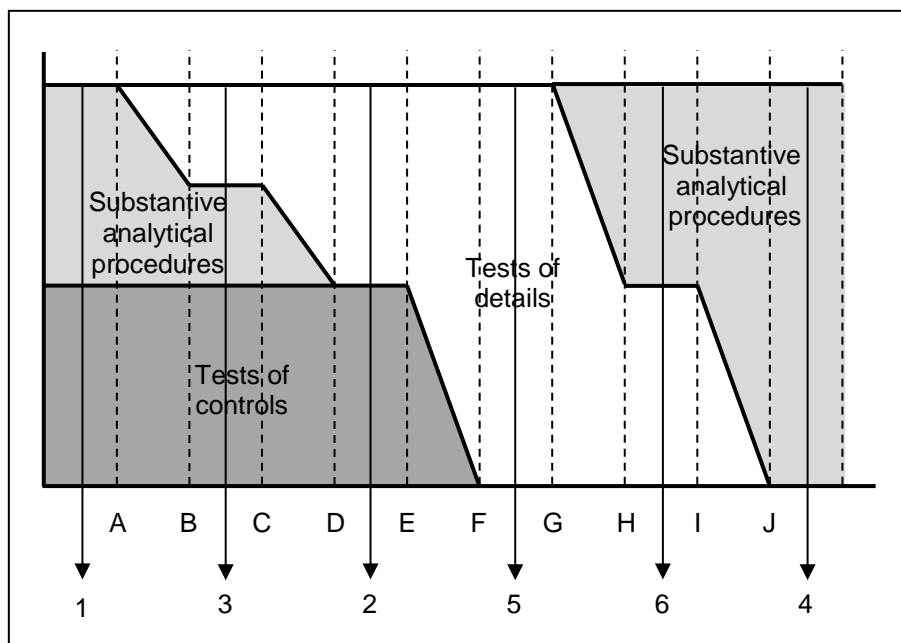
initial assessment of control risk (IAASB 2014i: ISA 330 par. 8). Where there is an expectation that some assurance can be obtained from tests of controls; i.e. the auditor assesses the risk of material misstatement as low, detection risk in the audit risk model is increased and the level of assurance needed from substantive procedures can therefore be reduced. Thus, translating the audit risk model into levels of assurance, it can be deduced that to hold constant the audit risk at the class of transactions, account balance, disclosure or assertion level, various different combinations of tests of controls and substantive procedures may be equally efficient and effective for each possible overall level of assurance. This is because when control assurance increases, the auditor decreases the level of assurance required from substantive procedures (IAASB 2014i: ISA 330 par. A46). Put differently, the higher the level of assurance derived from tests of controls the lower the level of assurance the auditor needs from substantive procedures to maintain overall audit risk or assurance at an acceptable level and vice versa.

Similarly to the trade-off between tests of controls and substantive procedures, there is an inverse relationship between the level of assurance that the auditor needs from tests of details and the assurance obtained from substantive analytical procedures, given a specific level of assurance desired from substantive procedures. The two types of substantive procedures are complementary, the assurance derived from one reduces proportionately the assurance the auditor needs from the other to reduce detection risk. For example, the greater the level of assurance derived from substantive analytical procedures, the bigger the decrease in the desired level of assurance needed from tests of details, assuming the overall audit risk and level of assurance from tests of controls remain constant. (Arens et al 2012: 404, 411)

Bringing the compensatory relationships between tests of controls and substantive procedures and between substantive analytical procedures and tests of details together, it can be deduced that the combination of assurance derived from tests of controls, substantive analytical procedures and tests of

details individually reduces audit risk to an acceptably low level to provide the targeted overall level of assurance on which the audit opinion is based. Thus, the extent of audit evidence required from one type of procedure varies directly with the risk that other types of procedures will fail to detect a material misstatement, thereby failing to provide the necessary overall level of assurance. Diagram 5.6 illustrates this compensatory relationship between tests of controls, substantive analytical procedures and tests of details.

Diagram 5.6: The compensatory relationship between tests of controls, substantive analytical procedures and tests of details



(Source: Adapted from Arens et al (2012: fig. 13.3), to distinguish substantive procedures between substantive analytical procedures and tests of details)

The dark grey area in diagram 5.6 reflects the level of assurance obtainable from tests of controls, the light grey area the level of assurance from substantive analytical procedures and the white area the level of assurance

from tests of details. The area to the left of point F represents a combined approach, while the area to the right of point F indicates a substantive approach.

At any point to the left of point E no further assurance is gained from testing controls as the auditor cannot obtain assurance from tests of controls alone, but must always perform some substantive procedures (IAASB 2014i: ISA 330 par. 18). No assurance is derived from tests of controls at any point to the right of point F because the auditor's risk assessment procedures suggest that the controls are not properly designed and/or implemented or not operating effectively, because tests of controls reveal that the controls are not operating effectively, or because it may be more efficient and effective to perform substantive procedures only. Between points E and F the level of assurance required from tests of details increases as the assurance gained from tests of controls reduces. In the same way, the areas between points A and B and points C and D illustrate the increase in the level of assurance from tests of details as the level of assurance from substantive analytical procedures decreases, whereas the areas between points G and H and points I and J illustrate the decrease in the level of assurance from tests of details as the level of assurance from substantive analytical procedures increases.

Points 1, 2, 3, 4, 5 and 6 depict the six audit evidence gathering approaches summarised in table 5.1. These points clearly illustrate the different combinations of tests of controls, substantive analytical procedures and tests of details, the varying extents of such procedures, together with the inter-relationship between and compensatory nature of these procedures.

Diagram 5.6 also demonstrates how a small change in the level of assurance gained from one type of procedure, such as the level of assurance obtained from substantive analytical procedures, has a significant effect on the desired levels of assurance needed from other types of procedures. This emphasises the need to keep efficiency and effectiveness considerations in mind when

planning the nature and extent of further audit procedures. The most appropriate points to select between points E and F will be based on the relative efficiency and effectiveness of tests of controls vs. substantive procedures, with the choice between points 1, 2 and 3 and between points 4, 5 and 6 being influenced by the further consideration of the efficiency and effectiveness of substantive analytical procedures vs. tests of details. Various combinations of tests of controls, substantive analytical procedures and/or tests of details may restrict audit risk to the same desired level, but some combinations will be more efficient and effective than others in allowing the auditor to obtain sufficient appropriate audit evidence on which to base the audit opinion.

5.3.5 Relating overall levels of assurance to levels of assurance from different types of audit evidence

The auditor is required to design and perform further audit procedures that are based on and respond to the level of assessed risk of material misstatement at the class of transactions, account balance, disclosure and assertion level (IAASB 2014i: ISA 330 par. 6). The auditor obtains an understanding of the overall levels of assessed risks of material misstatement for particular classes of transactions, account balances, disclosures and assertions by obtaining an understanding of the entity and its environment, including the entity's internal control, through the performance of risk assessment procedures. The auditor has three types of further audit procedures at his disposal in order to respond to the overall levels of assessed risks at class of transactions, account balance, disclosure and assertion level; i.e. to obtain the desired overall levels of assurance: tests of controls, substantive analytical procedures and tests of details.

Having established an acceptable overall level of audit risk or a desired overall level of assurance per class of transactions, account balance, disclosure or assertion, the next decision requiring judgement from the auditor is how to

relate the overall level of assurance to the extent of assurance required from each type of procedure (tests of controls, substantive analytical procedures and tests of details), as well as how to link the level of assurance obtained from one type of procedure to the extent of audit evidence required from other types of procedures. Although the audit risk model provides the auditor with some direction in making these judgements, there is a lack of authoritative guidelines in the ISAs on how to quantitatively relate the levels of assurance from the various types of procedures to each other and to the overall levels of audit risk or assurance. An objective and structured model is needed within which these judgements can be applied and the objective of this study is to develop such a model.

Building on the three distinct numerical overall levels of assurance (slight (= 1), standard (= 2) and significant (= 3)) derived in section 5.3.2, together with the compensatory inter-relationship between types of audit procedures discussed in the previous section (section 5.3.4) and taking into consideration the various combinations of tests of controls, substantive analytical procedures and tests of details summarised in the audit evidence mix matrix in table 5.1, this study deduces a mathematical model that associates each of the three distinct overall levels of assurance with several possible numerical combinations of different allowed levels of assurance from tests of controls, substantive analytical procedures and tests of details. Therefore, for each distinct overall level of assurance and for all possible combinations of types of procedures (tests of controls, substantive analytical procedures and tests of details), the level of assurance required from each type of procedure is expressed numerically. Put differently, the integrated audit evidence planning model provides, for each distinct overall level of assurance, several combinations of assurance at specific levels from tests of controls, substantive analytical procedures and tests of details. This is useful in the thought process and judgements made by the auditor in planning the extent of tests of controls, substantive analytical

procedures and tests of details necessary to obtain the required overall level of assurance and to reduce audit risk to an acceptably low level.

This is achieved by updating and enhancing the audit evidence mix matrix in table 5.1 with specific numerical values for the three distinct overall levels of assurance (slight (= 1), standard (= 2) and significant (= 3)). The values in the table are derived such that the sum of the values for levels of assurance obtained from tests of controls, substantive analytical procedures and tests of details, for all permissible combinations of types of procedures, remains constant. That is, the integrated audit evidence planning model provides for three constant overall levels of assurance through different combinations of distinct levels of assurance from tests of controls, substantive analytical procedures and tests of details.

Statistical sampling applications in the natural and social sciences often use a reliability or level of assurance of 90% to 99% in their sample design (Tucker 1989: 34). In the auditing environment this might be interpreted by auditors that in order to achieve a certain overall level of assurance, all individual procedures (tests of controls, substantive analytical procedures and tests of details) must be performed to the same level of assurance as the selected overall level of assurance. For example, if the auditor wishes to achieve an overall level of assurance of 95%; i.e. a risk of 5%, he might incorrectly assume that all audit procedures must be performed at the 5% risk level. In this situation, if both tests of controls and tests of details are performed at the 5% risk level, the following would result, based on the audit risk model:

$$AR = RMM \times DR$$

$$0.0025 = 0.05 \times 0.05$$

An audit risk level of 0.25% (or an overall level of assurance of 99.75%) is achieved rather than 5%. It is important to emphasise this distinction and the related consequences for determining the levels of assurance for the various

individual audit procedures, as the auditor normally has multiple inter-related types of audit evidence on which to base the audit opinion. Consequently, it can be deduced that within the framework of the audit risk model, the overall level of assurance is a function of accumulating the levels of assurance from the underlying audit procedures (tests of controls, substantive analytical procedures and tests of details), which individually may have lower levels of assurance than the overall level of assurance.

Diagram 5.2 illustrates a simplified network of the different audit evidence gathering options available to the auditor or the different approaches that the auditor can employ to obtain sufficient appropriate audit evidence in support of the audit opinion. Two of the audit evidence gathering approaches available to the auditor are to obtain the required overall level of assurance from tests of details or substantive analytical procedures alone, subject to two restrictions: (1) substantive analytical procedures alone are not sufficient where a significant level of assurance is required (IAASB 2014i: ISA 330 par. 21) and (2) the desired level of audit evidence for material classes of transactions, account balances and disclosures cannot be obtained solely from tests of controls (IAASB 2014i: ISA 330 par. 18).

Consequently, in instances where a slight overall level of assurance (= 1) is required, the auditor can achieve this by performing tests of details to a level of assurance equal to 1. In the same way, the auditor can obtain standard (= 2) and significant (= 3) overall levels of assurance by performing tests of details to levels of assurance equal to 2 and 3, respectively. Therefore, because the auditor should be able to obtain the required audit evidence entirely from tests of details at all three of the overall levels of assurance, it should be possible to obtain three separate levels of assurance from tests of details; i.e. levels of assurance of 1, 2 and 3. Similarly, since the auditor can gain the required audit evidence solely from substantive analytical procedures for slight (= 1) and standard (= 2) overall levels of assurance, two separate levels of assurance from substantive analytical procedures; i.e. levels of assurance of 1 and 2, can

be deduced. The auditor cannot obtain a level 3 assurance from substantive analytical procedures alone, as substantive analytical procedures alone are not sufficient where a significant level of assurance (= 3) is required.

With reference to tests of controls, they must be performed in combination with substantive procedures, tests of details and/or substantive analytical procedures. In instances where a significant overall level of assurance (= 3) is required, the auditor can achieve this by performing tests of controls in combination with substantive procedures (tests of details and/or substantive analytical procedures) at levels of assurance of either 1 or 2, which corresponds to levels of assurance of 2 and 1, respectively, being required from substantive procedures. Likewise, in order to obtain a standard overall level of assurance (= 2), the auditor will need a level 1 assurance from tests of controls, as substantive procedures will provide a level of assurance equal to 1.

Thus, by applying the above thinking to the various possible audit evidence gathering combinations, the quantified audit evidence mix matrix depicted in table 5.3 can be deduced for the three distinct overall levels of assurance.

Table 5.3: Quantified audit evidence mix matrix

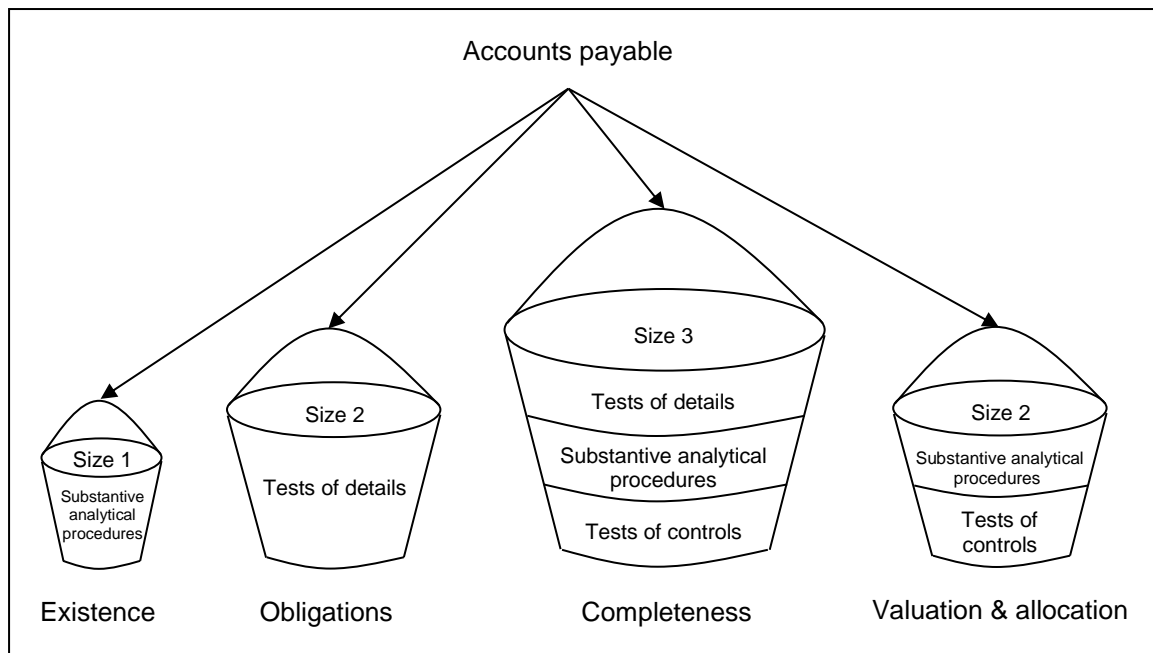
Types of procedures	Significant level of assurance = 3								Standard level of assurance = 2					Slight level of assurance = 1	
	Combined approaches					Substantive approaches			Combined approaches		Substantive approaches			Substantive approaches	
Tests of controls	2	2	1	1	1	0	0	0	1	1	0	0	0	0	0
Substantive analytical procedures	1	0	2	1	0	2	1	0	1	0	2	1	0	1	0
Tests of details	0	1	0	1	2	1	2	3	0	1	0	1	2	0	1
Overall level of assurance	3	3	3	3	3	3	3	3	2	2	2	2	2	1	1
Level of assurance (%)	95%								86%					63%	
Level of audit risk (%)	5%								14%					37%	

The above mathematical audit evidence mix matrix forms the crux of this study. In the first instance, it quantifies the distinct overall levels of assurance. Secondly, it quantitatively relates the overall levels of assurance to the extent of assurance obtainable from the various possible audit evidence gathering combinations. Lastly, the matrix numerically links the level of assurance obtained from one type of procedure to the levels of assurance required from other types of procedures. This quantification of the levels of assurance directly influences the extent of audit evidence. The mathematical audit evidence mix matrix further quantitatively links the integration of the risk assessment with the level of assurance required from performing audit procedures that will result in sufficient appropriate audit evidence on which to base the audit opinion.

5.3.6 Application to the assurance bucket analogy

The assurance bucket analogy, introduced in section 5.2.3 and expanded on in section 5.3.3, is further elaborated on to demonstrate the application of the quantified audit evidence mix matrix in table 5.3 by means of an example for accounts payable. Each assertion requires a bucket and the bucket size may differ from assertion to assertion based on the assessed risks of material misstatement. For the purpose of the accounts payable example it is assumed that a significant risk has been identified in respect of the completeness assertion and consequently the largest bucket is for the completeness assertion. The example also illustrates that for some assertions the assurance bucket may be filled entirely with tests of details (e.g. rights) and that other assertions may not require any tests of details (e.g. existence), but only substantive analytical procedures. Again, these are subjective matters that require considerable professional judgement. This is illustrated in diagram 5.7.

Diagram 5.7: The assurance bucket analogy and quantified levels of assurance

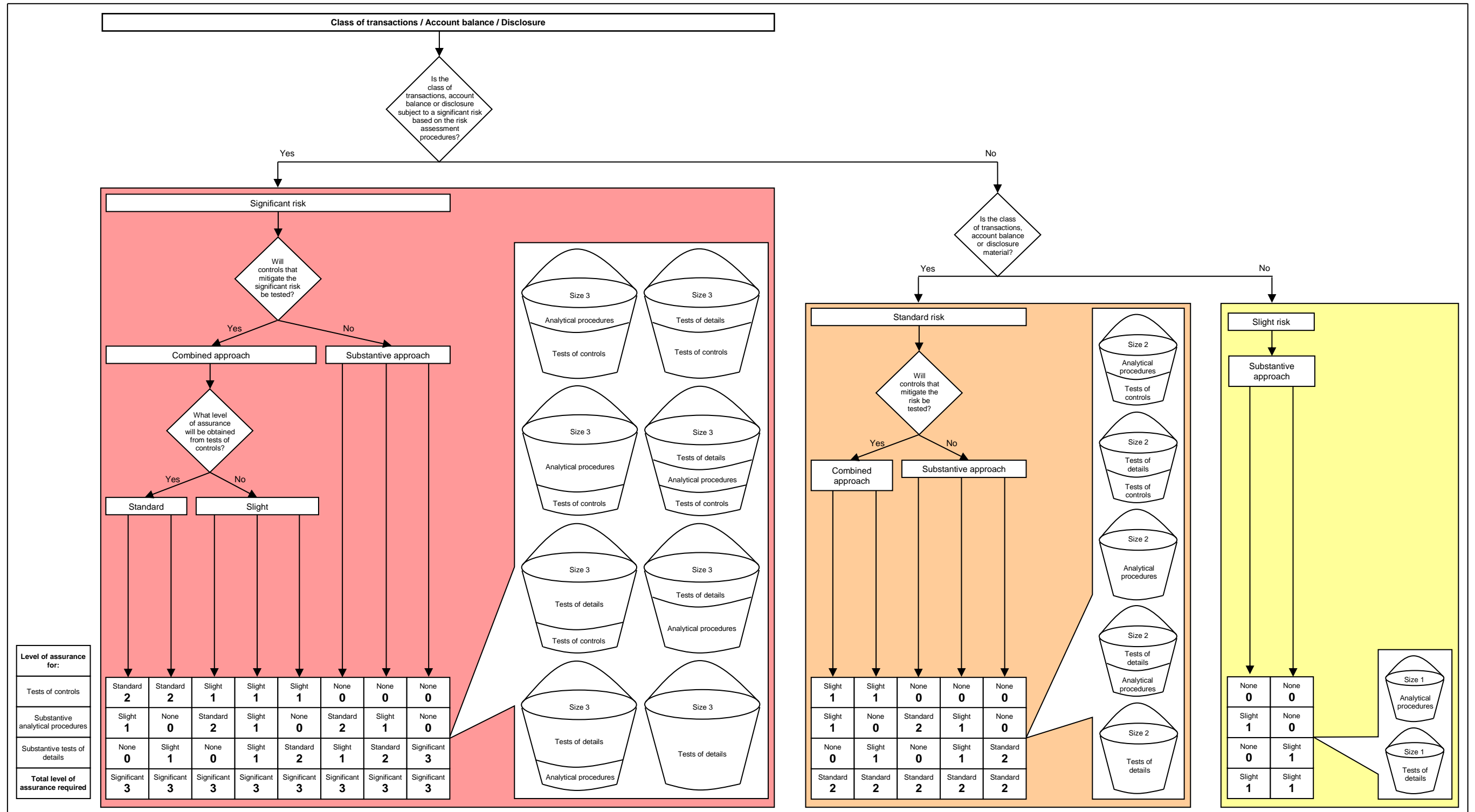


5.4 THE INTEGRATED AUDIT EVIDENCE PLANNING MODEL: LEVELS OF ASSURANCE

Diagram 5.2 illustrated a simplified network of the different audit evidence gathering options available to the auditor or the different approaches that the auditor can employ to obtain sufficient appropriate audit evidence in support of the audit opinion. By following all the alternative audit evidence gathering decision routes through diagram 5.2 the various combinations of types of audit procedures that can be employed to gather sufficient appropriate audit evidence were derived. The assurance bucket analogy was introduced in diagram 5.3 to visualise the audit evidence mix matrix. Thereafter the quantification of the audit evidence mix matrix, which lies at the heart of this study, was deduced and resulted in the quantification of the desired overall levels of assurance, quantifying the inter-relationship between the overall levels of assurance and the extent of assurance obtainable from the various possible types of audit evidence gathering combinations and numerically linking the level of assurance obtained from one type of procedure to the extent of audit evidence required from other types of procedures.

The next step in developing the integrated audit evidence planning model is to integrate the audit evidence gathering decision diagram, the quantified levels of assurance in the audit evidence mix matrix and the assurance bucket analogy. This is done schematically in diagram 5.8. The auditor should use the integrated audit evidence planning model depicted in the diagram to direct the audit decisions and judgements on the appropriate audit approach to follow in obtaining the level of assurance that will provide sufficient appropriate audit evidence to support the audit opinion.

Diagram 5.8: The integrated audit evidence planning model: Levels of assurance



5.5 THE RELATIONSHIP BETWEEN THE INTEGRATED AUDIT EVIDENCE PLANNING MODEL AND THE EXTENT OF FURTHER AUDIT PROCEDURES

In conceptual terms, the integrated audit evidence planning model can be viewed as deriving overall levels of assurance from different types and combinations of audit evidence, consistent with the assessed risks of material misstatement. The overall levels of assurance and relative assurance drawn from the different types and combinations of audit procedures are expressed in quantitative terms. The mathematical integrated audit evidence planning model associates each of three distinct overall levels of assurance with several possible combinations of tests of controls, substantive analytical procedures and tests of details, relating each type of procedure to various distinct levels of assurance that contribute towards the overall levels of assurance. Therefore, for each overall level of assurance and for all possible combinations of types of procedures (tests of controls, substantive analytical procedures and tests of details), the model expresses the levels of assurance required from each type of procedure numerically. Thus, the integrated audit evidence planning model uses the cumulative nature of audit evidence and the compensatory inter-relationship between the various types of procedures to aggregate the distinct levels of assurance from tests of controls, substantive analytical procedures and tests of details to obtain the desired overall levels of assurance.

The remained of this chapter considers the impact of the integrated audit evidence planning model on the extent of audit evidence derived from further audit procedures. The extent of audit evidence required from tests of controls, substantive analytical procedures and tests of details is directly influenced by the auditor's assessment of the risks of material misstatement and by the desired overall levels of assurance (IAASB 2014i: ISA 330 par. 7). As such, it is necessary to quantitatively link the distinct levels of assurance comprising the integrated audit evidence planning model to the quantification of the extent of tests of controls, substantive analytical procedures and tests of details.

The linkage provided by the integrated audit evidence planning model between each allowed overall level of assurance and several combinations of distinct levels of assurance from tests of controls, substantive analytical procedures and tests of details, forms the starting point in the thought process and judgements made in quantifying the impact on the extent of these types of procedures that is necessary to obtain the required overall levels of assurance. Thus, the integrated audit evidence planning model is used quantitatively to indicate the extent of tests of controls, substantive analytical procedures and tests of details in an objective, structured and logical manner that quantitatively relates to and integrates with the risk assessment and overall levels of assurance.

5.5.1 Distinct levels of assurance for further audit procedures

The auditor has three types of further audit procedures at his disposal to obtain sufficient appropriate audit evidence to respond to the assessed risks of material misstatement: tests of controls, substantive analytical procedures and tests of details. Table 5.3 illustrates the different audit evidence gathering combinations of tests of controls, substantive analytical procedures and tests of details that the auditor can employ to obtain sufficient appropriate audit evidence in support of the audit opinion.

Applying the three distinct numerical overall levels of assurance of a slight level of assurance (= 1), a standard level of assurance (= 2) and a significant level of assurance (= 3) that are allowed under the integrated audit evidence planning model to the different audit evidence gathering combinations of tests of controls, substantive analytical procedures and tests of details, the distinct levels of assurance that were derived for each of the three types of further audit procedures in section 5.3.5 can be summarised as follows: Levels of assurance of slight (= 1) and standard (= 2) are permissible for both tests of controls and substantive analytical procedures, with all three levels (slight (= 1), standard (= 2) and significant (= 3)) being allowed for tests of details. Table 5.4

summarises the distinct levels of assurance that are permissible for the different types of further audit procedures (tests of controls, substantive analytical procedures and tests of details) under the integrated audit evidence planning model. The table also indicates the corresponding percentages audit risk of expressing an inappropriate audit opinion and the correlating levels of assurance that the financial statements are free from material misstatement.

Table 5.4: Distinct levels of assurance for types of further audit procedures

Types of procedures	Distinct levels of assurance		
	1	2	3
Substantive analytical procedures	1	2	-
Tests of controls	1	2	-
Tests of details	1	2	3
Level of assurance (%)	63%	86%	95%
Level of audit risk (%)	37%	14%	5%

The above distinct levels of assurance for substantive analytical procedures, tests of controls and tests of details, as contained in the integrated audit evidence planning model, are quantitatively linked to the extent of such further audit procedures in sections 5.6 and 5.7, respectively.

5.5.2 The extent of substantive analytical procedures vs. tests of controls and tests of details

The three types of further audit procedures that the auditor has at his disposal to obtain sufficient appropriate audit evidence differ in focus. Substantive analytical procedures involve the comparison of recorded financial statement

amounts with expectations developed by the auditor through the analysis of plausible relationships among both financial and non-financial data (IAASB 2014n: ISA 520 par. 4). Substantive analytical procedures examine whether a recorded financial statement amount is subject to material misstatement without considering the details of the individual transactions that comprise the recorded amount (Knechel 1988: 74). Thus, substantive analytical procedures are concerned with the reasonableness or the precision of the expectation developed by the auditor based on known relationships (McDaniel and Simmons 2007: 5; Glover et al 2005: 200).

In contrast, tests of controls and tests of details focus on the individual control activities and transactions that result in the recorded financial statement amounts (Kinney 1979: 456). When designing tests of controls and tests of details, the auditor determines means of selecting items for testing that are effective in obtaining sufficient appropriate audit evidence to enable the auditor to draw reasonable conclusions on which to base the audit opinion. Depending on the particular circumstances, the means of selecting items for testing that are available to the auditor include 100% examination, selecting specific items, sampling or a combination of these means. (IAASB 2014k: ISA 500 par. A52) However, in designing tests of controls and tests of details, ISA 330 par. A47 (IAASB 2014i) states that the means of selecting items for testing and the extent of testing are generally thought of in terms of sampling and sample size, which is also the approach adopted in this study.

The justification for making use of sampling when performing tests of controls and tests of details vs. selecting all items or selecting specific items for testing, as well as for applying expectations that are sufficiently precise instead of absolutely precise when performing substantive analytical procedures, relates back to the auditor's overall objective in conducting an audit of the financial statements. That is, to obtain a reasonable level of assurance rather than absolute certainty that the financial statements are free from material misstatement. (AICPA 2008: par. 2.15)

The sufficiency of audit procedures or the extent of audit evidence judged necessary to enable the auditor to obtain reasonable assurance that the financial statements are free from material misstatement, is determined based on considerations of materiality, assessed risks of material misstatement and the levels of assurance required. Generally, the extent of audit procedures increases as the risk of material misstatement and the level of assurance increases; i.e. the auditor must obtain more persuasive audit evidence the higher the auditor's assessment of risk (IAASB 2014i: ISA 330 par. A15). This may typically be achieved by increasing sample sizes for tests of controls and tests of details and by performing substantive analytical procedures at more precise levels (IAASB 2014n: ISA 520 par. A16; Glover et al 2005: 201; Hitzig 2004: 33).

The remained of this chapter completes the integrated audit evidence planning model by linking the model to the quantification of substantive analytical procedure precision intervals and the determination of sample sizes for tests of controls and tests of details.

5.6 SUBSTANTIVE ANALYTICAL PROCEDURES

Analytical procedures are employed at various stages of the audit. (Refer to section 3.5.2.1 of chapter 3.) The ISAs require the use of analytical procedures during planning as risk assessment procedures (IAASB 2014g: ISA 315 par. 6(c)) and at the finalisation of the audit when forming an overall conclusion on the financial statements (IAASB 2014n: ISA 520 par. 1). In addition to using analytical procedures during the risk assessment and conclusion phases of the audit, analytical procedures may also be employed as substantive procedures to obtain sufficient appropriate audit evidence regarding the fair presentation of classes of transactions, account balances and disclosures (IAASB 2014n: ISA 520 par. 1).

5.6.1 The relationship between the extent of substantive analytical procedures, levels of assurance and precision

Substantive analytical procedures are reasonableness tests of classes of transactions, account balances and disclosures in the financial statements and involve the evaluation of financial statement information through the analysis of plausible relationships among both financial and non-financial data (IAASB 2014n: ISA 520 par. 4, A2). Thus, substantive analytical procedures are concerned with the comparison of recorded amounts to expected amounts developed by the auditor. The comparison assists the auditor in identifying significant differences for investigation of possible material misstatements in the recorded amounts and supports the auditor's decisions regarding the reasonableness of the amounts shown in the financial statements (IAASB 2014n: ISA 520 par. 5).

However, in performing substantive analytical procedures, the auditor is interested not only in the development of an expected amount based on plausible relationships and the investigation of significant differences between the expected amount and the recorded amount, but also whether the expectation is sufficiently precise to identify a material misstatement at the desired level of assurance (IAASB 2014n: ISA 520 par. 5(c)). As such, ISA 500.5(d) (IAASB 2014k) specifically requires the auditor to determine the amount of any difference between the recorded amount and the expected amount that is considered significant and that would not be acceptable without further investigation.

When analytical procedures are performed to provide substantive audit evidence they must be designed to provide the required level of assurance. Therefore, in performing substantive analytical procedures, the auditor must give detailed attention to underlying relationships and develop a precise and independent expectation of the recorded financial statement amount. The level of assurance that can be derived from the procedure is affected by the quality of

the expectation that is developed; i.e. the closeness of the expectation to the recorded amount (IAASB 2014n: ISA 520 par. A16). The closeness of the expected amount to the recorded amount is a measure of the precision of the analytical procedure and the amount of the difference between the recorded amount and the expected amount is referred to as the precision interval (Glover et al 2005: 200).

Precision is an important factor in determining the level of assurance that a particular analytical procedure provides. ISA 330.7(b) (IAASB 2014i) requires the auditor to obtain more persuasive audit evidence the higher the assessed risks of material misstatement. Therefore, as the assessed risks of material misstatement increase, the amount of the difference between the actual amount and the expected amount that is considered acceptable without investigation decreases in order to achieve the desired level of assurance (IAASB 2014n: ISA 520 par. A17). Precision is the auditor's measure of the potential effectiveness of an analytical procedure and therefore of the degree of reliance that can be placed on the procedure and the level of assurance that can be derived from it (Blocher and Patterson 1996: 54). As a result, the level of assurance provided by substantive analytical procedures is determined by the precision of the expectation. The higher the precision; i.e. the narrower the range of differences between the auditor's expectation and the recorded amount, the more effective the procedure will be at identifying potential misstatements in the recorded financial statement amount and the greater the level of assurance provided by the procedure (Hitzig 2004: 33; Kinney and McDaniel 1996: 53; Scott and Wallace 1994: 34). Therefore, the greater the required level of assurance, the more precise the expectation must be and a high precision justifies a higher level of assurance from substantive analytical procedures.

ISA 520.5(d) (IAASB 2014n) requires the auditor to determine the precision or closeness between the expected amount and the recorded amount that is acceptable without further investigation. Forming a precise expectation is an

important part of performing substantive analytical procedures. The more precise the expectation; i.e. the closer the auditor's expectation is to the recorded amount, the more effective the analytical procedure will be at identifying potential misstatements (Hitzig 2004: 33). However, when considering precision as a measure of the closeness of the expectation, the question is: *how close is close enough? or when is the difference between the recorded amount and the expected amount significant enough to be indicative that the recorded amount may be materiality misstated?*

Related to the question regarding the closeness of the expected amount to the recorded amount, is the question of: *how much assurance can be obtained from substantive analytical procedures?* As previously stated, the level of assurance provided by substantive analytical procedures is determined by the precision of the expectation and the auditor requires more persuasive audit evidence the higher the required level of assurance (IAASB 2014i: ISA 330 par. 7(b)). Accordingly, as the required level of assurance increases the amount of difference between the expectation and the recorded amount considered acceptable without investigation decreases in order to achieve the desired level of assurance (IAASB 2014n: ISA 520 par. A16). Thus, the greater the required level of assurance, the narrower the range of differences; i.e. the narrower the precision interval and the more precise the expectation must be. This implies that different levels of assurance require different precision intervals, with higher levels of assurance corresponding to narrower precision intervals.

Although ISA 520.1 (IAASB 2014n) supports the use of analytical procedures as substantive procedures and requires both the development of an expectation that is sufficiently precise to identify material misstatements and the determination of a difference between the expectation and the recorded amount that is acceptable without further investigation, it does not provide guidance on how auditors should incorporate precision into their judgements nor does it provide guidance on determining the acceptable range of differences between the expectation and recorded amount that is consistent with the desired level of

assurance. In addition, ISA 520 (IAASB 2014n) does not specify the extent of substantive analytical procedures required nor does it set a limit on the extent to which substantive analytical procedures can be applied. There is little guidance in the standard for the auditor on the proper application of substantive analytical procedures, and the related requirements regarding precision and precision intervals, in order for the auditor to properly understand the relationship between analytical procedure precision, the extent of audit evidence and the required level of assurance.

5.6.2 Deriving precision intervals

When responding to the earlier questions related to precision of *how close is close enough?* or *when is the difference between the recorded amount and the expected amount significant?*, auditors use various judgements and the determination of the precision interval often remains a subjective judgemental assessment (Samaha and Hegazy 2010: 888; Koskivaara 2007: 337; Biggs et al 1999: 43; Hirst and Koonce 1996: 474; Kinney and McDaniel 1996: 53; Colbert 1994: 3, 4). However, without an objective and explicit knowledge-based precision interval against which to assess the difference between the recorded amount and the expected amount, the analytical procedure may potentially be subject to bias. If the auditor fails to consider precision in the normal course of evaluating the strength of audit evidence provided by substantive analytical procedures he may inappropriately rely on a weak procedure that in fact yields no assurance. Consequently, a decision aid or model that quantifies precision intervals and assists the auditor in deciding whether the difference between the recorded amount and the expected amount is significant, is useful and important when substantive analytical procedures are relied on to provide audit assurance.

In addition to the use of subjective judgement, some examples of auditors using predetermined decision models to determine if the difference between the

expected amount and the recorded amount warrants investigation, can be found in literature. The decision model may, for example, be established relative to materiality; i.e. that differences above a specified percentage of materiality are to be investigated (Kinney and McDaniel 1996: 53; Wilson and Colbert 1989: 80, 83). To illustrate, if materiality is R8 000 and the difference between the estimated salary expenditure amount and the recorded amount is R5 000, the judgement may be made that the R5 000 difference warrants further investigation based on a decision model that discrepancies of 50% of materiality or more ($R4\ 000 = 0.5 \times R8\ 000$) are to be investigated. Alternatively, the decision model may establish that differences above a specified percentage of the amount recorded in the financial statements are to be investigated; 5% or 10% are typically used (Kinney and McDaniel 1996: 53; Wilson and Colbert 1989: 80, 83). To illustrate, if the estimated salary expenditure amount is R60 000 and the recorded amount is R55 000, the judgement may be made that the difference of 9.1% ($R5\ 000 / R55\ 000$) does not warrant further investigation based on a decision model that discrepancies of 10% or more are to be investigated.

This determination of the precision interval as a percentage of the recorded amount may or may not bear an appropriate relationship to materiality. It may be speculated that a decision model that is oriented and related to materiality may provide the auditor with more efficient decisions. (Wilson and Colbert 1989: 83) This is supported by both Stringer (1975: 7) and McDaniel and Simmons (2007: 2) who concluded that the precision interval for determining differences between expected and recorded amounts to be investigated should be a function of the auditor's decisions concerning materiality and levels of assurance. In fact, ISA 520.A16 (IAASB 2014n) mandates that the auditor's determination of the amount of the difference from the expectation that can be accepted without further investigation must be influenced by materiality and must be consistent with the desired level of assurance. Consequently, in line with generally accepted auditing practice and global audit guidance and in

compliance with the requirements of ISA 520 (IAASB 2014n), this study adopts the approach of establishing different precision intervals for different levels of assurance and sets the different precision intervals with reference to a percentage of materiality.

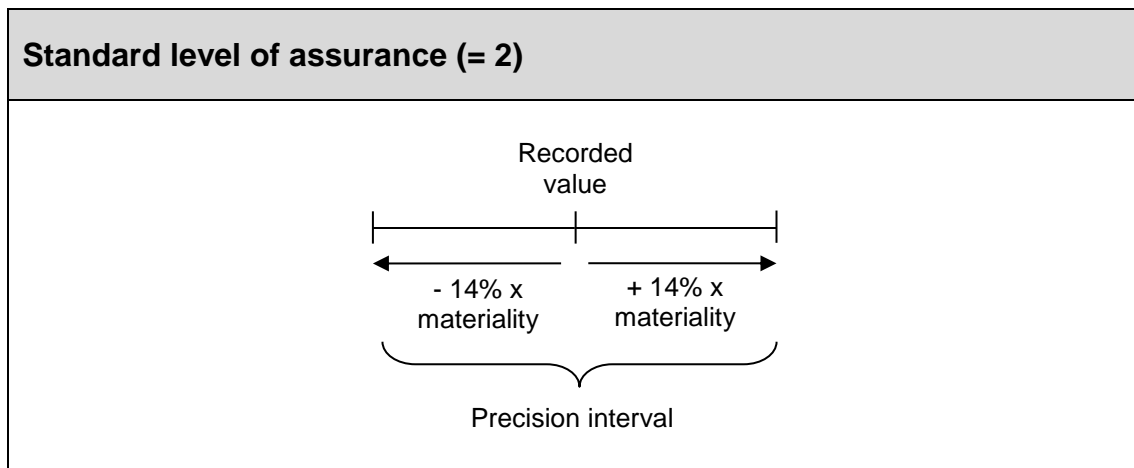
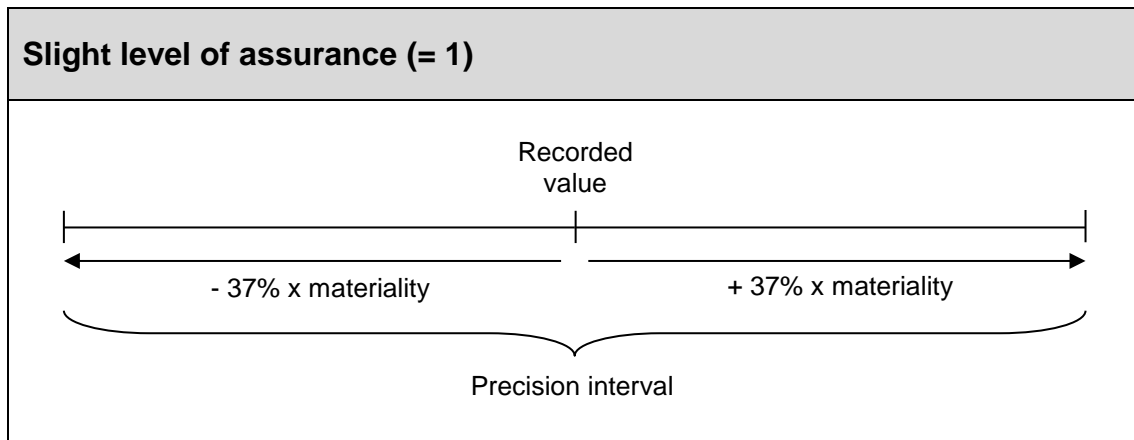
Based on the integrated audit evidence planning model, table 5.4 summarises the two levels of assurance (slight (= 1) and standard (= 2)) that are permissible for substantive analytical procedures, together with the corresponding risk percentages of expressing an inappropriate audit opinion; i.e. 37% and 14%, respectively. With reference to the decision models found in literature (McDaniel and Simmons 2007: 2; Kinney and McDaniel 1996: 53; Wilson and Colbert 1989: 80, 83; Stringer 1975: 7), it is not unreasonable to apply these percentages (i.e. 37% and 14%) to materiality in order to define precision intervals for the slight (= 1) and standard (= 2) levels of assurance that are permissible for substantive analytical procedures in terms of the integrated audit evidence planning model developed in this study.

Thus, the two distinct levels of assurance for substantive analytical procedures are quantitatively related to the extent of such procedures by means of the following two corresponding precision intervals:

- Slight level of assurance (= 1): Precision interval = Recorded financial statement amount \pm 37% x materiality
- Standard level of assurance (= 2): Precision interval = Recorded financial statement amount \pm 14% x materiality

The above can schematically be illustrated in diagram 5.9.

Diagram 5.9: Precision intervals for substantive analytical procedures



From diagram 5.9 it is evident that the range of differences that does not require further investigation; i.e. the precision interval, is narrower for the higher standard level of assurance (= 2), than for the lower slight level of assurance (= 1). This is in line with the conclusion of the earlier discussion in section 5.6.1 that the greater the required level of assurance, the higher the precision and the narrower the range of differences must be.

Consequently, in order for the auditor to obtain a higher standard level of assurance (= 2) from substantive analytical procedures, compared to a lower slight level of assurance (= 1), the auditor is required to produce a more exact

expectation; i.e. the expected amount must agree more closely with the recorded financial statement amount, than when a lower slight level of assurance (= 1) is needed. This may involve more rigorous and thoughtful analysis of the underlying relationships, the use of multiple and more detailed data elements and input conditions, thorough incorporation of the auditor's knowledge of the entity, as well as a number of iterations of investigating differences in order to develop a more independent, accurate and precise expectation (Biggs et al 1999: 42; Kinney and McDaniel 1996: 53). The potential effectiveness of the substantive analytical procedure and hence the level of assurance that can be placed on the procedure, is affected by the quality of the expectation that is developed. The more precise the expectation the more effective the analytical procedure will be at identifying potential misstatements and therefore a higher level of assurance can be derived.

The above clearly demonstrates the relationship between the two different levels of assurance (slight (= 1) and standard (= 2)), the corresponding precision intervals of 37% and 14% of materiality, respectively, and the variation of the extent of audit evidence that can be obtained from substantive analytical procedures in terms of the two different levels of assurance permissible under the integrated audit evidence planning model.

5.6.3 Application of the precision intervals

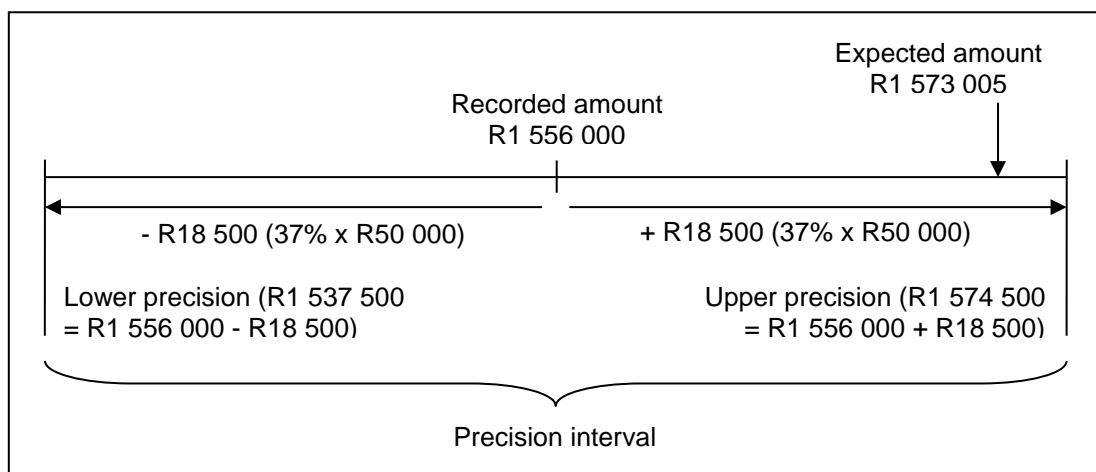
The increased extent of audit evidence that is needed at higher required levels of assurance and the effecting therefore through the narrower precision interval set for higher levels of assurance under the integrated audit evidence planning model is illustrated in the following example.

Suppose that the auditor is auditing the personnel costs class of transactions with actual values of R1 556 000 and R1 491 000 for the current and prior years, respectively. Materiality equates to R50 000 and all employees received

an 11% salary increase six months into the financial year. Assume further that a standard overall level of assurance (= 2) is required and that a slight level of assurance (=1) will be derived from tests of controls. In addition, the auditor decides to obtain the remaining required assurance by conducting substantive analytical procedures.

The auditor determines an expected amount for personnel costs of R1 573 005 (R1 491 000 + (R1 491 000 x 6/12 x 11%)) based on the actual prior year amount (R1 491 000) adjusted for the 11% salary increase. The difference between the actual personnel costs amount of R1 556 000 for the current year and the R1 573 005 expected amount developed by the auditor, equates to R17 005 (R1 573 005 - R1 556 000). The precision interval at the slight level of assurance (= 1) required from substantive analytical procedures is then determined as the actual personnel costs amount \pm 37% x materiality therefore R1 556 000 \pm R18 500 (37% x R50 000). This is schematically illustrated in diagram 5.10.

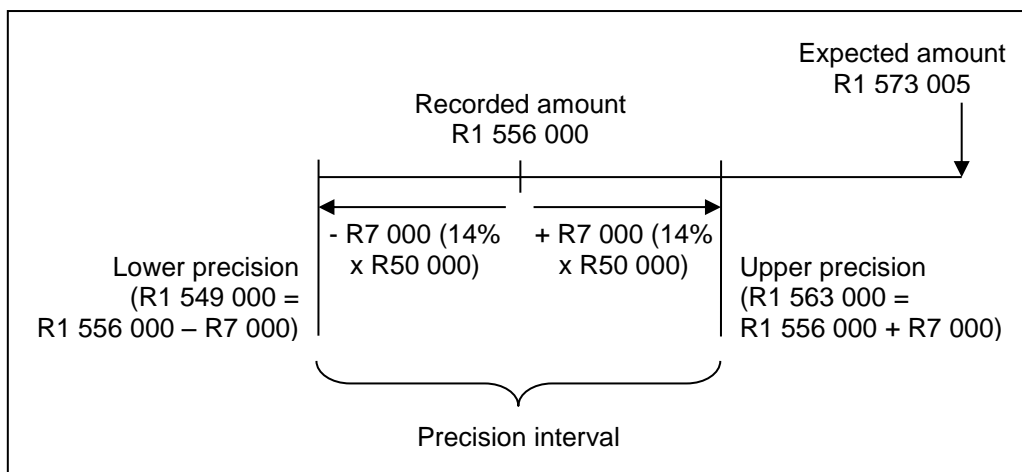
Diagram 5.10: Application of the precision interval for a slight level of assurance (= 1)



From diagram 5.10 it is clear that the expected personnel costs amount of R1 573 005 developed by the auditor falls within the precision interval of R1 537 500 to R1 574 500. That is, the difference of R17 005 between the actual personnel costs amount and the expected amount is less than the precision amount of R18 500. Consequently, the auditor can derive a slight level of assurance (= 1) from the substantive analytical procedures and can accept the actual personnel costs amount of R1 556 000 as fairly stated without further investigation.

However, let's assume that no assurance can be derived from tests of controls and that the auditor therefore needs to obtain all of the required standard overall level of assurance (= 2) from substantive analytical procedures. In this situation the precision interval at the standard level of assurance (= 2) is determined as the actual personnel costs amount $\pm 14\%$ x materiality, therefore R1 556 000 \pm R7 000 (14% x R50 000). Diagram 5.11 presents this scenario schematically.

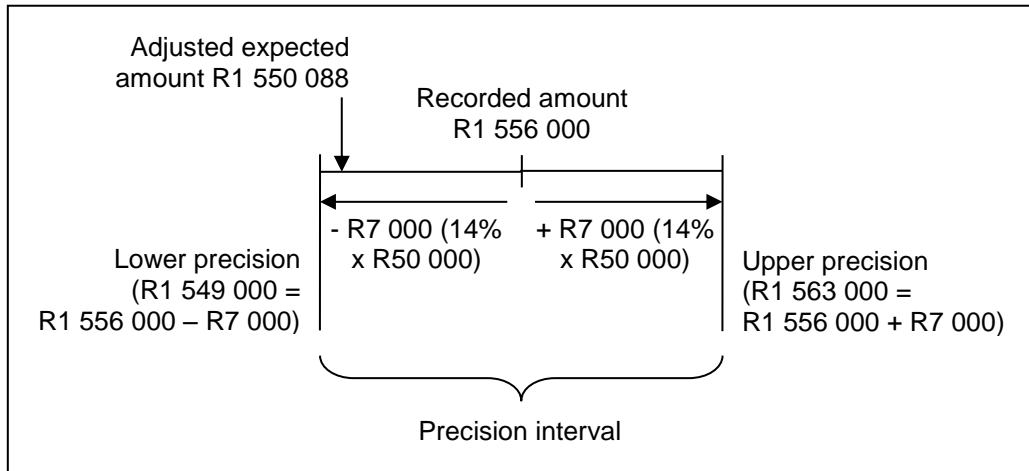
Diagram 5.11: Application of the precision interval for a standard level of assurance (= 2)



In this scenario, the higher standard level of assurance (= 2) implies a narrower precision interval, resulting in the expected personnel costs amount of R1 573 005 developed by the auditor falling outside the precision interval of R1 549 000 to R1 563 000. That is, the difference of R17 005 between the actual personnel costs amount and the expected amount exceeds the precision amount of R7 000. Thus, if a standard level of assurance (= 2) is required, the expected personnel costs amount of R1 573 005 developed by the auditor is not sufficiently precise in order for the auditor to conclude that the actual personnel costs amount of R1 556 000 can be accepted as fairly stated. The R17 005 difference between the recorded amount and the expected amount is considered significant and must be investigated further.

Suppose it is established through enquiry of management and inspection of corroborating documentation that employees earning R55 000 per annum resigned seven months into the financial year. Incorporating this additional information, the expected salary costs amount is adjusted to R1 550 088 ($R1\ 573\ 005 - (R55\ 000 \times 5/12)$). The difference between the actual personnel costs amount of R1 556 000 and the adjusted R1 550 088 expected amount developed by the auditor, now equates to R5 912 ($R1\ 556\ 000 - R1\ 550\ 088$). This is schematically represented in diagram 5.12.

Diagram 5.12: Application of the precision interval for a standard level of assurance (= 2) after refinement of the expectation



Thus, subsequent to the further refinement of the auditor's expectation, the adjusted expected personnel costs amount of R1 550 088 is sufficiently precise to fall within the narrower precision interval of R1 549 000 to R1 563 000; i.e. the difference of R5 912 between the actual and expected amounts is less than the lower precision amount of R7 000. Consequently, the auditor can conclude that the adjusted expectation is sufficiently precise in order for the auditor to derive a higher standard level of assurance (= 2) from the substantive analytical procedures and to accept the actual personnel costs amount of R1 556 000 as fairly stated.

Therefore, from the above it is evident that the level of assurance provided by substantive analytical procedures is determined by the precision of the expectation. The greater the required level of assurance; that is the greater the extent of audit evidence needed, the more precise the expectation must be. A high precision justifies a higher level of assurance from substantive analytical procedures. Consequently, the narrower the range of differences between the auditor's expectation and the recorded amount, the more effective the procedure will be at identifying potential misstatements in the recorded financial

statement amount and the greater the level of assurance that can be derived from the procedure.

5.6.4 The compensatory relationship between substantive analytical procedures and tests of details

The compensatory relationship between the types of audit procedures (tests of controls, substantive analytical procedures and tests of details) was discussed in section 5.3.4. It was concluded that for a targeted overall level of audit assurance (or overall audit risk) and a given assessment of the risks of material misstatement, an acceptable level of detection risk at assertion level can be obtained through various combinations of types of procedures as a result of the compensatory relationship between the extent and types of audit procedures. That is, as more assurance is obtained from one type, less assurance is required from other types. Thus, the extent of audit evidence required from one type of procedure varies directly with the risk that other types of procedures will fail to detect a material misstatement, thereby failing to provide the necessary overall level of assurance. Expressed with reference to risks, the lower the risk that one type of procedure will fail to detect a material misstatement, the higher the risk that can be tolerated by the auditor that other types of procedures will fail to detect material misstatements.

This compensatory relationship is grounded in the audit risk model that expresses audit risk (AR) as a function of the risk of material misstatement (RMM) and detection risk (DR); i.e. $AR = RMM \times DR$. (Refer to section 3.4.3 of chapter 3.) Detection risk presents the risk that the procedures performed by the auditor will not detect a material misstatement that exists (IAASB 2014a: Glossary). For a targeted overall audit risk, detection risk in the audit risk model is reduced by proportionately increasing the levels of assurance derived from tests of controls and substantive procedures, both substantive analytical

procedures and tests of details. Consequently, it can be deduced that the audit risk model can be expanded as follows:

$$AR = RMM \times TCR \times APR \times TDR$$

with TCR indicating the risk that tests of controls will fail to detect material misstatements that exist, APR representing the risk that substantive analytical procedures will fail to detect material misstatements that exist and TDR denoting the risk that tests of details will fail to detect material misstatements that exist. From this formula it can be seen that the risk or overall assurance can be controlled through the extent of tests of controls, the extent of substantive analytical procedures and the extent of tests of details, or a combination of the three. Therefore, the higher the level of assurance that can be obtained from one type of procedure, the lower the levels of assurance that are needed from other types of procedures, thereby still achieving the required overall level of assurance. As the extent of substantive analytical procedures, and tests of controls and tests of details, is generally thought of in terms of precision and sample sizes, respectively, the above formula also demonstrates that audit risk or overall assurance can be controlled through the precision of substantive analytical procedures and the sample sizes of tests of controls and tests of details (IAASB 2014i: ISA 330 par. A15, A47).

The compensatory relationship between substantive analytical procedures, tests of controls and tests of details and the integration of the results from substantive analytical procedures with the extent of audit evidence required from tests of controls and tests of details are illustrated below, based on the audit risk model as encapsulated in the integrated audit evidence planning model. The integration can be explained for the distinct risk percentages and levels of assurance (slight (= 1), standard (= 2) and significant (= 3)) defined in the integrated audit evidence planning model on the basis of the expanded audit risk formula ($AR = RMM \times TCR \times APR \times TDR$).

Assume that the auditor requires a significant level of assurance (= 3), which equates to a 5% audit risk (AR) and that no assurance will be derived from tests of controls (100% TCR). Under these conditions, the auditor will follow a substantive approach and may obtain the required significant level of assurance (= 3) by conducting substantive analytical procedures and tests of details in any of the following three combinations, as illustrated in table 5.3:

- Approach 1:
Tests of controls: no (= 0) assurance (100% TCR)
Substantive analytical procedures: standard (= 2) level of assurance (14% APR)
Tests of details: slight (= 1) level of assurance (37% TDR)
- Approach 2:
Tests of controls: no (= 0) assurance (100% TCR)
Substantive analytical procedures: slight (= 1) level of assurance (37% APR)
Tests of details: standard (= 2) level of assurance (14% TDR)
- Approach 3:
Tests of controls: no (= 0) assurance (100% TCR)
Substantive analytical procedures: no (= 0) assurance (100% APR)
Tests of details: significant (= 3) level of assurance (5% TDR)

Substituting in the expanded audit risk formula for the risk of material misstatement that is present (100% RMM = 1), the overall audit risk (AR) of 5%, the substantive analytical procedures risk (APR) of 14%, together with the assumption that no assurance will be obtained from tests of controls (100%

TCR) under approach 1, the tests of details risk (TDR) can be calculated and confirmed as 37%, corresponding to a slight (= 1) level of assurance, as follows:

$$AR = RMM \times TCR \times APR \times TDR$$

$$0.05 = 1 \times 1 \times 0.14 \times TDR$$

$$TDR = 0.05 / 0.14$$

$$TDR = 0.37 = 37\% = \text{slight (= 1) level of assurance}$$

And in the same way, for the substantive analytical procedures risk (APR) of 37% under approach 2, the tests of details risk (TDR) can be calculated and confirmed as 14%, corresponding to a standard (= 2) level of assurance, as follows:

$$TDR = 0.05 / 0.37 = 0.14 = 14\% = \text{standard (= 2) level of assurance}$$

Similarly, the tests of details risk (TDR) can be calculated and confirmed as 5%, corresponding to a significant (= 3) level of assurance where no assurance is obtain from substantive analytical procedures under approach 3, as:

$$TDR = 0.05 / 1 = 0.05 = 5\% = \text{significant (=3) level of assurance}$$

Comparable calculations can be performed to illustrate the inter-relationship between the results from tests of controls, substantive analytical procedures and tests of details for the remaining distinct risk percentages, levels of assurance and combinations of types of procedures that are permissible in terms of the integrated audit evidence planning model.

Although the extent of and sample sizes for tests of details are discussed later in section 5.7.3, it is worthwhile at this point to note the linkage and compensatory impact of substantive analytical procedures on the sample sizes for tests of details. Following on from the above scenario where the auditor requires a significant level of assurance (= 3) and where no assurance will be derived from tests of controls; at the two extremes for substantive analytical

procedures, no assurance (= 0) and standard (= 2) assurance, the auditor will calculate tests of details sample sizes of 150 ($R100\ 000 \times 3 \div R2\ 000$) and 50 ($R100\ 000 \times 1 \div R2\ 000$), respectively, assuming a financial statement amount of R100 000 and a materiality of R2 000. Thus, the sample size or extent of testing for tests of details is three times as large where no assurance (= 0) is obtained from substantive analytical procedures compared to when a standard (= 2) level of assurance can be derived from substantive analytical procedures.

The compensatory relationships between tests of controls and substantive procedures and between substantive analytical procedures and tests of details, as well as the integration of the results from substantive analytical procedures with the extent of audit evidence required from tests of details, are clearly evident from the above. Thus, the integrated audit evidence planning model provides an exact means of incorporating the assurance obtained from substantive analytical procedures with both the auditor's assessment of risks, which determines the required overall levels of assurance, as well as with the level of audit evidence derived from tests of controls and with the extent of audit evidence needed from tests of details. More specifically, it enables the auditor to directly link the level of assurance from substantive analytical procedures to the extent of audit evidence or sample sizes required from tests of details, guiding the auditor to reduce the level of assurance needed from tests of details where analytical procedures are successfully employed as substantive procedures, thereby achieving a more efficient and effective audit.

The next section explores the extent of tests of controls and tests of details, generally thought of in terms of sample sizes (IAASB 2014i: ISA 330 par. A47), in more detail in the context of the integrated audit evidence planning model.

5.7 TESTS OF CONTROLS AND TESTS OF DETAILS

The auditor addresses the overall objective of an audit of obtaining reasonable assurance about whether the financial statements are free from material misstatement by designing and performing further audit procedures in order to obtain sufficient appropriate audit evidence to respond to the assessed risk that the financial misstatements may be materially misstated. Thus, audit evidence is necessary to support the audit opinion and the auditor may obtain sufficient appropriate audit evidence through the execution of further audit procedures, comprising tests of controls, substantive analytical procedures and tests of details.

Tests of controls are designed to evaluate the operating effectiveness of controls in preventing, or detecting and correcting, material misstatements in the financial statements (IAASB 2014i: ISA 330 par. 4(b)). Whereas tests of details are designed to discover material misstatements in the financial statements that have not been prevented, or detected and corrected by controls (IAASB 2014i: ISA 330 par. 4(a)). In contrast to tests of controls and tests of details, which are focussed on the individual control activities and transactions that result in the recorded financial statement amounts, substantive analytical procedures examine whether a recorded financial statement amount is materially misstatement without considering the details of the individual transactions that comprise the recorded amount. Substantive analytical procedures are designed to evaluate the reasonableness of recorded financial statement amounts through comparison with expectations developed by the auditor based on plausible relationships among both financial and non-financial data (IAASB 2014n: ISA 520 par. 4). A combination of these three types of further audit procedures is performed to obtain sufficient appropriate audit evidence on which to base the audit opinion.

When designing tests of controls and tests of details the auditor determines means of selecting items for testing that are effective in obtaining sufficient

appropriate audit evidence to enable the auditor to draw reasonable conclusions on which to base the audit opinion. Depending on the particular circumstances, the means of selecting items for testing that are available to the auditor include 100% examination, selecting specific items, sampling or a combination of these means. (IAASB 2014k: ISA 500 par. A52) The application of any one or a combination of these means of selecting items for testing may be appropriate depending on the particular circumstances.

However, ISA 330.A47 (IAASB 2014i) specifically states that, in designing and performing tests of controls and tests of details, the extent of audit procedures is generally thought of in terms of sampling and the quantity of procedures to be performed in terms of sample sizes. Thus, in line with this ISA requirement and for purposes of achieving audit efficiency and effectiveness, this study considers the extent of tests of controls and tests of details to be performed in response to the auditor's risk assessment and the desired level of assurance from the perspective of sample sizes. The remainder of this section therefore applies the integrated audit evidence planning model to the quantification of sample sizes for tests of controls and tests of details.

5.7.1 Determinants of sample size

In general terms, sampling can be described as the process of selecting a group of items; referred to as the sample, from a larger set of data or items; known as the population and using the characteristics of the sample to draw inferences about the characteristics of the entire population of items. (Refer to section 3.5.2.2 of chapter 3.) The underlying assumption of sampling is that the sample will allow accurate inferences to be made about the population. (Whittington and Pany 2010: 327; Colbert 2001: 27) In other words, sampling involves the selection of less than 100% of items from a population, such that all the items in the population have a chance of being selected, with the objective that the sample provides a reasonable basis for reaching a conclusion on all the

items in the population, including those not selected for testing (IAASB 2014o: ISA 530 par. 5(a)). Thus, sampling is designed to enable conclusions to be drawn about an entire population on the basis of testing only a selection of items drawn from the population.

There are three key inputs to computing sample sizes; (1) the desired level of assurance, (2) the tolerable misstatement amount or deviation rate and (3) the expected population misstatement amount or deviation rate. Considerable judgement is required in establishing the appropriate values for these three determinants as input in calculating appropriate sample sizes. Consequently, the calculation of sample sizes is often the most difficult step in applying a sampling approach.

5.7.1.1 *Desired level of assurance*

Basic to the performance of all audit procedures is the risk that the procedures performed by the auditor to obtain the desired level of assurance will not detect a misstatement that exists and that the auditor will consequently express an inappropriate audit opinion. This risk similarly applies when audit procedures are performed on a sample. The auditor addresses this risk of expressing an inappropriate audit opinion when the financial statements are materially misstated by obtaining more persuasive audit evidence, therefore increasing the extent of audit evidence, the higher the assessed risk of material misstatement (IAASB 2014i: ISA 330 par. A19). Thus, it can be deduced that the auditor's assessment of risk and the level of assurance needed to address that risk, affect the sample sizes required; the underlying concept being that to increase the level of assurance more work is required, which is reflected in a larger sample size. Therefore, the auditor must determine a sample size sufficient to reduce the risk that the financial statements contain undetected material misstatements to an acceptably low level. The higher the required level of assurance; i.e. the lower the risk the auditor is willing to accept, the greater the

sample size will need to be. For example, assuming a tolerable deviation rate of 5% and an expected deviation rate of 0%, the sample size decreases from 60 for a significant level of assurance (= 3), to 40 for a standard level of assurance (= 2) and to only 20 for a slight level of assurance (= 1). This is illustrated in table 5.5, which is based on an extract from the statistical sample size tables in addendums B, C and D to this study.

Table 5.5: Direct relationship between desired level of assurance and sample size

Significant (= 3) 95% level of assurance					
Expected deviation rate	Sample size (Number of expected errors)				
	Tolerable deviation rate				
	3%	4%	5%	6%	7%
0.00%	100 (0)	75 (0)	60 (0)	50 (0)	43 (0)
0.25%	159 (1)	119 (1)	95 (1)	80 (1)	68 (1)
0.50%	159 (1)	119 (1)	95 (1)	80 (1)	68 (1)
0.75%	211 (2)	119 (1)	95 (1)	80 (1)	68 (1)
1.00%	259 (3)	158 (2)	95 (1)	80 (1)	68 (1)

Standard (= 2) 86% level of assurance					
Expected deviation rate	Sample size (Number of expected errors)				
	Tolerable deviation rate				
	3%	4%	5%	6%	7%
0.00%	66 (0)	50 (0)	40 (0)	33 (0)	29 (0)
0.25%	116 (1)	87 (1)	70 (1)	58 (1)	50 (1)
0.50%	116 (1)	87 (1)	70 (1)	58 (1)	50 (1)
0.75%	116 (1)	87 (1)	70 (1)	58 (1)	50 (1)
1.00%	161 (2)	87 (1)	70 (1)	58 (1)	50 (1)

Slight (= 1) 63% level of assurance					
Expected deviation rate	Sample size (Number of expected errors)				
	Tolerable deviation rate				
	3%	4%	5%	6%	7%
0.00%	34 (0)	25 (0)	20 (0)	17 (0)	15 (0)
0.25%	72 (1)	54 (1)	43 (1)	36 (1)	31 (1)
0.50%	72 (1)	54 (1)	43 (1)	36 (1)	31 (1)
0.75%	72 (1)	54 (1)	43 (1)	36 (1)	31 (1)
1.00%	72 (1)	54 (1)	43 (1)	36 (1)	31 (1)

(Refer to the statistical sample size tables in addendums B, C and D to this study.)

In relating the required level of assurance to the sample size the auditor considers the components of the audit risk model: $AR = RMM \times DR$. For example, the more assurance the auditor intends to obtain from the operating effectiveness of controls at a given required overall level of assurance, the lower the level of assurance that will be needed from tests of details. Correspondingly, the extent of the auditor's tests of controls is greater and the sample size for tests of controls is therefore increased. However, if the auditor does not perform tests of controls, the auditor cannot obtain any assurance from tests of controls and to achieve the required overall level of assurance the auditor will rely more on tests of details. Consequently, a higher level of assurance is needed from tests of details and more audit evidence must be obtained from tests of details, resulting in a larger sample size for tests of details.

Based on the integrated audit evidence planning model, table 5.4 summarises the distinct levels of assurance, together with the corresponding assurance factors, as follows for tests of controls and tests of details:

- Tests of controls: Slight (= 1) 63% level of assurance
Standard (= 2) 86% level of assurance
- Tests of details: Slight (= 1) 63% level of assurance
Standard (= 2) 86% level of assurance
Significant (= 3) 95% level of assurance

The above distinct levels of assurance and assurance factors for tests of controls and tests of details, as contained in the integrated audit evidence planning model, are applied to and quantitatively linked to the extent and specifically the sample sizes for such further audit procedures in sections 5.7.2 and 5.7.3. Addendums B, C and D to this study contain statistical sample size

tables for each of the distinct levels of assurance of slight (= 1), standard (= 2) and significant (= 3), as used in the integrated audit evidence planning model.

5.7.1.2 Tolerable misstatement or deviation rate

Tolerable misstatement or deviation rate is the maximum error in a population that the auditor is willing to accept. More specifically, tolerable misstatement is the maximum amount by which a class of transactions, account balance or disclosure can be misstated and still be acceptable to the auditor as being fairly stated. Tolerable misstatement is the application of and equates to materiality for sampling applications. Tolerable deviation rate is the maximum deviation rate from a prescribed control that the auditor is willing to accept and still consider the control effective and conclude that the control activity can be relied on. (IAASB 2014o: ISA 530 par. 5; Eilifsen et al 2010: 269, 297; O'Reilly, et al 1999: 336)

There is an inverse relationship between tolerable misstatement or deviation rate, and sample size (IAASB 2014o: ISA 530 Appendix 2, 3). As the tolerable misstatement or deviation rate increases the sample size required to achieve the desired level of assurance decreases. Thus, all other factors being equal, sample size almost doubles if the tolerable misstatement or deviation rate is halved. For example, for a significant level of assurance (= 3) and 0 expected deviations, the sample size increases from 30 to 60 if the tolerable deviation rate is reduced from 10% to 5%. This is illustrated in table 5.6, which is based on an extract from the statistical sample size table in addendum B to this study.

Table 5.6: Inverse relationship between tolerable deviation rate and sample size

Significant (= 3) 95% level of assurance						
Expected deviation rate	Sample size (Number of expected errors)					
	Tolerable deviation rate					
	5%	6%	7%	8%	9%	10%
0.00%	60 (0)	50 (0)	43 (0)	38 (0)	34 (0)	30 (0)
0.25%	95 (1)	80 (1)	68 (1)	60 (1)	53 (1)	48 (1)
0.50%	95 (1)	80 (1)	68 (1)	60 (1)	53 (1)	48 (1)
0.75%	95 (1)	80 (1)	68 (1)	60 (1)	53 (1)	48 (1)
1.00%	95 (1)	80 (1)	68 (1)	60 (1)	53 (1)	48 (1)

(Refer to the statistical sample size table in addendum B to this study.)

The concept of tolerable deviation rate recognises that some deviations in the way controls are applied by the entity may occur. Deviations from prescribed controls may, for example, be caused by such factors as changes in key personnel, significant seasonal fluctuations in volume of transactions and human error. (IAASB 2014i: ISA 330 par. A41) The reason why some control deviations can be tolerated relates to the purpose and application of controls. To be effective, most controls do not need to operate 100% of the time. When a control fails to operate, such control deviations do not necessarily always result in misstatements in the financial statements because most transactions are properly input and processed and there are other compensating controls that might detect a misstatement should one occur, and corrective action might be taken if necessary. (Eilifsen et al 2010: 269) Therefore, a tolerable deviation rate of, for example, 5% indicates that the test of control is designed to demonstrate that the control fails no more than 5% of the time and does not necessarily mean that 5% of the financial statement amounts are misstated.

However, to be effective a control must operate effectively a reasonable high percentage of the time. Therefore, when determining a tolerable deviation rate for a specific control the auditor considers the level of assurance to be derived

from the test of control; it may be appropriate to lower the tolerable deviation rate as the required level of control assurance increases. Eilifsen et al (2010: 269) recommend a tolerable deviation rate between 3% and 5% when a higher level of assurance is required from tests of controls and 6% to 10% when a lower level of control assurance is needed. Arens et al (2012: 491) proposed tolerable deviation rates of 4% to 6%, with O'Reilly et al (1999: 336) suggesting a range of possible tolerable deviation rates between 5% and 10%. These suggested tolerable deviation rates are further applied to the extent and sample sizes of tests of controls in section 5.7.2.

5.7.1.3 Expected misstatement or deviation rate

Expected misstatement or deviation rate is the error the auditor expects in the population. In particular, the expected misstatement is the amount of misstatement that the auditor believes exists in the financial statement amount. (Eilifsen et al 2010: 298) As the expected misstatement increases, the sample size necessary to achieve the required level of assurance at a given tolerable misstatement amount increases as well (IAASB 2014o: ISA 530 Appendix 2, 3; O'Reilly, et al 1999: 337). The greater the amount of misstatement the auditor expects to find in the population, the larger the sample size needs to be in order to reach a conclusion on the actual amount of misstatement in the population at the desired level of assurance. Therefore, there is a direct relationship between the expected misstatement and sample size; the larger the expected misstatement, the larger the sample size must be.

Expected deviation rate is the deviation rate from a prescribed control that the auditor expects in the population (Eilifsen et al 2010: 270). As discussed in the previous section, some level of deviation is normally expected because the controls being tested are typically dependent on human involvement and humans are not perfect, but not all control failures necessarily result in misstatements in the financial statements. There is a direct relationship

between the expected deviation rate and sample size; all else being equal, an increase in the expected deviation rate will require a larger sample in order for the auditor to reasonably estimate the actual population deviation rate at the desired level of assurance (IAASB 2014o: ISA 530 Appendix 2, 3; O'Reilly, et al 1999: 337). Thus, if the expected deviation rate is high, it is normally not efficient to test controls and the auditor may decide not to perform tests of controls, but rather to increase the extent of substantive procedures to obtain the required level of assurance. The relationship between expected deviation rate and sample size can be illustrated as follows. For a significant level of assurance (= 3) and a tolerable deviation rate of 5%, the sample size increases from 60 to 184 if the expected deviation rate increases from 0% to 2%. This is illustrated in table 5.7, which is based on an extract from the statistical sample size table in addendum B to this study.

Table 5.7: Direct relationship between expected deviation rate and sample size

Significant (= 3) 95% level of assurance					
Expected deviation rate	Sample size (Number of expected errors)				
	Tolerable deviation rate				
	3%	4%	5%	6%	7%
0.00% ←	100 (0)	75 (0)	60 (0)	50 (0)	43 (0)
0.25%	159 (1)	119 (1)	95 (1)	80 (1)	68 (1)
0.50%	159 (1)	119 (1)	95 (1)	80 (1)	68 (1)
0.75%	211 (2)	119 (1)	95 (1)	80 (1)	68 (1)
1.00%	259 (3)	158 (2)	95 (1)	80 (1)	68 (1)
1.25%	306 (4)	158 (2)	127 (2)	80 (1)	68 (1)
1.50%	395 (6)	194 (3)	127 (2)	106 (2)	90 (2)
1.75%	566 (10)	263 (5)	156 (3)	106 (2)	90 (2)
2.00% ←	850 (17)	297 (6)	184 (4)	130 (3)	90 (2)
2.25%	1510	393 (9)	211 (5)	130 (3)	111 (3)
2.50%	-	517 (13)	237 (6)	153 (4)	111 (3)
2.75%	-	727 (20)	289 (8)	176 (5)	131 (4)
3.00%	-	1132	365 (11)	198 (6)	131 (4)

(Refer to the statistical sample size table in addendum B to this study.)

5.7.1.4 Precision and sample sizes

Once the desired level of assurance has been decided, the appropriate sample size is mainly determined by the extent to which tolerable misstatement or deviation rate (tolerable error) exceeds expected misstatement or deviation rate (expected error). It does not matter which of the two variables reduces the difference between the tolerable error and the expected error, the important aspect is the relative difference between the error rate that is expected and the error rate that can be tolerated. This difference between the expected error and the tolerable error is referred to as the precision of the sampling application. (Eilifsen et al 2010: 262) Precision relates to how close the auditor's estimate, based on the sample, is to the actual population characteristic being audited, given a specific level of assurance. The closer the sample estimate is to the actual population characteristic, the more precise the sample results must be and the larger the sample size that is required. Thus, sample size will increase as the difference between the expected error and the tolerable error decreases, resulting in a smaller precision.

However, the relationship between the difference in the expected error and the tolerable error; i.e. the precision and sample size is not proportionate. Sample size increases significantly as the expected error approaches the tolerable error and the smaller the precision. For example, with reference to table 5.8, for a significant level of assurance ($= 3$), assume the tolerable deviation rate is 5% and the expected deviation rate is 0%. In this scenario the precision is 5% ($5\% - 0\%$), resulting in a sample size of 60. If the expected deviation rate increases to 1%, precision is 4% ($5\% - 1\%$) and the sample size increases by 35 items to 95 items. Increasing the expected deviation rate to 2% results in a 3% precision ($5\% - 2\%$) with the sample size increasing by a further 89 items to 184 items. When the expected deviation rate is raised by an additional 1% to 3%, precision is 2% ($5\% - 3\%$) and the sample size increases to 365 items, an increase of 181 items. Thus, it is evident that for every 1% reduction in precision, the sample

size increases exponentially. This is illustrated in table 5.8, which is based on an extract from the statistical sample size table in addendum B to this study.

Table 5.8: Inverse relationship between precision and sample size

Significant (= 3) 95% level of assurance					
Expected deviation rate	Sample size (Number of expected errors)				
	Tolerable deviation rate				
	3%	4%	5%	6%	7%
0.00%	100 (0)	75 (0)	60 (0)	50 (0)	43 (0)
0.25%	159 (1)	119 (1)	95 (1)	80 (1)	68 (1)
0.50%	159 (1)	119 (1)	95 (1)	80 (1)	68 (1)
0.75%	211 (2)	119 (1)	95 (1)	80 (1)	68 (1)
1.00%	259 (3)	158 (2)	95 (1)	80 (1)	68 (1)
1.25%	306 (4)	158 (2)	127 (2)	80 (1)	68 (1)
1.50%	395 (6)	194 (3)	127 (2)	106 (2)	90 (2)
1.75%	566 (10)	263 (5)	156 (3)	106 (2)	90 (2)
2.00%	850 (17)	297 (6)	184 (4)	130 (3)	90 (2)
2.25%	1510	393 (9)	211 (5)	130 (3)	111 (3)
2.50%	-	517 (13)	237 (6)	153 (4)	111 (3)
2.75%	-	727 (20)	289 (8)	176 (5)	131 (4)
3.00%	-	1132 (34)	365 (11)	198 (6)	131 (4)
3.25%	-	-	487 (16)	241 (8)	151 (5)
3.50%	-	-	652 (23)	283 (10)	170 (6)
3.75%	-	-	906 (34)	345 (13)	207 (8)
4.00%	-	-	-	425 (17)	225 (9)

(Refer to the statistical sample size table in addendum B to this study.)

When the expected error is 0, the precision is referred to as the “basic precision” (Eilifsen et al 2010: 302), but it also equates to the assurance factors derived in section 5.3.2. Therefore, the assurance factor is equal to the basic precision, which in turn is equivalent to the tolerable error less the expected error, where the expected error is 0. The basic precisions and thus, the assurance factors for the three distinct levels of assurance permissible under

the integrated audit evidence planning model, can be read as the tolerable deviation rate that corresponds to a sample size of 100 (to reflect percentages) in the 0 expected deviation rate line in the three statistical sample size tables in addendums B, C and D. This gives an assurance factor of 3 for a significant 95% level of assurance, an assurance factor of 2 for a standard 86% level of assurance and an assurance factor of 1 for a slight 63% level of assurance. This is illustrated in table 5.9 for an assurance factor of 3 for a significant 95% level of assurance. In the same manner the assurance factors of 2 and 1 for standard 86% and slight 63% levels of assurance, respectively, can be read from the statistical sample size tables in addendums C and D.

Table 5.9: Assurance factor for a significant 95% level of assurance

Significant (= 3) 95% level of assurance					
Expected deviation rate	Sample size (Number of expected errors)				
	Tolerable deviation rate				
	1%	2%	3%	4%	5%
0.00%	300 (0)	150 (0)	100 (0)	75 (0)	60 (0)
0.25%	631 (2)	238 (1)	159 (1)	119 (1)	95 (1)
0.50%	1185 (6)	316 (2)	159 (1)	119 (1)	95 (1)
0.75%	4527	388 (3)	211 (2)	119 (1)	95 (1)
1.00%	-	593 (6)	259 (3)	158 (2)	95 (1)

(Refer to the statistical sample size table in addendum B to this study.)

Therefore, the assurance factors are not arbitrary, but have a distinct meaning that is indicated in section 5.3.2. These confidence levels are further applied to the extent and sample sizes for tests of details in section 5.7.3.

Precision is also the cause for the non-values, reflected as “-“, in the sample size tables in addendums B, C and D. The non-values (“-“) appear in the tables either when tolerable error and expected error are so close together that sample

sizes become too large to be practical, or when the expected error exceeds the tolerable error, in which case sampling is clearly not appropriate.

5.7.2 Impact on tests of controls

In section 3.5.2.2 of chapter 3, the adoption of a non-statistical sampling approach to the determination of non-statistical sample sizes for tests of controls that is based on statistical sampling theory was motivated. However, even when a non-statistical approach is used to determine sample sizes, all three of the sample size determinants of desired assurance level, tolerable deviation rate and expected deviation rate, discussed in the previous section must be considered. ISA 530.A9 and .A11 (IAASB 2014o) further requires that the sample sizes for non-statistical and statistical applications should be comparable. Therefore, although the auditor is not required to use statistical formulas or tables to incorporate these three variables in determining sample sizes under a non-statistical approach, the auditor is required to apply his professional judgement and knowledge of the underlying statistical sampling theories, methods and assumptions in order to appropriately consider the three determinants of sample size in arriving at a non-statistical sample size that is comparable to the statistical sample size.

However, this can be a fairly daunting prospect, considering the three statistical sample size tables in addendums B, C and D for the different levels of assurance permissible in terms of the integrated audit evidence planning model. The three tables indicate countless different sample sizes derived from a myriad of alternative combinations of tolerable and expected deviation rates. Applying professional judgement in determining non-statistical sample sizes, particularly where the auditor does not have a sound basic knowledge of statistical sampling theories, methods and assumptions, raises concerns of inconsistent sampling judgements across engagement teams and of sampling judgements that may differ significantly from statistical sampling theory. (Eilifsen et al 2010:

282; Whittington and Pany 2010: 352; AICPA 2008: par. 2.26) This may result in inefficient and ineffective testing that does not provide sufficient appropriate audit evidence at the desired level of assurance to support the audit opinion (Eilifsen et al 2010: 264). Consequently, in applying the integrated audit evidence planning model, this study derives a non-statistical sampling model for tests of controls in terms of which both the sample size determinants of desired assurance level and tolerable deviation rate are fixed in line with sampling theories, methods and assumptions, as well as generally accepted auditing practice and global audit guidance, with only the decision regarding expected deviation rate being left to the auditor's judgement.

The distinct levels of assurance for tests of controls that are permissible in terms of the integrated audit evidence planning model developed in this study, was derived in section 5.3.5. Section 5.7.1.1 highlighted the two distinct levels of assurance, together with the corresponding assurance factors, for tests of controls as a slight 63% level of assurance (= 1) and a standard 86% level of assurance (= 2). With reference to the tolerable deviation rate, section 5.7.1.2 discussed that tolerable deviation rates commonly found in practice ranged between 3% and 10%. Based on these suggestions, a tolerable deviation rate of 5% is used in this study.

Table 5.10 illustrates how the tests of controls sample sizes in table 5.11 are derived for a standard (= 2) 86% level of assurance by applying a 5% tolerable deviation rate to the statistical sample size table in addendum C. In the same manner the tests of controls sample sizes in table 5.11 for a slight (= 1) 63% level of assurance can be read from the statistical sample size table in addendum D.

Table 5.10: Deriving sample sizes for tests of controls

Standard (= 2) 86% level of assurance					
Expected deviation rate	Sample size (Number of expected errors)				
	Tolerable deviation rate				
	3%	4%	5%	6%	7%
0.00%	66 (0)	50 (0)	40 (0)	33 (0)	29 (0)
0.25%	116 (1)	87 (1)	70 (1)	58 (1)	50 (1)
0.50%	116 (1)	87 (1)	70 (1)	58 (1)	50 (1)
0.75%	116 (1)	87 (1)	70 (1)	58 (1)	50 (1)
1.00%	161 (2)	87 (1)	70 (1)	58 (1)	50 (1)
1.25%	205 (3)	121 (2)	70 (1)	58 (1)	50 (1)
1.50%	247 (4)	121 (2)	97 (2)	58 (1)	50 (1)
1.75%	329 (6)	154 (3)	97 (2)	81 (2)	50 (1)
2.00%	448 (9)	185 (4)	97 (2)	81 (2)	50 (1)
2.25%	754 (17)	216 (5)	123 (3)	81 (2)	69 (2)
2.50%	1599 (40)	277 (7)	148 (4)	103 (3)	69 (2)
2.75%	-	394 (11)	173 (5)	103 (3)	69 (2)
3.00%	-	565 (17)	197 (6)	124 (4)	88 (3)
3.25%	-	981 (32)	245 (8)	145 (5)	88 (3)
3.50%	-	-	339 (12)	165 (6)	106 (4)
3.75%	-	-	452 (17)	185 (7)	106 (4)

(Refer to the statistical sample size table in addendum C to this study.)

Table 5.11 demonstrates the quantitative link between the extent of, and specifically the sample sizes for, tests of controls and the integrated audit evidence planning model.

Table 5.11: Sample sizes for tests of controls under the integrated audit evidence planning model

Expected number of errors	Sample size	
	Standard (= 2) 86% level of assurance	Slight (= 1) 63% level of assurance
0	40	20
1	70	43
2	97	65
3	123	87
4	148	109
5	173	130

From table 5.11 it is clearly evident that the extent of audit evidence, or sample sizes, for tests of controls increases as the required level of assurance increases, which is in adherence with the requirement of ISA 330 (IAASB 2014i: par. 7(b), A19). For example, if no errors are expected, the auditor is required to test 40 items at a standard level of assurance (= 2), whereas only 20 items need to be tested at a slight level of assurance (= 1).

5.7.3 Impact on tests of details

Just as tests of controls are performed using a non-statistical approach, so does this study apply a non-statistical approach to tests of details. Although a non-statistical approach is permissible in terms of ISA 530.A4 (IAASB 2014o), the three sample size determinants of desired assurance level, tolerable misstatement that equates to materiality, and expected misstatement, discussed in section 5.7.1, must be considered in determining sample sizes for tests of details in terms of a non-statistical sampling approach. Thus, the integrated audit evidence planning model employs a simple formula approach

that is consistent with statistical sampling theories, methods and assumptions, to the determination of non-statistical sample sizes for tests of details that is quantitatively linked to the required overall levels of assurance.

It is generally accepted that the following formula, comprising three variables, may be used to calculate a non-statistical sample size for tests of details:

$$\text{Sample size} = \frac{\text{Recorded population amount} \times \text{Assurance factor}}{\text{Tolerable misstatement (materiality)}}$$

The acceptability of the formula is evident from the use thereof in guides and studies such as IFAC's (2011b: 229) *Guide to using ISAs in the audits of small- and medium-sized entities*, AICPA's (2008: par. 4.66) *Audit guide: Audit sampling* and Turley and Cooper's (1991: 110) *Study of development in the audit methodologies of large accounting firms*, as well as through the reference thereto in various text books, e.g. Arens et al's (2012: 564) *Auditing and assurance services*, Eilifsen et al's (2010: 309) *Auditing and assurance services* and Messier et al's (2010: 330) *Auditing and assurance services: A systematic approach*. Use of this simple formula increases the consistency of non-statistical sampling judgements with statistical sampling theory and across engagement teams.

The meaning of the assurance factor, the basic precision in sampling terms, as well as the relationship between the assurance factors and the three distinct levels of assurance permissible under the integrated audit evidence planning model, were discussed in section 5.7.1.4. Section 5.7.1.1 indicates that three levels of assurance are permissible for tests of details in terms of the integrated audit evidence planning model, corresponding to the following assurance factors:

- For a significant 95% level of assurance: Assurance factor = 3
- For a standard 86% level of assurance: Assurance factor = 2
- For a slight 63% level of assurance: Assurance factor = 1

To illustrate the impact of the sample size formula on the relationship between the increase in extent of audit evidence, or sample sizes for tests of details, and the requirement that the auditor must obtain more persuasive audit evidence; i.e. a higher level of assurance, the higher the auditor's assessment of the risks of material misstatement (IAASB 2014i: ISA 330 par. 7(b), A19), the following example is considered: Assuming a recorded financial statement amount of R100 000 and a materiality of R2 000, the auditor calculates a sample size of 150 items ($R100\ 000 \times 3 \div R2\ 000$) at a significant 95% level of assurance (= 3), a sample size of 100 items ($R100\ 000 \times 2 \div R2\ 000$) when a standard 86% level of assurance (= 2) is required and a sample size of 50 items ($R100\ 000 \times 1 \div R2\ 000$) for a slight 63% level of assurance (= 1). Thus, the sample size or extent of testing for tests of details is three times as large where a significant level of assurance (= 3) is required compared to where only a slight level of assurance (= 1) is required.

The example clearly illustrates that the integrated audit evidence planning model links the required levels of assurance to the extent of audit evidence needed from tests of details; i.e. the higher the required level of assurance, the more extensive the extent and the larger the sample sizes for tests of details.

5.7.4 The compensatory relationship between tests of controls and tests of details

The compensatory relationship between the types of audit procedures (tests of controls, substantive analytical procedures and tests of details), as encapsulated in the audit risk model, was discussed in section 5.3.4. It was concluded that for a targeted overall level of assurance, there exists a compensatory relationship between the extent of audit evidence needed from tests of controls, substantive analytical procedures and tests of details such that as more assurance is obtained from one type of procedure, less assurance is required from the remaining two types of procedures. More specifically, there

exist inverse relationships both between tests of controls and substantive procedures, as well as between the two types of substantive procedures, substantive analytical procedures and tests of details. The trade-off between substantive analytical procedures and tests of details was discussed in section 5.6.4.

With reference to the relationship between tests of controls and tests of details, the two types of procedures are complementary, the assurance derived from one reduces proportionately the assurance the auditor needs from the other to address the auditor's assessment of risk, assuming that no assurance will be obtained from substantive analytical procedures. Thus, the extent of audit evidence required from one type of procedure varies directly with the risk that the other types of procedures will fail to detect a material misstatement, thereby failing to provide the necessary overall level of assurance. Therefore, the higher the level of assurance derived from tests of controls the lower the level of assurance the auditor needs from substantive procedures to maintain overall assurance at the required level and vice versa. Consequently, the required overall level of assurance can be controlled through the extent of tests of controls, the extent of substantive procedures, or a combination of the two.

With specific reference to tests of controls and tests of details, the extent of these tests is generally thought of in terms of sample sizes (IAASB 2014i: ISA 330 par. A47). Therefore, the compensatory relationship between the extent of audit evidence from tests of controls and tests of details and the integration thereof with the distinct overall levels of assurance (slight (= 1), standard (= 2) and significant (= 3)) defined in the integrated audit evidence planning model, can be controlled through the sample sizes for tests of controls and tests of details. To illustrate; assume that the auditor requires a significant overall level of assurance (= 3) and that no assurance will be derived from substantive analytical procedures. Under these conditions, the auditor may obtain the required significant overall level of assurance (= 3) by conducting

tests of controls and tests of details in any of the following three combinations, as illustrated in table 5.3:

- Approach 1:
Tests of controls: standard (= 2) 86% level of assurance
Substantive analytical procedures: no assurance
Tests of details: slight (= 1) 63% level of assurance
- Approach 2:
Tests of controls: slight (= 1) 63% level of assurance
Substantive analytical procedures: no assurance
Tests of details: standard (= 2) 86% level of assurance
- Approach 3:
Tests of controls: no assurance
Substantive analytical procedures: no assurance
Tests of details: significant (= 3) 95% level of assurance

Under approach 1, the auditor determines a sample size for tests of controls from table 5.11, equal to 40 items for a standard 86% level of assurance (= 2), assuming no errors are expected. The tests of details sample at a slight 63% level of assurance (= 1) is calculated as 50 items ($R100\ 000 \times 1 \div R2\ 000$), using the tests of details sample size formula and assuming a financial statement amount of R100 000 and a R2 000 materiality. In the same way for approach 2, the tests of controls sample size for a slight 63% level of assurance (= 1) can be determined as 20 items from table 5.11, assuming no errors are expected and the sample size for tests of details can be calculated as 100 items ($R100\ 000 \times 2 \div R2\ 000$) for a standard 86% level of assurance (= 2). Similarly,

the tests of details sample size can be calculated as 150 items (R100 000 x 3 ÷ R2 000), corresponding to a significant 95% level of assurance (= 3), where no assurance is obtain from tests of controls under approach 3. This is summarised in table 5.12.

Table 5.12: Compensatory relationship between tests of controls and tests of details

Types of procedures	Sample sizes		
	Approach 1	Approach 2	Approach 3
Tests of controls	40	20	–
Substantive analytical procedures	–	–	–
Tests of details	50	100	150

The compensatory relationship between tests of controls and tests of details, as well as the integration of the results from tests of controls with the extent of audit evidence required from tests of details, is clearly evident from the above. Similarly, the compensatory inter-relationship that exists within the integrated audit evidence planning model between the extent of substantive analytical procedures and tests of details was illustrated in section 5.6.4. Thus, the integrated audit evidence planning model provides an exact means of incorporating the assurance obtained from tests of controls with both the auditor’s assessment of risks, which determines the required overall levels of assurance, as well as with the level of audit evidence required from substantive analytical procedures and the extent of audit evidence needed from tests of details. More specifically, it enables the auditor to directly link the level of assurance from tests of controls to the extent of audit evidence or the required sample size for tests of details, guiding the auditor to reduce the level of

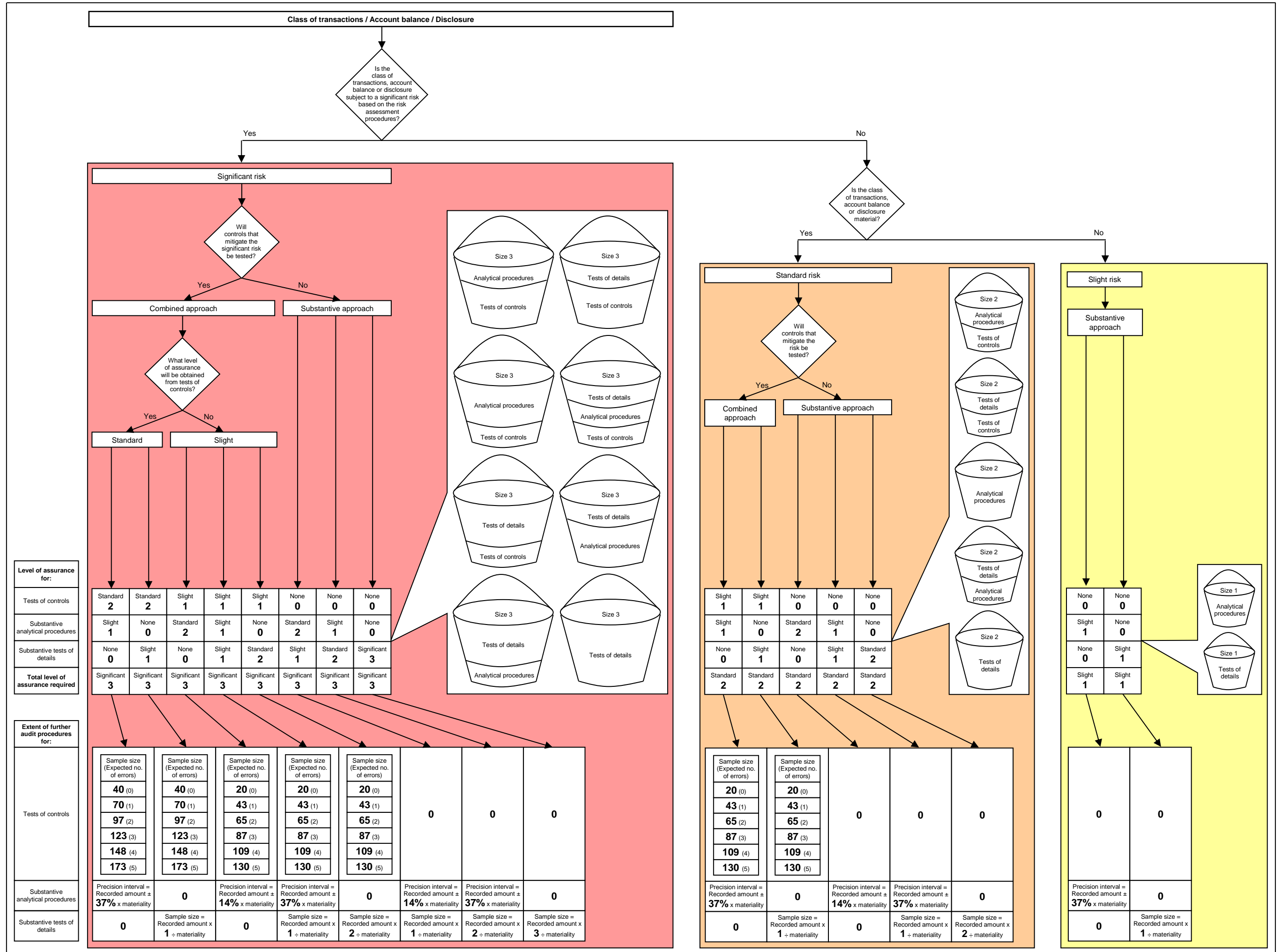
assurance needed from tests of details where tests of controls are successfully performed.

5.8 THE INTEGRATED AUDIT EVIDENCE PLANNING MODEL: LEVELS OF ASSURANCE LINKED TO THE EXTENT OF FURTHER AUDIT PROCEDURES

Diagram 5.8 illustrated the quantification of the desired overall levels of assurance and the quantification of the inter-relationship between the overall levels of assurance and the levels of assurance obtainable from the various possible audit evidence gathering combinations. Diagram 5.8 further numerically linked the level of assurance obtained from one type of procedure to the levels of assurance required from other types of procedures.

Thereafter, a quantitative link was established between the distinct levels of assurance comprising the integrated audit evidence planning model and the extent of audit evidence derived from further audit procedures in order to demonstrate the impact of the model on the extent of audit evidence from tests of controls, substantive analytical procedures and tests of details. This link between the levels of assurance and the extent of further audit procedures is schematically illustrated in diagram 5.13, which builds on and expands diagram 5.8. The auditor should use the integrated audit evidence planning model depicted in the diagram quantitatively to direct the audit decisions and judgements about the extent of tests of controls, substantive analytical procedures and tests of details in an objective, structured and logical manner that quantitatively relates to and integrates with the auditor's risk assessment and overall levels of assurance. The model guides the auditor to obtain sufficient appropriate audit evidence at the level of assurance needed to draw conclusions about whether the financial statements are free from material misstatement, thereby enabling the auditor to express an opinion on the financial statements.

Diagram 5.13: The integrated audit evidence planning model: Levels of assurance linked to the extent of further audit procedures



5.9 JUDGEMENT AND THE INTEGRATED AUDIT EVIDENCE PLANNING MODEL

The integrated audit evidence planning model in diagram 5.13 illustrates numerous potential routes that are available to guide and influence the auditor in obtaining the extent of audit evidence needed to respond to the risks of material misstatement. It includes the audit evidence mix matrix that summarises the range of possible inter-related audit evidence procedure combinations that may be employed by the auditor, which is visualised by means of a variety of assurance buckets. Even with an integrated audit evidence planning model such as the one in diagram 5.13 that clarifies the audit evidence decision sequences, inter-relationships and contingent dependencies of the different audit procedures and quantifies the compensatory inter-relationships between the types of audit procedures and the desired overall levels of assurance, it is clear that considerable judgement is required from the auditor in planning and implementing the audit evidence gathering decisions and approaches necessary to obtain sufficient appropriate audit evidence on which to base the audit opinion. For example, the auditor may elect not to conduct tests of controls, it may not always be necessary to perform tests of details or the auditor may decide to obtain audit evidence from a combination of tests. The various types of audit evidence of different quality and quantity available to the auditor, as well as the inter-relationship and contingent nature of the inter-relationship between tests of controls, substantive analytical procedures and tests of details, result in complex audit evidence gathering judgements being required from the auditor. The audit approach for each material class of transactions, account balance and disclosure will depend on the auditor's judgements about such considerations as efficiency and effectiveness, the assessment of internal control, the level of assurance required to reduce audit risk to an acceptably low level and the context within which the procedures are to be performed. (Causholli and Knechel 2012: 631; Houghton et al 2011: 484; Perry 2011: 5; Del Corte et al 2010: 477; Schmutte

and Duncan 2009: 32; Curtis and Turley 2007: 459; Hayes 2007: 58; Jeppesen 2007: 590; Knechel 2007: 389; Nelson et al 2005: 42, 48; Bedard and Graham 2002: 41)

5.10 CREDIBILITY OF THE INTEGRATED AUDIT EVIDENCE PLANNING MODEL

The overall objective of this study is to develop an integrated audit evidence planning model to quantify the extent of audit evidence. This was done by quantifying the overall levels of assurance in response to the auditor's risk assessment and quantitatively integrating the overall levels of assurance with the inter-related extent of tests of controls, substantive analytical procedures and tests of details in an objective, structured and logical manner. The model guides the auditor's judgement to obtain the level of assurance needed to draw conclusions about whether the financial statements are free from material misstatement, thereby enabling the auditor to express an opinion on the financial statements. The study is therefore focussed on the development of the integrated audit evidence planning model and not on the evaluation or testing thereof.

The principles of the model developed in this study have been applied in practice through incorporation of the model into the audit methodology of the AGSA. This practical implementation of the model lead to two secondary objectives of this study (secondary objectives 5 and 6 in section 1.3 of chapter 1); i.e. that the model is a practical tool to benefit the users thereof when conducting an audit and that it adheres to the requirements in the ISAs. This was done by way of an objective and unbiased assessment of the adherence of the model to the ISAs through the IRBA's practice review of the AGSA. This independent review of the model by the audit regulating body in South Africa against appropriate, established assessment criteria and standards, demonstrates the IRBA's support for the adherence and conformity

of the integrated audit evidence planning model with the ISA requirements and as a practical tool for implementing and applying the ISAs.

5.10.1 Quality control requirements

As discussed in section 2.5.2 of chapter 2, the IAASB issues international standards on quality control (ISQCs), auditing (ISAs), review (ISREs), other assurance (ISAEs) and related services (ISRSs); collectively referred to as the IAASB's engagement standards. These standards serve as a guideline for and measure of the quality of the auditor's performance and help to ensure that audits are conducted in a thorough and systematic way that produces reliable conclusions (Eilifsen et al 2010: 49).

ISQCs 1 Quality control for firms that perform audits and reviews of financial information, and other assurance and related services engagements became effective on 15 December 2005 and is applicable for all engagements falling under the IAASB's engagement standards. ISQC 1 sets out the audit firm's responsibilities for establishing and maintaining a system of quality control to provide reasonable assurance that professional standards and applicable legal and regulatory requirements are complied with and that reports issued by the firm are appropriate in the circumstances (IAASB 2014r: ISQC 1 par. 11). Therefore, audit quality embraces the concept of adhering to professional standards in performing the audit and expressing an opinion on audited financial statements. It aims to improve individual and firm performance and to ensure compliance with professional standards, both technical and ethical.

A firm's quality control system must address six specific elements; leadership responsibilities, ethical requirements, acceptance and continuance of client relationships and engagements, human resources, engagement performance, and monitoring (IAASB 2014r: ISQC 1 par. 16). Of these six elements, engagement performance is specifically concerned with the policies and

procedures that will provide the firm with reasonable assurance that engagements are performed in accordance with professional standards (IAASB 2014r: ISQC 1 par. 32). The engagement performance policies and procedures must also promote consistency in the quality of engagement performance (IAASB 2014r: ISQC 1 par. 32(a)) and ISQC 1.A32 (IAASB 2014r) clarifies that such consistency can be achieved through the use of manuals, tools, aids and/or standardised documentation (O'Reilly et al 1999: 55). Thus, it can be deduced that the use of a model, such as the integrated audit evidence planning model developed in this study, may contribute to the consistent audit engagement performance in accordance with professional standards, as envisaged in ISQC 1.

5.10.2 IRBA practice reviews

In contrast to ISQC 1 that promotes audit quality at audit firm level, the IRBA, as the regulatory body for the auditing profession in South Africa, is responsible for promoting the integrity of the South African auditing profession by conducting practice reviews (RSA 2005: sect. 4(1)). This responsibility is encapsulated in the IRBA's mission of protecting the financial interests of the South African public and investors in South Africa through the effective regulation of audits conducted by auditors in accordance with professional standards (IRBA 2011: 5). This is translated into practice through the IRBA's task of continuously maintaining and improving audit quality, which forms the foundation for the IRBA's review processes (IRBA 2014b). Practice reviews are performed under the statutory authority of section 47(a) of the Auditing Profession Act (RSA 2005):

Section 47(a): "The Regulatory Board ... may at any time inspect or review the practice of a registered auditor ..."

The IRBA's overall purpose with the practice reviews is to ensure users and stakeholders of the financial statements can rely on the financial information and that the appropriate audit reports are issued. More specifically, the objective is to inspect the auditors' work and their practices to monitor compliance with the professional standards. (IRBA 2011: 6)

The IRBA executes its responsibility to perform practice reviews through two processes; engagement reviews and practice reviews. At firm level, ISQC 1 is applied when performing the practice reviews in order to determine whether the audit firm is subject to an adequate system of quality control, is in compliance with that system, and has adhered to professional standards and applicable legal and regulatory requirements in performing audit engagements. (IRBA 2011: 3, Eilifsen et al 2010: 605) More specifically, the IRBA examines audit manuals, working papers and other documentation against the full scope of the auditing standards as part of its practice review process (IRBA 2014a).

The reviews performed by the IRBA benefit audit firms by helping them conform to the auditing standards, which, in turn, benefit the auditing profession through improved auditor performance and higher quality audits (Arens et al 2012: 38). By holding auditors to account a reputation for professional excellence and quality is achieved and maintained, as borne out by the findings of the WEF's (2014: 341) *2014-15 Global competitiveness report* in terms of which South Africa was once again ranked first amongst 148 countries for the strength of its auditing and reporting standards.

5.10.3 The IRBA's practice review of the AGSA

As indicated in chapter 4, the integrated audit evidence planning model presented in this study was developed by the author as part of her role as technical specialist in the Research and Development unit of the AGSA. As a result, the principles of the integrated audit evidence planning model developed

in this study have been incorporated into the audit methodology of the AGSA. This practical implementation of the model lead to two secondary objectives of this study (secondary objectives 5 and 6 in section 1.3 of chapter 1), namely an objective and unbiased assessment of the model as a practical tool for adherence to the ISAs through the IRBA's practice review of the AGSA.

In terms of section 13 of the Public Audit Act (RSA 2004), the AGSA must determine the standards to be applied in conducting audits, and accordingly has implemented the ISAs in its audit methodology (AGSA 2013a: 55). The AGSA announced in its 2010-13 *Strategic plan and budget* (AGSA 2010: 60) that it would, on a voluntary basis, utilise the services of the IRBA to perform a practice review to provide independent assurance of the AGSA's adherence to the ISQC 1 firm-level requirements, including the requirement to comply with the ISAs.

The outcome of the independent practice review performed by the IRBA indicated a satisfactory level of compliance with ISQC 1, as no material non-compliances with ISQC 1 were identified, as reported in the AGSA's *Integrated annual report 2012-13* (AGSA 2013a: 57). The IRBA's practice review confirmed that the AGSA's methodology, which incorporates the integrated audit evidence planning model developed in this study, adheres to the ISAs and that it is a practical tool for implementing and applying the ISAs (AGSA 2013b: 32).

Therefore, it can be concluded that the results of the IRBA's practice review provide confirmation from an external independent regulatory body that the integrated audit evidence planning model developed in this study is a practical tool that adheres to and complies with the ISAs. The IRBA's objective and unbiased assessment of the AGSA's audit methodology against appropriate, established assessment criteria and standards demonstrates the IRBA's support for the adherence of the integrated audit evidence planning model to the ISA requirements and as a practical tool for the implementation and

application of the ISAs by the auditor when conducting his audit, in line with secondary objectives 5 and 6 of this study, as referred to in section 1.3 of chapter 1.

5.11 CONCLUSION

The overall objective of the auditor in conducting an audit of financial statements is to obtain reasonable assurance about whether the financial statements are free from material misstatement, thereby enabling the auditor to express an opinion on the financial statements. Reasonable assurance is achieved when sufficient appropriate audit evidence has been gathered to reduce the risk of an inappropriate opinion being expressed on the financial statements to an acceptably low level. In order for the auditor to achieve this, the risk assessment and audit evidence gathering phases must be linked and audit procedures must be selected in appropriate combinations and sufficient extent to address the identified risks. The risk assessment should be an input to determine a compensatory inter-related combination of types of audit procedures that will provide a sufficient and appropriate level of assurance to reduce audit risk to an acceptably low level as basis for the audit opinion.

The ISAs acknowledge that various approaches may be used to accomplish the audit evidence planning decisions and judgements and that some auditors find a decision model, that expresses the general relationships in mathematical terms, useful when planning audit procedures. Consequently, a mathematical integrated audit evidence planning model that quantifies the extent of audit evidence and the inter-relation between the extent and combination of tests of controls, substantive analytical procedures and tests of details should provide the foundation for an efficient and effective audit.

The integrated audit evidence planning model developed in this study was deduced in stages by first examining the various alternative audit evidence

gathering approaches; i.e. the different combinations of tests of controls, substantive analytical procedures and tests of details, the varying extents of such procedures, together with the linkage or inter-relationship between the procedures. This resulted in an audit evidence mix matrix that allows for the audit opinion to be based on more than one type of audit evidence and for an overall conclusion to be reached based on the results of numerous inter-related procedures that are performed.

The extent of audit evidence gathered by the auditor should provide a level of assurance that is sufficient to reduce the risk of expressing an inappropriate opinion to an acceptably low level. As a next phase in developing the integrated audit evidence planning model, distinct overall levels of assurance of slight (= 1), standard (= 2) and significant (= 3) were derived that explained the link between the risk assessment and the levels of assurance required from audit evidence; i.e. the higher the audit risk, the greater the extent of audit evidence and the higher the level of assurance required. It, thereby highlighted the corollary between audit risk and assurance, that the measurement of the first provides specific guidelines for and serves as input to the quantification of the second, the extent of audit evidence.

Thereafter the compensatory relationship between the types of audit procedures (tests of controls, substantive analytical procedures and tests of details) was investigated. It was deduced that for a targeted overall level of assurance for a particular class of transactions, account balance, disclosure or assertion, there exists a compensatory relationship between the extent and types of audit procedures, such that as more assurance is obtained from one type, less assurance is required from other types. The development of the integrated audit evidence planning model then involved the deduction of the quantitative relationships between the distinct overall levels of assurance and the extent of assurance obtainable from the various possible audit evidence gathering combinations and the numerical links between the level of assurance

obtained from one type of procedure and the extent of audit evidence required from other types of procedures.

In the next step of developing the model all of the previously deduced concepts and principles, as described above, were schematically integrated and incorporated into one combined integrated audit evidence planning model. The model was supplemented with an assurance bucket analogy that helps to understand and visualise how the auditor should apply the integrated audit evidence planning model to direct the audit decisions and judgements regarding the appropriate audit approach to follow in obtaining sufficient appropriate audit evidence to support the audit opinion. The assurance bucket analogy illustrated that the results of the auditor's risk assessment procedures determine the size of the assurance bucket.

This was followed with an investigation of the link between the integrated audit evidence planning model and the extent of audit evidence derived from further audit procedures in order to demonstrate the impact of the model on the extent of audit evidence from tests of controls, substantive analytical procedures and tests of details. For substantive analytical procedures, the quantification of the extent of audit evidence was achieved by deriving quantitative precision intervals that assist the auditor in deciding whether the difference between the recorded amount and the expected amount is significant. The extent of tests of controls and tests of details to be performed in response to the auditor's risk assessment and desired levels of assurance was considered from the perspective of sampling and sample sizes. Professional judgement and knowledge of underlying statistical sampling theories, methods and assumptions were applied to quantitatively relate the integrated audit evidence planning model to non-statistical sample sizes for tests of controls and tests of details that are comparable to statistical sample sizes.

The development of the integrated audit evidence planning model was concluded by expanding the schematic illustration of the model to link the audit

decisions and judgements regarding the levels of assurance with the extent of tests of controls, substantive analytical procedures and tests of details that is needed in order to obtain sufficient appropriate audit evidence to support the audit opinion.

The integrated audit evidence planning model developed in this study is one approach to providing guidance for the auditor's judgement process; it is intended as an aid and not a substitute for the complex audit evidence gathering judgements required from the auditor. The integrated audit evidence planning model provides a framework for the flexible exercise of judgement that may enhance audit efficiency and effectiveness through the focus of audit procedures to respond to the assessed risks.

The chapter was concluded with a discussion on the incorporation of the principles of the model into the audit methodology of the AGSA that lead to two secondary objectives of this study (secondary objectives 5 and 6 in section 1.3 of chapter 1), namely that the model is a practical tool that adheres to the requirements in the ISAs. The IRBA's support for the adherence of the integrated audit evidence planning model to the ISA requirements and as a practical tool for the implementation and application of the ISAs was demonstrated through its practice review of the AGSA and the objective and unbiased assessment of the AGSA's audit methodology against appropriate, established assessment criteria and standards.

The chapter to follow provides a summary of the results of this study and makes a final conclusion thereon. A discussion of the contributions and benefits of the integrated audit evidence planning model developed in this study and an indication of possible areas for future research are also included.

CHAPTER 6: CONCLUSION

6.1 INTRODUCTION

The previous chapter, as the main focus of this study, derived the integrated audit evidence planning model in adherence with the auditing standards. This was achieved by interpreting and building on the relevant concepts, principles and deductions from the literature review through the stepwise application of logical reasoning. In this chapter the research results from the development of the integrated audit evidence planning model are recapped and summarised. The contributions and benefits of the integrated audit evidence planning model, as well as suggested areas for further research, are also explored. This is done with reference to the study's thesis statement and research objectives, as set out in chapter 1, and in line with the literature review findings in chapters 2 and 3.

The overall objective of an audit is to enhance the degree of confidence that the intended users have in the financial statements. This is achieved through the expression of an opinion by the auditor on whether the financial statements are prepared, in all material respects, in accordance with the applicable financial reporting framework. In support of the overall objective of the auditor when conducting an audit of financial statements, and as the basis for the audit opinion, the auditor is required to obtain reasonable assurance about whether the financial statements are free from material misstatement. Reasonable assurance is obtained when the auditor has obtained sufficient appropriate audit evidence to reduce to an acceptably low level the risk that the auditor expresses an inappropriate opinion on the financial statements. Audit evidence is necessary to support and forms the basis for the audit opinion and it is therefore central to the overall objective of an audit and it plays an essential role in the audit process.

6.2 CONTEXTUALISATION AND JUSTIFICATION

The importance of audit evidence is supported by the audit postulates. The audit postulates form the foundation for the consideration and resolution of practical problems through the development of the audit theory and standards that underlie the audit process. As such, they must be sufficient to prove all aspects of the theory for which they form the basis. It is therefore meaningful that both Mautz and Sharaf (1961: 49) in their original audit postulates, as well as Flint (1988: 22) in his revision of the original postulates, recognised the importance of audit evidence through explicit reference to audit evidence in the postulates by stating that financial statements and financial data are verifiable and that the subject matter of auditing can be verified by evidence.

The importance of audit evidence is also evident in the context of the need for an audit. The need for an audit is derived from Jensen and Meckling's (1976) agency theory and Freeman's (1984) stakeholder theory. The modern business environment is to a large extent characterised by the fact that full control of the organisation and the use of its resources vest in the managers. In these situations where the resources have been entrusted to the managers, there exist mistrust by the shareholders and stakeholders that the managers may not use the organisation's resources to the benefit of the shareholders and stakeholders. This places an accountability obligation on the managers in respect of the resources entrusted to them. To secure this accountability, it is not sufficient for management to merely produce reports on the results of their actions and their stewardship of the resources entrusted to them. For accountability to be effective an independent monitoring mechanism is needed, which leads to the demand for an independent auditor to evaluate the reports of the managers and to provide an opinion on the fair presentation of management's reports. In monitoring the fairness of the financial statements, the external auditor examines the relevant audit evidence that enables him to provide assurance that the financial reports fairly present management's

custody and use of the resources to the benefit of the shareholders and stakeholders.

The above discussion underlines the importance of audit evidence, as well as the auditor's purpose when performing the audit, which is to obtain sufficient appropriate audit evidence to reduce to an acceptably low level the risk that the auditor expresses an inappropriate opinion on the financial statements. Consequently, the concepts of audit evidence and risk are related. The assessed risks of material misstatement identified by the auditor determine the nature, timing and extent of audit procedures necessary to obtain sufficient appropriate audit evidence on which to base the audit opinion. This link between the risk assessment and audit evidence is expressed in the audit risk model; i.e. the higher the assessed risks, the more audit evidence is likely to be required to reduce to an acceptably low level the risk of expressing an inappropriate opinion on the financial statements. Therefore, the risk assessment phase of the audit should influence and direct the auditor's judgements regarding the extent of audit evidence necessary to support the audit opinion. The extent of audit procedures must be responsive to the identified risks and must further be adaptive to changes in risks. Despite the requirement that the nature, timing and extent of the further audit procedures performed by the auditor must be responsive to the assessed risks of material misstatement being entrenched in the ISAs, this is not demonstrated in practice. A number of studies conducted over the last 25 years have found that the association between the risk assessment and the extent of testing is weak or insignificant. Auditors generally do not adjust their audit evidence planning for identified risks and they do not maintain a responsive link between the assessed risks and the extent of further audit procedures. (Seidel 2014: 44; Luo 2011: 71; Allen et al 2006: 159; Fukukawa et al 2006: 41; Elder and Allen 2003: 1000; Johnstone and Bedard 2001: 199; Wright and Bedard 2000: 123; Glover, et al 2000: 27; Mock and Wright 1999: 55; Mock and Wright 1993: 39, 59; Bedard 1989: 57) These findings support one of this study's secondary

objectives (secondary objective 2 in section 1.3 of chapter 1), namely to quantitatively relate and integrate the extent of audit evidence in a logical and structured manner with the auditor's risk assessment and the required overall level of assurance needed to support the audit opinion.

The auditor's assessed risks not only impact the extent of further audit procedures, but also effect the combination of the procedures to be performed. The auditor has three types of further audit procedures at his disposal in order to respond to the assessed risks of material misstatement: tests of controls, substantive analytical procedures and tests of details. The principles underlying the audit risk model require the auditor to obtain audit evidence from different combinations of these types of procedures in order to address the assessed risks of material misstatement. The audit risk model further implies aggregating the different levels of evidence obtained from tests of controls, substantive analytical procedures and tests of details. Therefore, the auditor's assessment of the identified risks at assertion level should provide a basis for considering the appropriate combination of types of procedures and the aggregation of the levels of assurance obtained from performing those procedures. However, it is evident from the literature that the concept of aggregating evidence from different types and combinations of procedures is not well developed in practice. Previous studies have indicated that auditors disagree on how to aggregate audit evidence and that they remain uncomfortable and ineffective at integrating the levels of assurance derived from different types of procedures. There is little guidance on this matter in literature and the process of aggregating evidence from different types of procedures to come to a final audit opinion continues to be largely judgemental in practice. (Curtis and Turley 2007: 458; Knechel 2007: 390; Turley and Cooper 1991: 27; Srinidhi and Vasarhelyi 1986: 64) The above concerns regarding the aggregation of evidence from different types and combinations of procedures underline another of this study's objectives (secondary objective 3 in section 1.3 of chapter 1), which is to formulate a quantitative inter-relationship between the extent, combination and

aggregation of tests of controls, substantive analytical procedures and tests of details performed by the auditor to obtain reasonable assurance at the required overall level of assurance.

Evidence planning judgements are complex, multi-criteria decisions and making these decisions require significant professional judgement. The auditor weighs a number of criteria when planning the nature, timing and extent of audit procedures. Amongst these the auditor makes decisions regarding the different types and combinations of procedures to perform in response to the assessed risks of material misstatement, as discussed above. In making these decisions the appropriate application of professional judgement plays a crucial role. The ISAs acknowledge that the auditor may find a model useful for the application of professional judgement when planning the nature, timing and extent of audit procedures necessary to obtain sufficient appropriate audit evidence. The ISAs further recognise that such a model may express the general relationships between the components of the model in a structured mathematical manner. The use of such a model is supported in literature. Prior research has found that there is a growing trend towards increasing structure in audit decision-making, with an emphasis on the use of structured audit methodologies. A structured audit methodology includes the use of decision models that improve the quality of audit judgements. The concepts of a structured audit approach and decision models have been employed extensively in practice and many audit firms have revised their audit methodologies towards greater structure. (Charles et al 2010: 19; Curtis and Turley 2007: 442; Smith et al 2001: 40; Bowrin 1998: 41; Cushing and Loebbecke 1986: 1; Kinney 1986: 74, 75; Sullivan 1984: 62) A structured audit methodology should present a specific and comprehensive frame of reference to be used for decision-making on an audit, with different areas of the audit clearly related to one another, with a predetermined way of proceeding, and with a clear pattern of organisation. It should provide a framework for the flexible exercise of professional judgement that aids the auditor in exercising complex, multi-dimensional evidence planning judgements

and allows the audit strategy and plan to be adapted to the unique characteristics of the client. (MacLulich 2003: 807; Wright and Mock 1988: 113; Cushing and Loebbecke's 1986: 32; Sullivan 1984: 62) This discussion highlights two further objectives of this study (secondary objectives 1 and 4 in section 1.3 of chapter 1), which is to provide a model that expresses in quantitative terms the extent of audit evidence needed by the auditor to obtain sufficient audit evidence to arrive at the conclusions on which the audit opinion is based, and that influences and guides the flexible exercise of professional judgement by the auditor, thereby assisting in achieving better consistency in the manner in which audit staff apply their professional judgement across a particular audit firm. It therefore underpins and forms the basis for the overall objective of this study; the development of an integrated audit evidence planning model to quantify the extent of audit evidence.

6.3 SUMMARY OF THE STUDY

As discussed in the introduction, the auditor is required to obtain sufficient appropriate audit evidence as a basis for the audit opinion about whether the financial statements are free from material misstatement. The auditor has three types of further audit procedures at his disposal in order to respond to the assessed risk that the financial statements contain material misstatements: tests of controls, substantive analytical procedures and tests of details. The audit plan sets out the different combinations of the types of audit procedures, and the extent to which such procedures are to be performed, to obtain sufficient appropriate audit evidence to support the audit opinion. However, the application of a standard combination of types and extent of procedures to all classes of transactions, account balances, disclosures and assertions will generally not be responsive to different risks of material misstatement and it will not provide a clear linkage between the risk assessment and the nature, timing and extent of further audit procedures.

Thus, as a first step in developing the integrated audit evidence planning model, the various alternative audit evidence gathering approaches; i.e. the different combinations of types of audit procedures (tests of controls, substantive analytical procedures and tests of details), the varying extents of such procedures, as well as the linkage and inter-relationship between the procedures, were examined. This resulted in a simplified schematic network that diagrammatically illustrates the alternative audit evidence gathering approaches regarding different inter-related combinations of tests of controls, substantive analytical procedures and tests of details, and the varying extents of such procedures that the auditor can employ to obtain sufficient appropriate audit evidence to support the audit opinion. The choice of which types of audit procedures (tests of controls, substantive analytical procedures and tests of details) to use and how extensively they need to be performed can vary widely across different classes of transactions, account balances, disclosures and assertions and this variation in the different combinations of procedures resulted in the deduction of the audit evidence mix matrix. Further, the assurance bucket analogy was introduced to visualise the audit evidence mix matrix as a means of understanding how the auditor decides on the proper mix of audit evidence.

The auditor needs to obtain sufficient appropriate audit evidence to reduce the risk that the financial statements may be materially misstated, and therefore the risk that the auditor may express an inappropriate audit opinion, to an acceptably low level. In order to obtain sufficient appropriate audit evidence, the auditor designs the nature, timing and extent of further audit procedures to be based on and to respond to the assessed risk of material misstatement at the class of transactions, account balance, disclosure and assertion level. Consequently, as a next step in deducing the integrated audit evidence planning model, the link between the extent of audit evidence gathered by the auditor and the sufficiency of the level of assurance that it provides to reduce the risk of expressing an inappropriate opinion to an acceptably low level, was explored. Three distinct levels of assurance of slight (= 1), standard (= 2) and

significant (= 3) were deduced for incorporation in the integrated audit evidence planning model. This quantification of the assurance levels directly influences the extent of audit evidence; it provides a clear linkage and quantitatively integrates the risk assessment with the levels of assurance required from performing audit procedures that will reduce audit risk to an acceptably low level and will result in sufficient appropriate audit evidence on which to base the audit opinion. The assurance bucket analogy was again employed to illustrate that the size of the assurance bucket to be filled with audit evidence, and therefore the extent of audit evidence required from tests of controls, substantive analytical procedures and tests of details, will increase the higher the assessed risk of material misstatement.

The link between the assessed risks of material misstatement and the overall level of assurance required to reduce the risk of expressing an inappropriate audit opinion to an acceptably low level, led to the investigation of the compensatory relationship between the types of audit procedures (tests of controls, substantive analytical procedures and tests of details). It was deduced that for a targeted overall level of assurance for a particular class of transactions, account balance, disclosure or assertion, there exists a compensatory inter-relationship between the extent and types of audit procedures, such that as more assurance is obtained from one type, less assurance is required from other types. In addition, the extent of audit evidence required from one type of procedure varies with the risk that other types of procedures will fail to detect a material misstatement, thereby failing to provide the necessary overall level of assurance. Thus, the model incorporates the aggregation of the different levels of audit evidence obtained from the various combinations of tests of controls, substantive analytical procedures and tests of details. The extent of audit evidence required from tests of controls, tests of details and substantive analytical procedures is directly influenced by the auditor's assessment of risk and by the desired level of assurance.

Having established the compensatory inter-relationship between the different combinations and types of audit procedures (tests of controls, substantive analytical procedures and tests of details), the next phase in deriving the integrated audit evidence planning model involved quantitatively relating the extent or levels of assurance from the various procedures to each other as well as to the three distinct overall levels of assurance (slight (= 1), standard (= 2) and significant (= 3)). This was achieved by updating and enhancing the audit evidence mix matrix to numerically associate each of the three distinct overall levels of assurance with quantified levels of assurance from tests of controls, substantive analytical procedures and tests of details for all of the possible combinations of these procedures. The numerical levels of assurance were defined in increments of 1 assurance level, such that the sum of the levels of assurance derived from the permissible combinations of tests of controls, substantive analytical procedures and tests of details equates to the three distinct overall levels of assurance. Thus, the integrated audit evidence planning model quantitatively relates the three distinct overall levels of assurance to the extent of assurance obtainable from the various possible audit evidence gathering combinations of tests of controls, tests of details and substantive analytical procedures, and numerically links the level of assurance obtained from one type of procedure to the extent of audit evidence required from other types of procedures in order to provide the targeted overall level of assurance on which the audit opinion is based.

Thereafter, all of the previously deduced concepts and principles were schematically integrated and incorporated into one combined integrated audit evidence planning model. The visualisation of the model illustrates how the auditor should apply the integrated audit evidence planning model to direct the audit planning decisions and judgements on the appropriate audit approach to follow in obtaining sufficient appropriate audit evidence to support the audit opinion. The model quantitatively links the integration of the risk assessment with the numerical levels of assurance required from performing different

combinations of types of audit procedures that will result in sufficient appropriate audit evidence on which to base the audit opinion, thereby directly influencing the extent of audit evidence.

The model developed thus far was extended to demonstrate the impact thereof on the extent of audit evidence from tests of controls, substantive analytical procedures and tests of details. The extent of audit evidence required from tests of controls, substantive analytical procedures and tests of details must be directly influenced by the risk assessment and the desired level of assurance. As such, a quantitative link between the distinct levels of assurance comprising the integrated audit evidence planning model, and the quantification of the extent of tests of controls, substantive analytical procedures and tests of details, was established. In expanding the integrated audit evidence planning model to incorporate the extent of substantive analytical procedures, the two distinct levels of assurance (slight (= 1) and standard (= 2)) permissible for substantive analytical procedures, corresponding to risk percentages of 37% and 14%, respectively, were used to quantify the extent of audit evidence from substantive analytical procedures. Two different quantitative precision intervals for the slight (= 1) and standard (= 2) assurance levels were derived by applying the risk percentages of 37% and 14% to materiality, thereby quantitatively relating the two distinct assurance levels for substantive analytical procedures to the extent of such procedures.

Next, the impact of the integrated audit evidence planning model on the extent of tests of controls and tests of details was explored. This was achieved by considering the extent of such procedures from the perspective of sampling. Professional judgement and knowledge of underlying statistical sampling theories, methods and assumptions were applied to quantitatively relate the integrated audit evidence planning model to the extent of audit evidence from tests of controls and tests of details by means of sample sizes. The distinct levels of assurance (slight (= 1) and standard (= 2)) permissible for tests of controls in terms of the integrated audit evidence planning model were used to

derive a sample size table that quantitatively links the extent, and specifically the sample sizes for tests of controls, to the integrated audit evidence planning model. Similarly for tests of details, a simple formula approach (sample size = recorded population amount x level of assurance ÷ materiality) is applied in order to determine sample sizes for tests of details that are quantitatively linked to the three distinct overall levels of assurance (slight (= 1), standard (= 2) and significant (= 3)) permissible for tests of details. It was thereby demonstrated that the integrated audit evidence planning model links the required levels of assurance to the extent of audit evidence needed from both tests of controls and tests of details; i.e. more extensive testing and larger sample sizes for tests of controls and tests of details follow the higher the required level of assurance.

The development of the integrated audit evidence planning model was concluded by expanding the initial schematic illustration of the model to also illustrate the quantitative link that was established between the distinct levels of assurance comprising the integrated audit evidence planning model and the extent of audit evidence from tests of controls, substantive analytical procedures and tests of details. This visualisation of the model demonstrates the impact of the model on the audit planning decisions and judgements regarding the integration of the risk assessment with the quantification of the levels of assurance and the quantitative link with the extent of further audit procedures that is needed in order to obtain sufficient appropriate audit evidence to support the audit opinion.

The objective of this study is to develop an integrated audit evidence planning model; it is not intended to focus on the evaluation or testing thereof. However, the principles of the integrated audit evidence planning model were applied in practice through incorporation of the model into the audit methodology of the AGSA. This practical implementation of the model lead to the model being subjected to an objective and unbiased assessment through the IRBA's practice review of the AGSA audit methodology. The IRBA's practice review provided confirmation from an external independent regulatory body that the integrated

audit evidence planning model developed in this study adheres to and complies with the ISAs and that it is a practical tool for the implementation of the ISAs by the auditor when conducting his audit, thereby lending credibility to the model.

To conclude, the integrated audit evidence planning model can be viewed as deriving overall levels of assurance from different combinations and types of audit evidence, consistent with and in response to the assessed risks of material misstatement. The overall levels of assurance and the relative assurance drawn from the different combinations and types of audit procedures are expressed in quantitative terms. The model uses the cumulative nature of audit evidence and the compensatory inter-relationship between the various types of procedures to aggregate the distinct levels of assurance from tests of controls, substantive analytical procedures and tests of details to obtain the desired overall level of assurance. Thus, the integrated audit evidence planning model quantitatively indicates the extent of tests of controls, substantive analytical procedures and tests of details in an objective, structured and logical manner that quantitatively relates to and integrates with the risk assessment and overall levels of assurance. The model is a practical tool and flexible framework for the complex audit evidence gathering judgements required from the auditor.

The preceding summary explains how the secondary objectives of this study, as recapped below from section 1.3 of chapter 1, were addressed, thereby demonstrating that the overall objective of the study, the development of an integrated audit evidence planning model to quantify the extent of audit evidence, was achieved:

- *Secondary objective 1:* The model expresses in quantitative terms the extent of audit evidence needed by the auditor to obtain sufficient audit evidence to arrive at the conclusions on which the audit opinion is based.

- *Secondary objective 2:* The model quantitatively relates and integrates the extent of audit evidence in a logical and structured manner with the auditor's risk assessment and the required overall level of assurance needed to support the audit opinion.
- *Secondary objective 3:* The model formulates a quantitative inter-relationship between the extent, combination and aggregation of tests of controls, substantive analytical procedures and tests of details performed by the auditor to obtain reasonable assurance at the required overall level of assurance.
- *Secondary objective 4:* The model provides a framework for influencing and guiding the flexible exercise of professional judgement by the auditor, thereby assisting in achieving better consistency in the manner in which audit staff apply their professional judgement across a particular audit firm.
- *Secondary objective 5:* The model is a practical and effective tool to benefit the users thereof when conducting an audit, thereby removing some of the uncertainty and guesswork from the audit process.
- *Secondary objective 6:* The model adheres to the requirements in the ISAs.

6.4 CONTRIBUTION AND BENEFITS

At an overall level, the outcome and contribution of this study to the existing body of auditing knowledge is an integrated audit evidence planning model to quantify the extent of audit evidence. This outcome was achieved by employing two inductive qualitative research approaches, (1) literature review and (2) grounded theory model building, in combination in order to develop the model. Thus, the outcome of the study agrees with the objective thereof, as set out and explained in section 1.4 of chapter 1, where it was hypothesised that:

“The extent of audit evidence can be quantified in an integrated audit evidence planning model that provides a framework for the flexible exercise of judgement, by taking into account the inter-relationship between the extent and aggregation of tests of controls, substantive analytical procedures and tests of details, and quantitatively relating and integrating the extent of audit evidence in a logical and structured manner with the auditor’s risk assessment and the overall level of assurance needed to draw conclusions about whether the financial statements are free from material misstatement and thereby enabling the auditor to express an opinion on the financial statements.”

In line with the hypothesis in the above thesis statement, as well as the research objectives discussed in section 1.3 of chapter 1 and highlighted at the end of the previous section, the various benefits and contributions of the integrated audit evidence planning model developed in this study to the existing auditing literature, theory and practice are concluded on in more detail as follows:

- *The model quantitatively integrates the extent of audit evidence with the assessed risks of material misstatement (secondary objective 2):* Risk assessment and audit evidence planning are integrated processes and the auditor’s assessment of risks should inform the audit evidence gathering decisions regarding the nature, timing and extent of the audit procedures that are necessary to obtain sufficient appropriate audit evidence on which to base the audit opinion. Thus, the integrated audit evidence planning model establishes a quantitative relationship between the assessed risk of material misstatement and the level of assurance required from audit evidence that will enable the auditor to express an opinion on the financial statements at an acceptably low level of audit risk. The model quantitatively captures that the higher the risk of material misstatement,

the greater the extent of audit evidence and the higher the level of assurance required to reduce audit risk to an acceptably low level.

- *The extent of audit evidence quantitatively links to sample sizes for tests of controls and tests of details, and precision levels for substantive analytical procedures (secondary objective 1):* By establishing this inter-relationship between the evaluation of risks of material misstatement and the assurance that is required from audit work to reduce audit risk an acceptably low level, the integrated audit evidence planning model focuses more attention and an increased extent of audit work on high risk areas. The model achieves this quantitative linkage to an increased extent of further audit procedures by means of increasing sample sizes for tests of controls and tests of details and by performing substantive analytical procedures at more precise levels. In this manner the model responds to the earlier literature studies (refer to sections 3.5.3 and 3.5.4 of chapter 3) that found no clear correlation between evidence planning and extent of testing and the level of, or changes in risks (e.g. Seidel 2014: 44; De Martinis et al 2011: 546; Luo 2011: 71; Hogan and Wilkins 2008: 238; Fukukawa et al 2006: 41; Elder and Allen 2003: 1000; Johnstone and Bedard 2001: 199).
- *Three distinct quantitative overall levels of assurance guide the extent of audit evidence (secondary objective 1):* The model defines and uses three distinct overall levels of assurance to quantitatively direct and influence the audit decisions and judgements about the extent of further audit procedures in an objective, structured and logical manner that quantitatively relates to and integrates with the auditor's risk assessment. The model therefore guides the auditor to obtain sufficient appropriate audit evidence at the following three distinct overall levels of assurance needed to respond to the assessed risks of material misstatement that will

enable the auditor to express an opinion on the financial statements at an acceptably low level of audit risk.

- Slight (63%) level of assurance = 1:

If the class of transactions, account balance or disclosure is not material by value or nature and does not require special audit consideration to respond to the assessed risk of material misstatement at the assertion level, this is the level of audit evidence that should be obtained.

- Standard (86%) level of assurance = 2:

A standard level of audit evidence is needed if the class of transactions, account balance or disclosure is material by value and/or nature and does not require special audit consideration to respond to the assessed risk of material misstatement at the assertion level.

- Significant (95%) level of assurance = 3:

This is the level of audit evidence that is required if the class of transactions, account balance or disclosure is material by value and/or nature and, in the auditor's judgement, requires special audit consideration to respond to the assessed risk of material misstatement at the assertion level.

- *The model incorporates all the available audit evidence gathering approaches regarding different combinations and types of audit procedures (secondary objective 3):* In order to obtain sufficient appropriate audit evidence in response to the assessed risks of material misstatement the integrated audit evidence planning model employs various combinations of types of audit procedures; i.e. tests of controls, substantive analytical procedures and tests of details. Thus, the model

enables the auditor to obtain assurance from different types of evidence in response to the assessed risks by illustrating a simplified network of all the different audit evidence gathering options available to the auditor in terms of the ISA requirements. That is, the model shows the different approaches that the auditor can employ to obtain sufficient appropriate audit evidence in support of the audit opinion, with alternative approaches referring to the audit evidence mix of different combinations of types of audit procedures (tests of controls, substantive analytical procedures and tests of details). Therefore, the integrated audit evidence planning model aids the auditor to respond to the question of how much to test, thereby responding to conclusions in the literature that there is an increasing need for guidance in the determination of the extent of testing (Seidel 2014: 2; Charles et al 2010: 15 - 18; Fogarty and Rigsby 2010: 304, 315; Hayes 2007: 58; Bierstaker et al 2006: 2; Kinney 2005: 106; CICA 1980: 3). In addition, the model assists the auditor to select a combination of types of audit procedures that not only adheres to the ISA requirements, but that may positively impact the efficiency and effectiveness of obtaining the extent of audit evidence required to limit the risk of material misstatement of the financial statements to an acceptably low level.

- *The compensatory inter-relationship between further audit procedures is incorporated in the model (secondary objective 3):* The integrated audit evidence planning model demonstrates that the audit evidence obtained from each of the types of audit procedures (tests of controls, substantive analytical procedures and tests of details) is potentially just a part of the total audit evidence that the auditor obtains on which to base his opinion. That is, an overall conclusion is reached based on the results of numerous inter-related procedures that are performed. The integrated audit evidence planning model expresses this cumulative nature of audit evidence and the compensatory inter-relationship between the various types of procedures, such that as more assurance is obtained from one type of

procedure, less assurance is required from other types at a targeted overall level of assurance. Therefore, the model clarifies the various types of audit evidence, of different quality and quantity available to the auditor, and demonstrates the qualitative inter-relationship between and contingent nature of tests of controls, substantive analytical procedures and tests of details in the audit planning decisions that are required in response to the risk assessment.

- *The levels of assurance from the different types of audit procedures are quantified and aggregated to the three overall levels of assurance (secondary objective 3):* In addition to establishing the qualitative nature of the compensatory inter-relationship between types of audit evidence, the model also quantitatively integrates the relative assurance being drawn from varying amounts (extent) of audit evidence and different types of audit procedures. That is, the integrated audit evidence planning model quantitatively links the level of assurance obtained from one type of procedure to the extent of audit evidence required from other types of procedures, by quantifying the extent and aggregation of tests of controls, substantive analytical procedures and tests of details, in response to the assessed risks. The model further quantitatively relates the extent of assurance required from each type of procedure (tests of controls, substantive analytical procedures and tests of details) to the distinct overall levels of assurance comprising the integrated audit evidence planning model. Therefore, the model quantitatively associates each of the three distinct overall levels of assurance with all the possible audit evidence gathering combinations and types of procedures (tests of controls, substantive analytical procedures and tests of details) and numerically links the level of assurance obtained from one type of procedure to the extent of audit evidence required from other types of procedures. This quantification in the integrated audit evidence planning model of the overall levels of assurance, as well as the levels of assurance

from the various combinations of tests of controls, substantive analytical procedures and tests of details, directly influences the extent of audit evidence; it quantitatively links the integration of the risk assessment with the level of assurance required from performing audit procedures that will result in sufficient appropriate audit evidence on which to base the audit opinion. In so doing the model answers the question that arose from the literature reviewed in section 3.5.3 of chapter 3 on how to combine or aggregate evidence from different types of procedures (tests of controls, substantive analytical procedures and tests of details) (e.g. Knechel 2007: 390; Turley and Cooper 1991: 27; Srinidhi and Vasarhelyi 1986: 64) in order to reach a final audit opinion.

- *The model provides a framework to guide the auditor's judgements regarding the audit evidence gathering decisions (secondary objective 4):* As is evident from the above, the integrated audit evidence planning model clarifies the audit evidence decision sequences, inter-relationships and contingent dependencies of the different audit procedures and quantifies the compensatory inter-relationships between the types of audit procedures and the desired overall levels of assurance in response to the assessed risks of material misstatement. The model guides the auditor's judgement processes in planning and implementing the audit evidence gathering decisions and approaches necessary to obtain sufficient appropriate audit evidence on which to base the audit opinion. The model directs the complex audit evidence gathering judgements required from the auditor, but is not a substitute for professional judgement. Rather, the integrated audit evidence planning model provides a framework to influence and guide the flexible exercise of judgement on the formulation of the audit plan regarding the extent, types and combinations of audit procedures necessary to gather sufficient appropriate audit evidence to enhance audit efficiency and effectiveness through the focus of audit procedures to respond to the assessed risks, thus assisting in achieving

better consistency in the manner in which audit staff apply their professional judgement across a particular audit firm. Although audit decision-making cannot be reduced to the mechanical application of a quantitative model and will always require the application of considerable judgement, studies (refer to section 3.6 of chapter 3), have suggested that decision models that aid the auditor in exercising complex, multi-dimensional evidence planning judgements may improve audit efficiency and effectiveness (e.g. Curtis and Turley 2007: 459; Jeppesen 2007: 590; Knechel 2007: 389; Nelson et al 2005: 53; Bedard and Graham 2002: 41). The integrated audit evidence planning model developed in this study responds to this need to develop and communicate over-arching principles to guide the auditor as he makes these difficult and complex evidential planning decisions and further responds to Perry's (2011: 12) calls for stricter guidelines that provide more structure and detail as to the nature and extent of evidence the auditor should collect in order to reach an audit conclusion. (Refer to section 3.2.2 of chapter 3.)

- *The model systematically guides the auditor's decisions regarding the various audit evidence gathering processes (secondary objective 4):* The integrated audit evidence planning model provides an objective and structured aid that is adaptive rather than rigid. It offers a logical and practical tool within which the evidence planning judgements can be applied and that will benefit the users thereof when conducting an audit, thereby removing some of the uncertainty and guesswork from the audit process. This is achieved by organising different variables and combining them into a logical approach that will enable auditors to make integrated audit evidence planning decisions regarding the extent of different types of audit procedures, as well as the combinations of tests of controls, substantive analytical procedures and tests of details that correlate to the assessed risk at the relevant class of transactions, account balance, disclosure and assertion level, thereby enabling the auditor to draw

reasonable conclusions on which to base the audit opinion. In line with Rohrmann's (1986: 363, 365) definition of a decision aid, the integrated audit evidence planning model is "an explicit procedure for the generation, evaluation and selection of alternative courses of action that is designed for practical application and multiple uses. It makes decisions easier and better because it decomposes the decision process into comprehensible parts, reveals goals and preferences, guides information search and integration and is based on a rational concept for the comparison, evaluation and selection of alternatives". The literature review in section 3.6 of chapter 3 pointed out that many audit firms have revised their audit methodologies towards greater structure and formalisation in order to recognise the audit as an integrated process (e.g. Charles et al 2010: 19; Curtis and Turley 2007: 441 - 444; Smith et al 2001: 40). Therefore, the use of a decision aid, such as the integrated audit evidence planning model developed in this study, is consistent with current auditing practice.

- *The model is a practical tool for adhering to the ISA requirements (secondary objectives 5 and 6):* The integrated audit evidence planning model, as a practical tool, was incorporated into the audit methodology of the AGSA. The model is based on direct application of the auditing standards and adheres to and complies with the requirements in the ISAs. This is evidenced by the IRBA's objective and unbiased assessment of the model against appropriate, established assessment criteria and standards, through the IRBA's practice review of the AGSA's audit methodology.
- *The model provides a practical application of the ISA 200.A36 (IAASB 2014c) requirement that the auditor may use an audit evidence planning model (secondary objectives 5 and 6):* Taking cognisance of all of the above, the integrated audit evidence planning model also responds to the lack of practical implementation principles in the ISAs to assist the auditor in deciding the extent of further audit procedures that should be carried out

to obtain sufficient appropriate audit evidence in order to get reasonable assurance on the fair presentation of the financial statements before issuing an audit opinion thereon. ISA 200.A36 (IAASB 2014c) acknowledges that various approaches may be used to accomplish the audit evidence planning decisions and judgements and states that the auditor may make use of a model that expresses the general relationship of the components of audit risk in mathematical terms and that auditors may find such a model to be useful when planning audit procedures. However, the auditing standards are silent on how to design such a mathematical approach and provide no further guidance on how to implement such a quantitative model. The integrated audit evidence planning model developed in this study is one approach to providing practical application guidance in response to the ISA 200 (IAASB 2014c: par. A36) requirement in order to direct the auditor's judgements to decide how to relate the risk assessment to the evidence planning decisions, as well as bringing together the audit test results in a way that can be used in the decision-making process about whether sufficient appropriate audit evidence has been obtained to draw conclusions about whether the financial statements are free from material misstatement as basis for the audit opinion.

6.5 SUGGESTIONS FOR FURTHER RESEARCH

The results, benefits and contributions of this study, as discussed in the preceding sections, point to several promising areas for future research and the results of this study may be extended along both theoretical and practical avenues.

From a theoretical point of view further research may usefully be directed at refining the integrated audit evidence planning model developed in this study in order to construct a more complex model. The integrated audit evidence

planning model may be expanded for additional ISA requirements, as well as more levels of variables, and may also explore further elements of the audit process, as follows:

- The integrated audit evidence planning model developed in this study is set at the point in time after the assessment of risk at the relevant class of transactions, account balance, disclosure and assertion level. Future research could expand the model to also consider the risk assessment phase of the audit.
- The integrated audit evidence planning model that is the outcome of this study is specifically concerned with quantifying the extent or sufficiency of the audit evidence required that will enable the auditor to express an opinion on the financial statements. Further studies may enhance the model to include consideration of the nature and/or appropriateness of audit evidence.
- The integrated audit evidence planning model did not consider the timing of audit procedures. Further research may be undertaken to enhance the model to allow for performing interim audit procedures and obtaining audit evidence from both tests of controls and substantive procedures at an interim date. Further enhancements of the model could also provide for the use of audit evidence about the operating effectiveness of controls obtained in previous audits over a three-year cycle as part of the extent of audit evidence required in the current year.

This study was focussed on the development of the integrated audit evidence planning model and not on the practical evaluation or testing thereof. Consequently, there is also the potential and opportunity for future research to investigate a number of practical aspects, for example:

- Comparative analysis may be carried out to compare the integrated audit evidence planning model to the risk response approaches applied by

different audit firms in order to assess its similarity or dissimilarity regarding, for example, quality or detailed nature.

- Evaluation and/or experimental research may be undertaken to investigate and evaluate whether the practical application of the integrated audit evidence planning model results in the extent of audit evidence being responsive to the assessed risks of material misstatement, as well as being adaptive to changes in risks during the audit process, which is catered for in the integrated audit evidence planning model by means of the assurance bucket analogy.
- Further experimental, survey and/or evaluation research may also be carried out to assess and examine the effect and outcome of the practical implementation and use of the integrated audit evidence planning model; for example:
 - the influence on improved auditing practices and processes
 - the impact on increased audit efficiency and effectiveness
 - the result on better audit quality and outcomes
 - the achievement of enhanced consistency across a particular audit firm
 - the effect on the application of professional judgement

All of the above are fruitful areas for future research and are issues worthy of further investigation that may lead to more efficient and effective audits, particularly in light of the fact that the auditor is faced with growing user expectations, an ever more regulated auditing environment, both in terms of onerous legislative and auditing standard requirements, conflicting pressures of escalating audit costs and rising price competition and increased sensitivity to audit litigation and adverse press.

6.6 CONCLUSION

The integrated audit evidence planning model developed in this study can be used by the auditor to quantitatively influence and guide the extent of tests of controls, substantive analytical procedures and tests of details in an objective, in a structured and logical manner that quantitatively relates to and integrates with the auditor's risk assessment and overall levels of assurance, guiding the auditor to obtain the level of assurance needed to draw conclusions about whether the financial statements are free from material misstatement and thereby enabling the auditor to express an opinion on the financial statements. The model provides the auditor with a framework for the flexible exercise of professional judgement to formulate the audit plan regarding the extent, combinations and types of audit procedures necessary to gather sufficient appropriate audit evidence by focusing the audit procedures to respond to the assessed risks of material misstatement. The integrated audit evidence planning model is a practical, ISA-adhered tool to benefit the users thereof when conducting an audit.

To end this study with, the author would like to quote the following passage from *The ethics of belief* by William Kingdon Clifford (1877: 294):

“... if I let myself believe anything on insufficient evidence, there may be no great harm done by the mere belief; it may be true after all, or I may never have occasion to exhibit it in outward acts. But I cannot help doing this great wrong towards Man, that I make myself credulous. The danger to society is not merely that it should believe wrong things, though that is great enough; but that it should become credulous, and lose the habit of testing things and inquiring into them; for then it must sink back into savagery.”

ADDENDUMS

ADDENDUM A: APPROVAL FOR THE USE OF AGSA WORK



AUDITOR-GENERAL
SOUTH AFRICA

26 November 2010

Dear Shelmadene and Jan

Approval for use of AGSA work for DCom studies

I have registered for a DCom degree in auditing with Unisa.

As discussed previously, I would like to base my thesis on the research and development work I did on the risk response phase of the audit methodology, as included in the R2: Risk response guide.

I would like to request formal written permission from the AGSA to use this work for my DCom degree and would appreciate your approval in this regard.

Yours sincerely

Marian Mentz

Recommended



Shelmadene Petzer (Acting Business Executive: ARD)

Not recommended

29/11/2010

Date

Approved



Jan van Schalkwyk (Corporate Executive)

Not approved

29/11/2010

Date

ADDENDUM B: STATISTICAL SAMPLE SIZES – SIGNIFICANT (= 3) 95% LEVEL OF ASSURANCE

Expected deviation rate	Sample size (Number of expected errors)									
	Tolerable deviation rate									
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
0.00%	300 (0)	150 (0)	100 (0)	75 (0)	60 (0)	50 (0)	43 (0)	38 (0)	34 (0)	30 (0)
0.25%	631 (2)	238 (1)	159 (1)	119 (1)	95 (1)	80 (1)	68 (1)	60 (1)	53 (1)	48 (1)
0.50%	1185 (6)	316 (2)	159 (1)	119 (1)	95 (1)	80 (1)	68 (1)	60 (1)	53 (1)	48 (1)
0.75%	4527 (34)	388 (3)	211 (2)	119 (1)	95 (1)	80 (1)	68 (1)	60 (1)	53 (1)	48 (1)
1.00%	-	593 (6)	259 (3)	158 (2)	95 (1)	80 (1)	68 (1)	60 (1)	53 (1)	48 (1)
1.25%	-	1034 (13)	306 (4)	158 (2)	127 (2)	80 (1)	68 (1)	60 (1)	53 (1)	48 (1)
1.50%	-	2264 (34)	395 (6)	194 (3)	127 (2)	106 (2)	90 (2)	60 (1)	53 (1)	48 (1)
1.75%	-	-	566 (10)	263 (5)	156 (3)	106 (2)	90 (2)	79 (2)	53 (1)	48 (1)
2.00%	-	-	850 (17)	297 (6)	184 (4)	130 (3)	90 (2)	79 (2)	71 (2)	48 (1)
2.25%	-	-	1510 (34)	393 (9)	211 (5)	130 (3)	111 (3)	79 (2)	71 (2)	64 (2)
2.50%	-	-	-	517 (13)	237 (6)	153 (4)	111 (3)	79 (2)	71 (2)	64 (2)
2.75%	-	-	-	727 (20)	289 (8)	176 (5)	131 (4)	97 (3)	71 (2)	64 (2)
3.00%	-	-	-	1132 (34)	365 (11)	198 (6)	131 (4)	97 (3)	87 (3)	64 (2)
3.25%	-	-	-	-	487 (16)	241 (8)	151 (5)	115 (4)	87 (3)	78 (3)
3.50%	-	-	-	-	652 (23)	283 (10)	170 (6)	132 (5)	102 (4)	78 (3)
3.75%	-	-	-	-	906 (34)	345 (13)	207 (8)	132 (5)	102 (4)	78 (3)
4.00%	-	-	-	-	-	425 (17)	225 (9)	149 (6)	117 (5)	92 (4)
4.25%	-	-	-	-	-	563 (24)	278 (12)	181 (8)	117 (5)	92 (4)
4.50%	-	-	-	-	-	755 (34)	330 (15)	197 (9)	132 (6)	106 (5)
4.75%	-	-	-	-	-	-	399 (19)	228 (11)	147 (7)	119 (6)
5.00%	-	-	-	-	-	-	499 (25)	259 (13)	175 (9)	119 (6)
6.00%	-	-	-	-	-	-	-	566 (34)	297 (18)	183 (11)
7.00%	-	-	-	-	-	-	-	-	642 (45)	326 (23)
8.00%	-	-	-	-	-	-	-	-	-	-

(Source: ACL (2007))

ADDENDUM C: STATISTICAL SAMPLE SIZES – STANDARD (= 2) 86% LEVEL OF ASSURANCE

Expected deviation rate	Sample size (Number of expected errors)									
	Tolerable deviation rate									
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
0.00%	197 (0)	99 (0)	66 (0)	50 (0)	40 (0)	33 (0)	29 (0)	25 (0)	22 (0)	20 (0)
0.25%	347 (1)	174 (1)	116 (1)	87 (1)	70 (1)	58 (1)	50 (1)	44 (1)	39 (1)	35 (1)
0.50%	740 (4)	174 (1)	116 (1)	87 (1)	70 (1)	58 (1)	50 (1)	44 (1)	39 (1)	35 (1)
0.75%	2260 (17)	242 (2)	116 (1)	87 (1)	70 (1)	58 (1)	50 (1)	44 (1)	39 (1)	35 (1)
1.00%	-	370 (4)	161 (2)	87 (1)	70 (1)	58 (1)	50 (1)	44 (1)	39 (1)	35 (1)
1.25%	-	553 (7)	205 (3)	121 (2)	70 (1)	58 (1)	50 (1)	44 (1)	39 (1)	35 (1)
1.50%	-	1130 (17)	247 (4)	121 (2)	97 (2)	58 (1)	50 (1)	44 (1)	39 (1)	35 (1)
1.75%	-	-	329 (6)	154 (3)	97 (2)	81 (2)	50 (1)	44 (1)	39 (1)	35 (1)
2.00%	-	-	448 (9)	185 (4)	97 (2)	81 (2)	50 (1)	44 (1)	39 (1)	35 (1)
2.25%	-	-	754 (17)	216 (5)	123 (3)	81 (2)	69 (2)	44 (1)	39 (1)	35 (1)
2.50%	-	-	1599 (40)	277 (7)	148 (4)	103 (3)	69 (2)	61 (2)	39 (1)	35 (1)
2.75%	-	-	-	394 (11)	173 (5)	103 (3)	69 (2)	61 (2)	54 (2)	35 (1)
3.00%	-	-	-	565 (17)	197 (6)	124 (4)	88 (3)	61 (2)	54 (2)	49 (2)
3.25%	-	-	-	981 (32)	245 (8)	145 (5)	88 (3)	61 (2)	54 (2)	49 (2)
3.50%	-	-	-	-	339 (12)	165 (6)	106 (4)	77 (3)	54 (2)	49 (2)
3.75%	-	-	-	-	452 (17)	185 (7)	106 (4)	77 (3)	69 (3)	49 (2)
4.00%	-	-	-	-	675 (27)	224 (9)	124 (5)	93 (4)	69 (3)	49 (2)
4.25%	-	-	-	-	1175 (50)	282 (12)	141 (6)	93 (4)	69 (3)	62 (3)
4.50%	-	-	-	-	-	377 (17)	175 (8)	108 (5)	83 (4)	62 (3)
4.75%	-	-	-	-	-	526 (25)	209 (10)	124 (6)	83 (4)	62 (3)
5.00%	-	-	-	-	-	800 (40)	258 (13)	139 (7)	97 (5)	74 (4)
6.00%	-	-	-	-	-	-	-	283 (17)	150 (9)	99 (6)
7.00%	-	-	-	-	-	-	-	-	314 (22)	170 (12)
8.00%	-	-	-	-	-	-	-	-	-	349 (28)
9.00%	-	-	-	-	-	-	-	-	-	-

(Source: ACL (2007))

ADDENDUM D: STATISTICAL SAMPLE SIZES – SLIGHT (= 1) 63% LEVEL OF ASSURANCE

Expected deviation rate	Sample size (Number of expected errors)									
	Tolerable deviation rate									
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
0.00%	100 (0)	50 (0)	34 (0)	25 (0)	20 (0)	17 (0)	15 (0)	13 (0)	12 (0)	10 (0)
0.25%	214 (1)	107 (1)	72 (1)	54 (1)	43 (1)	36 (1)	31 (1)	27 (1)	24 (1)	22 (1)
0.50%	325 (2)	107 (1)	72 (1)	54 (1)	43 (1)	36 (1)	31 (1)	27 (1)	24 (1)	22 (1)
0.75%	650 (5)	107 (1)	72 (1)	54 (1)	43 (1)	36 (1)	31 (1)	27 (1)	24 (1)	22 (1)
1.00%	-	163 (2)	72 (1)	54 (1)	43 (1)	36 (1)	31 (1)	27 (1)	24 (1)	22 (1)
1.25%	-	218 (3)	72 (1)	54 (1)	43 (1)	36 (1)	31 (1)	27 (1)	24 (1)	22 (1)
1.50%	-	325 (5)	109 (2)	54 (1)	43 (1)	36 (1)	31 (1)	27 (1)	24 (1)	22 (1)
1.75%	-	799 (14)	109 (2)	54 (1)	43 (1)	36 (1)	31 (1)	27 (1)	24 (1)	22 (1)
2.00%	-	-	146 (3)	82 (2)	43 (1)	36 (1)	31 (1)	27 (1)	24 (1)	22 (1)
2.25%	-	-	217 (5)	82 (2)	43 (1)	36 (1)	31 (1)	27 (1)	24 (1)	22 (1)
2.50%	-	-	358 (9)	109 (3)	65 (2)	36 (1)	31 (1)	27 (1)	24 (1)	22 (1)
2.75%	-	-	1016 (28)	109 (3)	65 (2)	36 (1)	31 (1)	27 (1)	24 (1)	22 (1)
3.00%	-	-	-	163 (5)	65 (2)	55 (2)	31 (1)	27 (1)	24 (1)	22 (1)
3.25%	-	-	-	242 (8)	87 (3)	55 (2)	47 (2)	27 (1)	24 (1)	22 (1)
3.50%	-	-	-	426 (15)	109 (4)	55 (2)	47 (2)	27 (1)	24 (1)	22 (1)
3.75%	-	-	-	1199 (45)	130 (5)	73 (3)	47 (2)	41 (2)	24 (1)	22 (1)
4.00%	-	-	-	-	173 (7)	73 (3)	47 (2)	41 (2)	24 (1)	22 (1)
4.25%	-	-	-	-	257 (11)	91 (4)	47 (2)	41 (2)	37 (2)	22 (1)
4.50%	-	-	-	-	465 (21)	109 (5)	63 (3)	41 (2)	37 (2)	22 (1)
4.75%	-	-	-	-	-	144 (7)	63 (3)	41 (2)	37 (2)	33 (2)
5.00%	-	-	-	-	-	179 (9)	78 (4)	55 (3)	37 (2)	33 (2)
6.00%	-	-	-	-	-	-	199 (12)	82 (5)	49 (3)	33 (2)
7.00%	-	-	-	-	-	-	-	213 (15)	85 (6)	55 (4)
8.00%	-	-	-	-	-	-	-	-	224 (18)	87 (7)
9.00%	-	-	-	-	-	-	-	-	-	233 (21)
10.00%	-	-	-	-	-	-	-	-	-	-

(Source: ACL (2007))

BIBLIOGRAPHY²

AAA, 1973. *A statement of basic auditing concepts*. Sarasota, USA: American Accounting Association.

ABDOLMOHAMMADI, M. and USOFF, C., 2001. A longitudinal study of applicable decision aids for detailed tasks in a financial audit. *International Journal of Intelligent Systems in Accounting, Finance and Management*, **10**(3), pp. 139-154.

ACITO, A.A., BURKS, J.J. and JOHNSON, W.B., 2008. Materiality decisions and the correction of accounting errors. *Accounting Review*, **84**(3), pp. 659-688.

ACL SOFTWARE PRODUCTS, 2007. *ACL*. 10 October 2007 edn. 1550 Alberni Street, Vancouver, BC V6G 1A5, Canada: ACL Services Ltd.

ADAMS, M.B., 1994. Agency theory and the internal audit. *Managerial Auditing Journal*, **9**(8), pp. 8-12.

AGSA, 2013a-last update, Integrated annual report 2012-13. Available: www.agsa.co.za/Documents/AGSAreports/AGSAsannualreports.aspx [1 May, 2014].

AGSA, 2013b-last update, Strategic plan and budget of the AGSA for 2013-16. Available:

² The following in-text referencing convention is used:

- Where a reference relates to only the preceding sentence, the reference follows the sentence directly and a full stop is included after the reference. E.g. "Sentence 1 (reference)."
- Where a reference relates to more than one preceding sentences, a full stop is included after each sentence. The reference follows the full stop after the last sentence and no full stop is included after the reference. E.g. "Sentence 1. Sentence 2. (reference)"

www.agsa.co.za/Documents/AGSAREports/Budgetandstrategicplans.aspx

[1 May, 2014].

AGSA, 2010-last update, Strategic plan and budget of the Auditor-General for 2010-13. Available:

www.agsa.co.za/Documents/AGSAREports/Budgetandstrategicplans.aspx

[1 May, 2014].

AICPA, 2008. *Audit guide: Audit sampling*. New York, USA: American Institute of Certified Public Accountants.

AICPA, 2006. *SAS 107: Audit risk and materiality in conducting an audit*. New York, USA: American Institute of Certified Public Accountants.

AKRESH, A.D., 2010. A risk model to opine on internal control. *Accounting Horizons*, **24**(1), pp. 65-78.

ALDERMAN, C.W. and TABOR, R.H., 1989. The case for risk-driven audits. *Journal of Accountancy*, **March**, pp. 55-61.

ALLEN, R.D., HERMANSON, D., KOZLOSKI, T.M. and RAMSEY, R.J., 2006. Audit risk assessment: Insights from the academic literature. *Accounting Horizons*, **20**(2), pp. 157-177.

ARENS, A.A., ELDER, R.J. and BEASLEY, M.S., 2012. *Auditing and assurance services*. London, United Kingdom: Pearson.

BABBIE, E., 2010. *The practice of social research*. 12th edn. Belmont, USA: Wadsworth.

BEDARD, J.C., 1989. An archival investigation of audit plan planning. *Auditing: A Journal of Practice and Theory*, **9**(1), pp. 57-71.

BEDARD, J.C. and GRAHAM, L.E., 2002. The effects of decision aid orientation on risk factor identification and audit test planning. *Auditing*, **21**(2), pp. 39-56.

BEDARD, J.C., MOCK, T.J. and WRIGHT, A., 1999. Evidential planning in auditing: A review of the empirical research. *Journal of Accounting Literature*, **18**, pp. 96-142.

BEDARD, J.C., SIMNETT, R. and DEVOE-TALLUTO, J.A., 2001. Auditors' consideration of fraud: How behavioral research can address the concerns of standard setters. *Advances in Accounting Behavioral Research*, **4**, pp. 77-101.

BELL, T.B., PEECHER, M.E. and SOLOMON, I., 2005. *The 21st century public company audit*. Urbana, USA: University of Illinois at Urbana-Champaign and KPMG Peat Marwick.

BERLE, A.A. and MEANS, G.C., 1932. *The modern corporation and private property*. New York, USA: Macmillan.

BEYER, B.K., 1995. *Critical thinking*. Bloomington, USA: Phi Delta Kappa Educational Foundation.

BIERSTAKER, J., HOUSTON, R. and WRIGHT, A., 2006. The impact of competition on audit planning, review and performance. *Journal of Accounting Literature*, **25**, pp. 1-58.

BIGGS, S.F., MOCK, T.J. and SIMNETT, R., 1999. Analytical procedures: Promise, problems and implications for practice. *Australian Accounting Review*, **9**(19), pp. 42-52.

BLAY, A., KIZIRIAN, T. and SNEATHER, L.D., 2008. Evidential effort and risk assessment in auditing. *Journal of Business and Economics Research*, **6**(9), pp. 39-52.

BLOCHER, E. and PATTERSON, G., 1996. The use of analytical procedures. *Journal of Accountancy*, **181**, pp. 53-55.

BLOKDIJK, H., DRIENHUIZEN, F. and DAN, A., 2003. Factors affecting auditors' assessments of planning materiality. *Auditing*, **22**(2), pp. 297-307.

- BOTHA, W.J.J., 1999. Audit materiality: A comparative analysis between normative principles and professional standards. *Southern African Journal of Accountability and Auditing Research*, **2**, pp. 31-54.
- BOWLIN, K., 2011. Risk-based auditing, strategic prompts and auditor sensitivity to the strategic risk of fraud. *Accounting Review*, **86**(4), pp. 1231-1253.
- BOWRIN, A.R., 1998. Review and synthesis of audit structure literature. *Journal of Accounting Literature*, **17**, pp. 40-71.
- BRENNAN, N.M. and SOLOMON, J., 2008. Corporate governance, accountability and mechanisms of accountability: An overview. *Accounting, Auditing and Accountability Journal*, **21**(7), pp. 885-906.
- BREWSTER, B.E., 2011. How a systems perspective improves knowledge acquisition and performance in analytical procedures. *The Accounting Review*, **86**(3), pp. 915-943.
- BUDESCU, D.V., PEECHER, M.E. and SOLOMON, I., 2012. The joint influence of the extent and nature of audit evidence, materiality thresholds and misstatement type on achieved audit risk. *Auditing*, **31**(2), pp. 19-41.
- CARRINGTON, T., 2010. An analysis of the demands on a sufficient audit: Professional appearance is what counts. *Critical Perspectives on Accounting*, **21**(8), pp. 669-682.
- CAUSHOLLI, M. and KNECHEL, W.R., 2012. An examination of the credence attributes of an audit. *Accounting Horizons*, **26**(4), pp. 631-656.
- CHARLES, S.L., GLOVER, S.M. and SHARP, N.Y., 2010. The association between financial reporting risk and audit fees before and after the historic events surrounding SOX. *Auditing*, **29**(1), pp. 15-39.

- CHEN, H., ZHANG, J. and PANY, K., 2008. An analysis of the relationship between accounting restatements and quantitative benchmarks of audit planning materiality. *Review of Accounting and Finance*, **7**(3), pp. 236-251.
- CHONG, H.G. and VINTEN, G., 1996. Materiality and audit risk modelling: Financial management perspective. *Managerial Finance*, **22**(9), pp. 35-60.
- CHOW, C.W., 1982. The demand for external auditing: Size, debt and ownership influences. *Accounting Review*, **57**(2), pp. 272-292.
- CHRISTENSEN, B.E., GLOVER, S.M. and WOOD, D.A., 2012. Extreme estimation uncertainty in fair value estimates: Implications for audit assurance. *Auditing*, **31**(1), pp. 127-146.
- CHRISTOPHER, J., 2010. Corporate governance: A multi-theoretical approach to recognizing the wider influencing forces impacting on organizations. *Critical Perspectives on Accounting*, **21**(8), pp. 683-695.
- CICA, 1980. *Extent of audit testing*. Toronto, Canada: Canadian Institute of Chartered Accountants.
- CLIFFORD, W.K., 1877. The ethics of belief. *Contemporary Review*, **29**, pp. 289-309.
- CLOUGH, P., 2002. *A student's guide to methodology: Justifying enquiry*. London, United Kingdom: Sage.
- COETZEE, G.P., 2010. *A risk-based audit model for internal audit engagements*, Doctoral thesis, University of the Free State, South Africa.
- COHEN, L.J., 1977. *The probable and the provable*. Oxford, United Kingdom: Clarendon.
- COLBERT, J.L., 2001. Audit sampling. *Internal Auditor*, **58**(1), pp. 27-29.

COLBERT, J.L., 1994. Analytical procedures for management accountants and auditors. *Managerial Auditing Journal*, **9**(5), pp. 3-7.

COLLIER, P.M., 2008. Stakeholder accountability: A field study of the implementation of a governance improvement plan. *Accounting, Auditing and Accountability Journal*, **21**(7), pp. 933-954.

CRESWELL, J.W., 2009. *Research design: Qualitative, quantitative and mixed methods approaches*. 3rd edn. London, United Kingdom: Sage.

CURTIS, E. and TURLEY, S., 2007. The business risk audit: A longitudinal case study of an audit engagement. *Accounting, Organizations and Society*, **32**(4-5), pp. 439-461.

CUSHING, B.E. and LOEBBECKE, J.K., 1986. *Studies in accounting research no. 26: Comparison of the audit methodologies of large accounting firms*. Sarasota, USA: American Accounting Association.

DĂNESCU, T. and SPĂTĂCEAN, O., 2009. Analytical procedures used in financial audit for the valuation of portfolio performances: Case of financial investment companies. *Annales Universitatis Apulensis: Series Oeconomica*, **11**(1), pp. 24-31.

DAVIES, M. and ASTON, J., 2011. *Auditing fundamentals*. London, United Kingdom: Pearson.

DAVIS, G.P., 2005. New directions in corporate governance. *Annual Review of Sociology*, **31**(1), pp. 143-162.

DAVIS, K., 1976. Social responsibility is inevitable. *California Management Review*, **19**(1), pp. 14-20.

DE MARTINIS, M., FUKUKAWA, H. and MOCK, T.J., 2011. Exploring the role of country and client type on the auditor's client risk assessments and audit planning decisions. *Managerial Auditing Journal*, **26**(7), pp. 543-565.

DE VAUS, D.A., 2001. *Research design in social research*. London, United Kingdom: Sage.

DEL CORTE, J.M., GARCÍA, F.J.M. and LAVIADA, A.F., 2010. Effective use of qualitative materiality factors: Evidence from Spain. *Managerial Auditing Journal*, **25**(5), pp. 458-483.

DEMERS, L. and WAYLAND, D., 1982. Corporate social responsibility: Is no news good news? *CA Magazine*, **115**(1), pp. 42-46.

DENNIS, I., 2010. What do you expect? A reconfiguration of the audit expectations gap. *International Journal of Auditing*, **14**(2), pp. 130-146.

DENZIN, N.K. and LINCOLN, Y.S., eds, 2011. *The SAGE handbook of qualitative research*. 4th edn. Los Angeles, USA: Sage.

DROEGE, S.B. and SPILLER, S., 2009. Critique of a premise: Illuminating cracks in the agency theory framework. *Journal of Legal, Ethical and Regulatory Issues*, **12**(1), pp. 41-54.

DUSENBURY, R.B., REIMERS, J.L. and WHEELER, S.W., 1996. An empirical study of belief-based and probability-based specifications of audit risks. *Auditing*, **15**(2), pp. 12-28.

EILIFSEN, A., MESSIER, W.F., GLOVER, S.M. and PRAWITT, D.F., 2010. *Auditing and assurance services*. 2nd edn. London, United Kingdom: McGraw-Hill.

EISENHARDT, K.M., 1989. Agency theory: An assessment and review. *Academy of Management: The Academy of Management Review*, **14**(1), pp. 57-74.

ELDER, R.J. and ALLEN, R.D., 2003. A longitudinal field investigation of auditor risk assessments and sample size decisions. *Accounting Review*, **78**(4), pp. 983-1002.

- ELHARIDY, A.M., NICHOLSON, B. and SCAPENS, R.W., 2008. Using grounded theory in interpretive management accounting research. *Qualitative Research in Accounting and Management*, **5**(2), pp. 139-155.
- ELIJIDO-TEN, E., 2007. Applying stakeholder theory to analyze corporate environmental performance: Evidence from Australian listed companies. *Asian Review of Accounting*, **15**(2), pp. 164-184.
- ELLIS, T.J. and LEVY, Y., 2009. Towards a guide for novice researchers on research methodology: Review and proposed methods. *Issues in Informing Science and Information Technology*, **6**, pp. 323-336.
- EL-MASRY, E.E. and HANSEN, K.A., 2008. Factors affecting auditors' utilization of evidential cues. *Managerial Auditing Journal*, **23**(1), pp. 26-50.
- ERIKSSON, P. and KOVALAINEN, A., 2008. *Qualitative methods in business research*. Los Angeles, USA: Sage.
- FAMA, E.F. and JENSEN, M.C., 1983. Separation of ownership and control. *Journal of Law and Economics*, **26**(2), pp. 301-325.
- FELDMANN, D.A. and READ, W.J., 2010. Auditor conservatism after Enron. *Auditing*, **29**(1), pp. 267-278.
- FLINT, D., 1988. *Philosophy and principles of auditing*. London, United Kingdom: Macmillan.
- FLINT, D., 1971. The role of the auditor in modern society. *Accounting and Business Research*, **1**(4), pp. 287-293.
- FOGARTY, J.A., GRAHAM, L. and SCHUBERT, D.R., 2007. Assessing and responding to risks in a financial statements audit: Part II. *Journal of Accountancy*, **January**, pp. 59-64.

FOGARTY, J.A., GRAHAM, L. and SCHUBERT, D.R., 2006. Assessing and responding to risks in a financial statements audit: Part I. *Journal of Accountancy*, **July**, pp. 43-49.

FOGARTY, T.J. and RIGSBY, J.T., 2010. A reflective analysis of the "new audit" and the public interest: The revolutionary innovation that never came. *Journal of Accounting and Organizational Change*, **6**(3), pp. 300-329.

FOWLER, H.W., FOWLER, F.G. and SYKES, J.B., 1982. *The concise Oxford dictionary*. 7th edn. New York: Oxford University Press.

FREEMAN, R.E., 1984. *Strategic management: A stakeholder approach*. Boston, US: Pitman.

FREEMAN, R.E., WICKS, A.C. and PARMAR, B., 2004. Stakeholder theory and the corporate objective revisited. *Organization Science*, **15**(3), pp. 364-369.

FUKUKAWA, H. and MOCK, T.J., 2011. Audit risk assessments using belief versus probability. *Auditing: A Journal of Practice and Theory*, **30**(1), pp. 75-99.

FUKUKAWA, H., MOCK, T.J. and WRIGHT, A., 2006. Audit programs and audit risk: A study of Japanese practice. *International Journal of Auditing*, **10**(1), pp. 41-65.

GLOVER, S.M., JIAMBALVO, J. and KENNEDY, J., 2000. Analytical procedures and audit-planning decisions. *Auditing*, **19**(2), pp. 27-45.

GLOVER, S.M., PRAWITT, D.F., LILJEGREN, J. and MESSIER, W.F., 2008. Component materiality for group audits. *Journal of Accountancy*, **December**, pp. 42-46.

GLOVER, S.M., PRAWITT, D.F., WILKS, T.J. and MCDANIEL, L., 2005. Why do auditors over-rely on weak analytical procedures? The role of outcome and precision. *Auditing*, **24**, pp. 197-220.

GLOVER, S.M., PRAWITT, D.F. and TAYLOR, M.H., 2009. Auditing standard setting and inspection for US public companies: A critical assessment and recommendations for fundamental change. *Accounting Horizons*, **23**(2), pp. 221-237.

GODFREY, J., HODGSON, A., HAMILTON, J. and HOLMES, S., 2010. *Accounting theory*. 7th edn. Milton, Australia: John Wiley.

GOLDMAN, A.I., 1986. *Epistemology and cognition*. Cambridge, USA: Harvard University.

GRAY, I. and MANSON, S., 2008. *The audit process: Principles, practice and cases*. 4th edn. London, United Kingdom: Thomson.

GREEN, W., 2005. Are auditors' analytical procedures judgments affected by receiving management explanations? *Australian Accounting Review*, **15**(3), pp. 67-74.

GRIX, J., 2010. *The foundations of research*. 2nd edn. Basingstoke, United Kingdom: Palgrave Macmillan.

GURD, B., 2008. Remaining consistent with method? An analysis of grounded theory research in accounting. *Qualitative Research in Accounting and Management*, **5**(2), pp. 122-138.

HALL, T.W., HERRON, T.L., PIERCE, B.J. and WITT, T.J., 2001. The effectiveness of increasing sample size to mitigate the influence of population characteristics in haphazard sampling. *Auditing: A Journal of Practice and Theory*, **20**(1), pp. 169-185.

HALL, T.W., HUNTON, J.E. and PIERCE, B.J., 2002. Sampling practices of auditors in public accounting, industry, and government. *Accounting Horizons*, **16**(2), pp. 125-136.

HAYES, A., 2007. Audit huddles as a tool to control over-and under-auditing tendencies: Part I. *Journal of Government Financial Management*, **Spring**, pp. 58-59.

HEATHCOTE, K., 2012. The professionalisation efforts of accountants in the Orange Free State, 1907 - 1927: An exploration of their first twenty years. *New Contree*, **64**, pp. 31-55.

HILL, C.W.L. and JONES, T.M., 1992. Stakeholder-agency theory. *Journal of Management Studies*, **29**(2), pp. 131-154.

HIRST, D.E. and KOONCE, L., 1996. Audit analytical procedures: A field investigation. *Contemporary Accounting Research*, **13**(2), pp. 457-486.

HITZIG, N.B., 2004. The hidden risk in analytical procedures: What WorldCom revealed. *CPA Journal*, **74**(2), pp. 32-35.

HOFSTEE, E., 2006. *Constructing a good dissertation: A practical guide to finishing a Master's, MBA or PhD on schedule*. Sandton, South Africa: EPE.

HOGAN, C.E. and WILKINS., M.S., 2008. Evidence on the audit risk model: Do auditors increase audit fees in the presence of internal control deficiencies? *Contemporary Accounting Research*, **25**(1), pp. 219-242.

HOOGDUIJN, L.A., HALL, T.W. and TSAY, J.J., 2010. Modified sieve sampling: a method for single- and multi-stage probability-proportional-to-size sampling. *Auditing*, **29**(1), pp. 125-148.

HOOKS, K.L., 2011. *Auditing and assurance services: Understanding the integrated audit*. New York, USA: John Wiley.

HOPE, O. and LANGLI, J.C., 2010. Auditor independence in a private firm and low litigation risk setting. *Accounting Review*, **85**(2), pp. 573-605.

HOUGHTON, K.A., JUBB, C. and KEND, M., 2011. Materiality in the context of audit: The real expectations gap. *Managerial Auditing Journal*, **26**(6), pp. 482-500.

HOUSTON, R.W., PETERS, M.F. and PRATT, J.H., 1999. The audit risk model, business risk and audit-planning decisions. *Accounting Review*, **74**(3), pp. 281-298.

IAASB, 2014a. Glossary of terms. *SAICA electronic handbook*. Johannesburg, South Africa: SAICA.

IAASB, 2014b. International framework for assurance engagements. *SAICA electronic handbook*. Johannesburg, South Africa: SAICA.

IAASB, 2014c. ISA 200: Overall objectives of the independent auditor and the conduct of an audit in accordance with International Standards on Auditing. *SAICA electronic handbook*. Johannesburg, South Africa: SAICA.

IAASB, 2014d. ISA 210: Agreeing the terms of audit engagements. *SAICA electronic handbook*. Johannesburg, South Africa: SAICA.

IAASB, 2014e. ISA 230: Audit documentation. *SAICA electronic handbook*. Johannesburg, South Africa: SAICA.

IAASB, 2014f. ISA 300: Planning an audit of financial statements. *SAICA electronic handbook*. Johannesburg, South Africa: SAICA.

IAASB, 2014g. ISA 315: Identifying and assessing the risks of material misstatement through understanding the entity and its environment. *SAICA electronic handbook*. Johannesburg, South Africa: SAICA.

IAASB, 2014h. ISA 320: Materiality in planning and performing an audit. *SAICA electronic handbook*. Johannesburg, South Africa: SAICA.

IAASB, 2014i. ISA 330: The auditor's responses to assessed risks. *SAICA electronic handbook*. Johannesburg, South Africa: SAICA.

IAASB, 2014j. ISA 450: Evaluation of misstatements identified during the audit. *SAICA electronic handbook*. Johannesburg, South Africa: SAICA.

IAASB, 2014k. ISA 500: Audit evidence. *SAICA electronic handbook*. Johannesburg, South Africa: SAICA.

IAASB, 2014l. ISA 501: Audit evidence: Specific considerations for selected items. *SAICA electronic handbook*. Johannesburg, South Africa: SAICA.

IAASB, 2014m. ISA 505: External confirmations. *SAICA electronic handbook*. Johannesburg, South Africa: SAICA.

IAASB, 2014n. ISA 520: Analytical procedures. *SAICA electronic handbook*. Johannesburg, South Africa: SAICA.

IAASB, 2014o. ISA 530: Audit sampling. *SAICA electronic handbook*. Johannesburg, South Africa: SAICA.

IAASB, 2014p. ISA 540: Auditing accounting estimates, including fair value accounting estimates, and related disclosures. *SAICA electronic handbook*. Johannesburg, South Africa: SAICA.

IAASB, 2014q. ISA 700: Forming an opinion and reporting on financial statements. *SAICA electronic handbook*. Johannesburg, South Africa: SAICA.

IAASB, 2014r. ISQC 1: Quality control for firms that perform audits and reviews of financial information. *SAICA electronic handbook*. Johannesburg, South Africa: SAICA.

IAASB, 2014s. Preface to the international standards on quality control, auditing, review, other assurance, and related services. *SAICA electronic handbook*. Johannesburg, South Africa: SAICA.

IAASB, 2012-last update, *About IAASB*. Available: www.ifac.org/auditing-assurance/about-iaasb [23 July, 2012].

IASB, 2014. Conceptual framework for financial reporting. *SAICA electronic handbook*. Johannesburg, South Africa: SAICA.

IFAC, 2013. *Handbook of the code of ethics for professional accountants*. New York, USA: International Federation of Accountants (IFAC).

IFAC, 2012-last update, About IFAC. Available: www.ifac.org/about-ifac [23 July, 2012].

IFAC, 2011a. *Guide to using ISAs in the audits of small- and medium-sized entities: Volume 1*. 3rd edn. New York, US: International Federation of Accountants.

IFAC, 2011b. *Guide to using ISAs in the audits of small- and medium-sized entities: Volume 2*. 3rd edn. New York, US: International Federation of Accountants.

INTOSAI, 2013. *ISSAI 300: Fundamental principles of performance auditing*. Vienna, Austria: International Organisation of Supreme Audit Institutions.

IODSA, 2012-last update, King Report on Corporate Governance in SA. Available: www.iodsa.co.za/PRODUCTSSERVICES/KingReportonGovernanceinSA.aspx [23 October, 2012].

IODSA, 2009. *King III report on governance for South Africa*. Johannesburg, South Africa: Institute of Directors in Southern Africa.

IODSA, 2002. *King II report on corporate governance for South Africa*. Johannesburg, South Africa: Institute of Directors in Southern Africa.

IODSA, 1994. *King I report on corporate governance for South Africa*. Johannesburg, South Africa: Institute of Directors in Southern Africa.

IRBA, 2014a-last update, Inspection results. Available: www.irba.co.za/index.php/component/content/535?task=view [15 April, 2014].

IRBA, 2014b-last update, Inspections. Available: www.irba.co.za/index.php/inspections [1 May, 2014].

IRBA, 2014c. *Manual of information*. Johannesburg, South Africa: Independent Regulatory Board for Auditors.

IRBA, 2014d-last update, The Board - Committees - Appointment to committees in terms of the Auditing Profession Act. Available: www.irba.co.za/index.php/component/content/288?task=view [1 May, 2014].

IRBA, 2013-last update, Status and authority of quality control, auditing, review, other assurance and related services pronouncements. Available: www.irba.co.za/index.php/auditing-standards-functions-55/729?task=view [2 October, 2014].

IRBA, 2011-last update, Public report on the inspection programme 2010-11. Available: www.irba.co.za/index.php/inspections [1 May, 2014].

IRBA, 2004-last update, Circular 01/2004: Adoption of IAASB standards by the Auditing and Assurance Standards Board. Available: www.irba.co.za/index.php/component/docman/doc_download/219-circular-b12004-adoption-of-iaasb-standards-by-the-auditing-and-assurance-standards-board [2 October, 2014].

JENKINS, J.J., 2005. The SEC's renewed embrace of qualitative materiality in enforcement proceedings. *Corporate Governance Advisor*, **13**(5), pp. 22-30.

JENSEN, M.C. and MECKLING, W.H., 1976. The theory of the firm: Managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics*, **3**, pp. 305-360.

JEPPESEN, K.K., 2007. Organizational risk in large audit firms. *Managerial Auditing Journal*, **22**(6), pp. 590-603.

JOHNSTONE, K.M. and BEDARD, J.C., 2001. Engagement planning, bid pricing and client response in the market for initial attest engagements. *Accounting Review*, **76**(2), pp. 199-220.

JSE LIMITED, 2010. *JSE listing requirements*. 13th edn. Johannesburg, South Africa: Johannesburg Stock Exchange Limited.

KACHELMEIER, S.J. and MESSIER, W.F., 1991. Non-statistical sample sizes: The effect of the audit guide decision aid. *CPA Journal*, **61**(3), pp. 55-57.

KACHELMEIER, S.J. and MESSIER, W.F., 1990. An investigation of the influence of a non-statistical decision aid on auditor sample size decisions. *Accounting Review*, **65**(1), pp. 209-226.

KINNEY, W.R., 2005. Twenty-five years of audit deregulation and re-regulation: What does it mean for 2005 and beyond? *Auditing*, **24**, pp. 89-109.

KINNEY, W.R., 1986. Audit technology and preferences for auditing standards. *Journal of Accounting and Economics*, **8**, pp. 73-89.

KINNEY, W.R., 1979. Integrating audit tests: Regression analysis and partitioned dollar-unit sampling. *Journal of Accounting Research*, **17**(2), pp. 456-475.

KINNEY, W.R., 1975. Decision theory aspects of internal control system design/compliance and substantive tests. *Journal of Accounting Research*, **13**(3), pp. 14-29.

KINNEY, W.R. and MCDANIEL, L.S., 1996. How to improve effectiveness of substantive analytical procedures. *CPA Journal*, **66**(4), pp. 52-54.

KIRK, N. and VAN STADEN, C., 2001. The use of grounded theory in accounting research. *Meditari Accountancy Research*, **9**(1), pp. 175-197.

KLEINMAN, G.B. and FARRELLY, G.E., 2011. A comment on the accountability of the accounting profession. *Journal of Applied Business Research*, **12**(2), pp. 75-82.

KNECHEL, W.R., 2007. The business risk audit: Origins, obstacles and opportunities. *Accounting, Organizations and Society*, **32**(4-5), pp. 383-408.

KNECHEL, W.R., 1988. The effectiveness of statistical analytical review as a substantive auditing procedure: A simulation analysis. *Accounting Review*, **63**(1), pp. 74-95.

KOCHETOVA-KOZLOSKI, N. and MESSIER, W.F., 2011. Strategic analysis and auditor risk judgments. *Auditing*, **30**(4), pp. 149-171.

KOSKIVAARA, E., 2007. Integrating analytical procedures into the continuous audit environment. *Journal of Information Systems and Technology Management*, **3**(3), pp. 331-346.

KRANACHER, M., 2012. Promoting auditor independence: Overcoming conflicts of interest. *CPA Journal*, **82**(5), pp. 80.

LARNER, R.J., 1970. *Management control and the large corporation*. New York, USA: Dunellen.

LAW, P., 2008. Auditor's perceptions of reasonable assurance in audit work and the effectiveness of the audit risk model. *Asian Review of Accounting*, **16**(2), pp. 160-178.

LEEDY, P.D. and ORMROD, J.E., 2010. *Practical research: Planning and design* 9th edn. Upper Saddle River, US: Pearson Education.

LEITCH, R.A. and CHEN, Y., 2003. The effectiveness of expectation models in recognizing error patterns and generating and eliminating hypotheses while conducting analytical procedures. *Auditing*, **22**(2), pp. 147-170.

LUO, L., 2011. *Are audit programs responsive to audit risk?*, Doctoral thesis, University of Alberta, Canada.

MACLULLICH, K.K., 2003. The emperor's new clothes? New audit regimes: Insight from Foucault's technologies of the self. *Critical Perspectives on Accounting*, **14**(8), pp. 791-811.

MARTIN, P.Y. and TURNER, B.A., 1986. Grounded theory and organizational research. *Journal of Applied Behavioral Science*, **22**(2), pp. 141-157.

MARTINOV, N. and ROUBUCK, P., 1998. The assessment and integration of materiality and inherent risk: An analysis of major firms' audit practices. *International Journal of Auditing*, **2**, pp. 103-126.

MAUTZ, R.K. and SHARAF, H.A., 1961. *The philosophy of auditing*. New York, USA: American Accounting Association.

MCDANIEL, L.S. and SIMMONS, L.E., 2007. Auditors' assessment and incorporation of expectation precision in evidential analytical procedures. *Auditing: A Journal of Practice and Theory*, **26**(1), pp. 1-18.

MESSIER, W.F. and AUSTEN, L.A., 2000. Inherent risk and control risk assessments: Evidence on the effect of pervasive and specific risk factors. *Auditing*, **19**(2), pp. 119-131.

MESSIER, W.F., GLOVER, S.M. and PRAWITT, D.F., 2010. *Auditing and assurance services: A systematic approach*. 7th edn. New York, USA: McGraw-Hill.

MESSIER, W.F., MARTINOV-BENNIE, N. and EILIFSEN, A., 2005. A review and integration of empirical research on materiality: Two decades later. *Auditing*, **24**(2), pp. 153-187.

MESSIER, W.F., SIMON, C.A. and SMITH, J.L., 2013. Two decades of behavioral research on analytical procedures: What have we learned? *Auditing: A Journal of Practice and Theory*, **32**(1), pp. 139-181.

MILLER, T.C., CIPRIANO, M. and RAMSAY, R.J., 2012. Do auditors assess inherent risk as if there are no controls? *Managerial Auditing Journal*, **27**(5), pp. 448-461.

MOCK, T.J. and WRIGHT, A., 1999. Are audit plan plans risk-adjusted? *Auditing*, **18**(1), pp. 55-74.

MOCK, T.J. and WRIGHT, A., 1993. An exploratory study of the auditors' evidential planning judgements. *Auditing*, **12**(2), pp. 39-61.

MOIZER, P., 2005. *Governance and auditing*. Northampton, USA: Edward and Elgar.

MORTON, J.E., 2002. The dual role of audit evidence. *Academy of Accounting and Financial Studies Journal*, **6**(3), pp. 95-113.

MOUTON, J., 2013. *How to succeed in your Master's and Doctoral studies*. Pretoria, South Africa: Van Schaik.

MULLARKEY, J., 1984. The case of the structured audit. In: H.F. STETTLER and N.A. FORD, eds, *Auditing symposium VII: Proceedings of the 1984 Touch Ross/University of Kansas symposium on auditing problems*. Kansas, USA: University of Kansas, pp. 73-84.

MYERS, M.D., 2009. *Qualitative research in business and management*. Los Angeles, USA: Sage.

NELSON, M., TAN, H. and TROTMAN, K.T., 2005. Judgement and decision making research in auditing: A task, person, and interpersonal interaction perspective. *Auditing*, **24**, pp. 41-71.

NORMANTON, E.L., 1966. *Accountability and audit of governments: A comparative study*. Manchester, USA: Manchester University.

O'REILLY, V.M., WINOGRAD, B.N., GERSON, J.S. and JAENICKE, H.R., 1999. *Montgomery's auditing*. 12th edn. New York, USA: John Wiley.

ODENDAAL, E.M., 2005. *Regulering van die ouditprofessie in Suid-Afrika*, Doctoral thesis, Universiteit van Pretoria, South Africa.

ODENDAAL, E.M. and DE JAGER, H., 2008. Regulation of the auditing profession in South Africa. *Southern African Journal of Accountability and Auditing Research*, **8**, pp. 1-13.

ÖHMAN, P. and WALLERSTEDT, E., 2012. Audit regulation and the development of the auditing profession: The case of Sweden. *Accounting History*, **17**(2), pp. 241-257.

PARMAR, B.L., FREEMAN, R.E., HARRISON, J.S., WICKS, A.C., PURNELL, L. and DE COLLE, S., 2010. Stakeholder theory: The state of the art. *Academy of Management Annals*, **4**(1), pp. 403-445.

PCAOB, 2007. *Report on the second-year implementation of auditing standard no. 2: An audit of internal control over financial reporting performed in conjunction with an audit of financial statements*. Washington, USA: Public Company Accounting Oversight Board.

PERRY, T.P.M., 2011-last update, *SAS 106: Audit evidence: Is it effective?*. Available: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1907438 [23 November, 2012].

PHILLIPS, R., FREEMAN, R.E. and WICKS, A.C., 2003. What stakeholder theory is not. *Business Ethics Quarterly*, **13**(4), pp. 479-502.

POLIMENT, R.S. and BURKE, J.A., 2011. Auditor independence? Time to eliminate the question mark. *Journal of Portfolio Management*, **38**(1), pp. 5-8.

- PORTER, B.A., 2009. The audit trinity: The key to securing corporate accountability. *Managerial Auditing Journal*, **24**(2), pp. 156-182.
- PYUN, H., 2006. Audit and civil society: The Korean experience. *International Journal of Government Auditing*, **33**(2), pp. 20-23.
- REED, J.L., 1976. Are auditors sentinels for society? *CPA Journal*, **46**(6), pp. 15-18.
- ROBERTSON, J.C., 1995. A constrained cost-minimization model for audit sample planning. *Auditing*, **14**(2), pp. 105-123.
- ROHRMANN, B., 1986. Evaluating the usefulness of decision aids: A methodological perspective. In: B. BREHMER, H. JUNGERMANN, P. LOURENS and G. SEVÓN, eds, *New directions in research on decision making*. Amsterdam, Holland: North-Holland, pp. 363-381.
- RSA, 2008. *Companies Act no. 71 of 2008*.
- RSA, 2005. *Auditing Profession Act no. 26 of 2005*.
- RSA, 2004. *Public Audit Act no. 24 of 2004*.
- RSA, 2003. *Municipal Finance Management Act no. 56 of 2003*.
- RSA, 1999. *Public Finance Management Act no. 1 of 1999*.
- RSA, 1951. *Public Accountants' and Auditors' Act no. 51 of 1951*.
- RYAN, B., SCAPENS, R.W. and THEOBOLD, M., 2002. *Research method and methodology in finance and accounting*. 2nd edn. London, United Kingdom: Thomson.
- SAICA, 2014a. Circular 08/2005: Status of professional pronouncements. *SAICA electronic handbook*. Johannesburg, South Africa: SAICA.

SAICA, 2014b-last update, *SAICA history*. Available: www.saica.co.za/About/SAICAHistory/tabid/70/language/en-ZA/Default.aspx [15 October, 2014].

SALKIND, N.J., 2009. *Exploring research*. 7th edn. Upper Saddle River, New Jersey, USA: Pearson.

SAMAHA, K. and HEGAZY, M., 2010. An empirical investigation of the use of ISA 520 “analytical procedures” among big 4 versus non-big 4 audit firms in Egypt. *Managerial Auditing Journal*, **25**(9), pp. 882-911.

SCHMUTTE, J. and DUNCAN, J.R., 2009. Professional judgement: A model for accounting and auditing decisions. *CPA Journal*, **79**(9), pp. 32-35.

SCHROEDER, R.G. and CLARK, M., 1995. *Accounting theory*. 5th edn. New York, USA: John Wiley.

SCOTT, D.A. and WALLACE, W.A., 1994. A second look at an old tool: Analytical procedures. *CPA Journal*, **64**(3), pp. 30-35.

SEIDEL, T., 2014. *The effective use of the audit risk model at the account level*, Doctoral thesis, University of Arkansas, USA.

SHERER, M. and KENT, D., 1983. *Auditing and accountability*. London, United Kingdom: Pitman.

SIMON, H.A., 1964. On the concept of organisational goal. *Administrative Science Quarterly*, **9**(1), pp. 1-22.

SMITH, G.F., BENSON, P.G. and CURLEY, S.P., 1991. Belief, knowledge, and uncertainty: A cognitive perspective on subjective probability. *Organizational Behavior and Human Decision Processes*, **48**, pp. 291-321.

SMITH, M., FIEDLER, B., BROWN, B. and KESTEL, J., 2001. Structure vs. judgement in the audit process: A test of Kinney's classification. *Managerial Auditing Journal*, **16**(1), pp. 40-49.

SPICER, E.E. and PEGLER, E.C., 1921. *Practical auditing*. 3rd edn. London, United Kingdom: H Foulks Lynch.

SRINIDHI, B.N. and VASARHELYI, M.A., 1986. Auditor judgement concerning establishment of substantive tests based on internal control reliability. *Auditing*, **5**(2), pp. 64-76.

STILWELL, M.C. and ELLIOTT, R.K., 1985. A model for expanding the attest function. *Journal of Accountancy*, **May**, pp. 66-78.

STRAUSS, A. and CORBIN, J., 2008. *Basics of qualitative research: Techniques and procedures for developing grounded theory*. 3rd edn. London, United Kingdom: Sage.

STRINGER, K.W., 1975. A statistical technique for analytical review. *Journal of Accounting Research*, **13**(3), pp. 1-9.

SULLIVAN, J.D., 1984. The case of the unstructured audit approach. In: H.F. STETTLER and N.A. FORD, eds, *Auditing symposium VII: Proceedings of the 1984 Touch Ross/University of Kansas symposium on auditing problems*. Kansas, USA: University of Kansas, pp. 61-68.

TAVALLAEI, M. and ABU TALIB, M., 2010. A general perspective on role of theory in qualitative research. *Journal of International Social Research*, **3**(11), pp. 570-577.

TIESSEN, P. and WATERHOUSE, J.H., 1983. Towards a descriptive theory of management accounting. *Accounting, Organisations and Society*, **8**(2/3), pp. 251-267.

TOSI, H.L., 2009. *Theories of organization*. Los Angeles, USA: Sage.

TREADWAY COMMISSION, 1987. *Report of the national commission on fraudulent financial reporting*. Washington, USA: National Commission on Fraudulent Financial Reporting.

TUCKER, J.J., 1989. An early contribution Of Kenneth W. Stringer: Development and dissemination of the audit risk model. *Accounting Horizons*, **3**(2), pp. 28-37.

TURLEY, S. and COOPER, M., 1991. *Auditing in the United Kingdom: A study of development in the audit methodologies of large accounting firms*. London, United Kingdom: Institute of Chartered Accountants in England and Wales.

US SEC, 1999. *SEC staff accounting bulletin no. 99: Materiality*. Washington, USA: US Securities and Exchange Commission.

USA, 2002. *Sarbanes-Oxley Act no. 107-204 of 2002*.

VAN HEERDEN, B., 2005. Audit risk revisited. *Southern African Journal of Accountability and Auditing Research*, **6**, pp. 85-92.

VANASCO, R.R., SKOUSEN, C.R. and JENSON, R.L., 2001. Audit evidence: The US standards and landmark cases. *Managerial Auditing Journal*, **16**(4), pp. 207-214.

VANDERVELDE, S.D., TUBBS, R.M., SCHEPANSKI, A. and MESSIER, W.F., 2009. Experimental tests of a descriptive theory of combined audit risk assessment. *Auditing: A Journal of Practice and Theory*, **28**(2), pp. 145-169.

VERHOEF, G., 2013. Reluctant ally: The development of statutory regulation of the accountancy profession in South Africa, 1904 - 1951. *Accounting History*, **18**(2), pp. 163-191.

VERHOEF, G., 2011a. Breaking new ground. *Accountancy SA*, **April**, pp. 5.

VERHOEF, G., 2011b. The state and the profession: Initiatives and responses to the organisation of the accounting profession in South Africa, 1904 - 1951. *Historia*, **56**(2), pp. 19-42.

VITALIS, A.M., 2012. *Business risk and audit risk: An integrated model with experimental boundary test*, Doctoral thesis, University of Wisconsin, USA.

VON WIELLIGH, S.P.J., 2005. *The development of a best practice framework for the formulation of overall audit strategies for insurance contracts and the related earnings of listed South African long-term insurers*, Doctoral thesis, University of Stellenbosch, South Africa.

WALLER, W.S., 1993. Auditor's assessments of inherent and control risk in field settings. *Accounting Review*, **68**(4), pp. 783-803.

WATTS, R.L., 1977. Corporate financial statements, a product of the market and political processes. *Australian Journal of Management*, **April**, pp. 53-75.

WEF, 2014. *2014-15 Global competitiveness report*. Geneva, Switzerland: World Economic Forum.

WHITTINGTON, O.R. and PANY, K., 2010. *Principles of auditing and other assurance services*. 7th edn. New York, USA: McGraw-Hill.

WILLIAMS, C., 2007. Research methods. *Journal of Business and Economic Research*, **5**(3), pp. 65-71.

WILSON, A.C. and COLBERT, J., 1989. An analysis of simple and rigorous decision models as analytical procedures. *Accounting Horizon*, **3**(4), pp. 79-83.

WINES, G., 2012. Auditor independence. *Managerial Auditing Journal*, **27**(1), pp. 5-40.

WRIGHT, A. and BEDARD, J.C., 2000. Decision processes in audit evidential planning: A multistage investigation. *Auditing*, **19**(1), pp. 123-143.

WRIGHT, A. and MOCK, T.J., 1988. Auditor evidential planning judgements. In: R.P. SRIVASTAVA and J.E. REBELE, eds, *Auditing symposium IX: Proceedings of the 1988 Touch Ross/University of Kansas symposium on auditing problems*. Kansas, USA: University of Kansas, pp. 101-114.

ZABEL, R.B. and BENJAMIN, J.J., 2002. Reviewing materiality in accounting fraud. *New York Law Journal*, **15**, pp. 1-4.