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Audit Service Quality: An Empirical Investigation

A Thesis Submitted to the Faculty of Economic of The University of Sydney

By Anja Marketta Morton

In fulfilment of the requirements for the Degree of Doctor of Philosophy

January 1998
To the ones who really matter, my dearest Alan and Benjamin.
Abstract

The nature of the auditor/client relationship and the differences between traditional audit quality and audit service quality are currently poorly understood. This study presents five research questions designed to address the auditor/client relationship. The Empirical testing of the research questions is achieved by the use of a highly structured questionnaire which measures the perceptions of audit clients about their incumbent auditor. First, the services marketing literature relating to the disconfirmation of expectations paradigm, is applied to auditing. The proposed model, which is unique in both the marketing and auditing literatures, states that: audit service quality = f(expectations, performance, disconfirmation). While the empirical results support this specification of the services model, the significance of the expectations construct appears to depend on whether the respondents are directors or financial accountants. Second, the dimensions of audit quality as perceived by managers are investigated based on an integration of the economics of auditing literature, behavioural survey studies of audit clients and services marketing literature. Apart from the credibility or brand name dimension of audit quality which is well established in the economics of auditing literature, three other dimensions are proposed. These are reliability (auditor competence), control (the auditor’s contribution to internal control) and ancillary services (service and attitude). The relative importance of these attributes in the formation of service and traditional quality assessments appears to depend on the type of respondent
and the size of the client. Third, the impact of four engagement characteristics (type of opinion, duration of appointment, size of audit firm and size of client) on perceptions of service and traditional audit quality are investigated. Apart from client size, no other engagement characteristic appear to have an impact on managers’ perceptions of audit quality in the expected direction. The fourth research question introduces the marketing concept of behavioural intentions to the audit literature. No prior auditing study has addressed this issue. Behavioural intentions are measured as the manager’s intention to recommend that the auditor be retained and/or that other services be purchased from the audit firm. Interestingly, the empirical results reveal that perceptions of audit service quality, not traditional audit quality, have a positive impact on these intentions. This results has significant implications for auditor switching studies, which have, until now, ignored the impact of service quality perceptions on managers’ decisions to switch audit firms. Finally, the fifth research question specifically addresses the conceptual and empirical differences between audit service quality and traditional technical audit quality. They are shown to differ significantly. The implications of these differences are analysed.
Acknowledgements

My sincere thanks go to my supervisor Professor Allen Craswell for his kind support, encouragement and advice. I am also indebted to Professor Lester Johnson from the Graduate Schools of Business, University of Sydney, for his advice in respect of the marketing literature.

The research was supported by grants from the Association of Accountants of Australia and New Zealand and Coopers and Lybrand. I thank the people who responded to the somewhat lengthy questionnaire. Without the generosity of these people the empirical testing of the hypotheses would not have been possible.

Finally, I thank my beloved husband, Alan Morton, without whom this thesis would not have been started....or finished.
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Chapter 1 Introduction

1.0 Research Questions

In the vast amount of audit quality research contained in the economics of auditing literature, measures of audit quality are based on audit firm attributes that are observable to users of financial reports (for example, brand name). These measures arise from the stewardship theory of auditing, because based on this theory, the most widely accepted definition of audit quality is "the market assessed joint probability that a given auditor will both (a) discover a breach in the client's accounting system, and (b) report the breach" (DeAngelo 1981b, p. 186) (emphasis added). Thus, audit quality is considered only from the perspective of users of financial reports (the "market") and is assessed in terms of audit firm credibility. However, several other dimensions of audit quality, observable only to managers, are also important. Moreover, the competition among equally credible audit firms is high which means that firms need something other than credibility to provide a competitive edge. In addition, audit quality defined as the level of assurance provided that the accounts are free from material misstatements, describes only one concept of audit quality applicable to managers. There is, therefore, a need to expand the concept of quality used in the audit quality literature. The concept of service quality, for example, is important for auditors, as it is for most other professional services. The concept of service quality is well established in the marketing literature and currently auditors, practicing in an increasingly competitive environment, are focussed on "meeting customer needs". While the concept of service quality has appeared in the auditing literature (see chapter three) there is a lack of understanding of the way in which
services marketing models can be applied to auditing to expand the definition of audit quality from that currently adopted in the economics of auditing literature. Furthermore, although the social consequences of the client/auditor relationship are wider than for most other professional services, the relationship between the auditor's traditional and service roles has not been investigated. The purpose of this thesis is to integrate services marketing and auditing concepts of quality to provide a more complete framework for considering audit quality. Audit quality measures are expanded to include attributes observable only to managers and the differences between traditional technical audit quality and service quality are addressed.

The following five research questions are investigated, both theoretically and empirically.

1. Which of the services marketing models is applicable to the audit service?
2. What are the dimensions of audit quality as perceived by managers?
3. What impact do audit engagement characteristics have on managers' perceptions of audit quality?
4. What impact do perceptions of service and technical quality have on managers' behavioural intentions?
5. What are the differences between audit service and traditional technical quality?

In answer to the first research question the audit service is first classified according to a schema developed by services marketing researchers (Lovelock 1984). The services marketing literature is then reviewed to develop a model of services which is applied to the audit service. In the analysis and final models, three overall constructs of audit quality, as perceived by managers, are used. These are: technical audit quality, defined as the probability that the auditor will discover a material
misstatement; independence, defined as the probability that the auditor will report a material misstatement to shareholders; and audit service quality, broadly defined as the comparison of performance to expectations. Technical audit quality and independence are traditional definitions of audit quality, whereas, service quality is a construct developed in the services marketing literature (for example, Parasuraman, Zeithaml and Berry 1985; 1988; Oliver 1993). Presented is the most comprehensive study of managers' assessments of traditional technical audit quality and service quality, to date.

The services marketing paradigm used is referred to as the disconfirmation of expectations paradigm. Models of services consist of multi-attribute constructs relating to expectations, actual performance and disconfirmation. Clients are assumed to expect a certain standard of performance from the service provider, in relation to various dimensions of performance (see research question two). When actual performance on these dimensions is observed and compared to expectations, a psychological assessment of the degree to which performance meets, exceeds or falls short of expectations is assumed to be made (for example, Oliver 1980). The latter assessment is referred to as disconfirmation. The overall concept of service quality or customer satisfaction/dissatisfaction, is assumed to be a function of expectations, performance and disconfirmation. These constructs are contained in two basic models of services in the marketing literature; the customer satisfaction/dissatisfaction model and the gap model. The model adopted for auditing is based on an integration of these two models and is stated as follows:

Audit service quality = f(expectations, performance, disconfirmation).
This model is unique in that it has not been empirically tested in precisely this form, in either the auditing or marketing literatures. The empirical results, in the form of regression models, support all of the hypotheses which arise from this model, confirming that this specification of the service model is applicable for the audit service. These results are of interest not only in auditing, but also in marketing, because they provide further evidence about the debate in the marketing literature over the measurement of the disconfirmation construct. That is, they support the conceptualisation and measurement of disconfirmation as a separate psychological construct rather than as an arithmetic gap between performance and expectations.

The investigation of the second research question is based on literature related to attribute theory (Lancaster 1966), the economics of auditing, behavioural audit survey research and marketing. Four overall dimensions of audit quality are identified from these literatures; credibility, reliability, control and ancillary services. These overall attributes are developed into 28 detailed variables using qualitative and exploratory research techniques. The 28 variables are included in the audit service model as measures of the expectations, performance and disconfirmation constructs. In addition, empirical results in the form of factor analysis confirmed the overall attributes of reliability, control and ancillary services (the credibility attribute is excluded from the empirical testing, see section 3.1).

The investigation of the third research question is carried out through a review of the audit literature and empirical testing. The engagement characteristics identified from this review are the type of opinion, duration of the appointment, the size of audit firm and the size of client. While these characteristics are integrated into the audit service
model (see Figure 3.1), empirical results reveal that they have very little impact on managers' perceptions of audit quality.

The fourth research question is investigated by integrating the services marketing literature relating to behavioural intentions (customers' intentions to repurchase a service from the same supplier) with the auditing literature relating to auditor switches and the purchase of other services. Thus, the model of audit services is extended by the inclusion of behavioural intentions defined in the following three ways:

Intentions to recommend, at the next review of the auditor's appointment, that the auditor be retained;
Intentions to recommend that other services be purchased from the audit firm; and
Intentions to recommend the auditor to a colleague.

The empirical results indicate that while there is a statistically significant positive relationship between perceptions of service quality and these behavioural intentions, perceptions of traditional technical audit quality are not related to behavioural intentions. This result highlights the importance of the service quality concept to auditing, because it suggests that perceptions of service quality are associated with decisions to switch auditors.

The fifth research question addresses the differences between traditional audit quality and service quality which are investigated mainly through the investigation of the other four research questions. Theoretical and empirical analysis indicates that, while service quality contains elements of technical reliability it also contains performance attributes associated with the provision of the day-to-day service. Thus, service
quality goes far beyond the traditional audit quality. The empirical testing involves a model, similar to the gap model, which is used to assess the relative importance of the various performance dimensions in the formation of service and technical quality perceptions. The results indicate that the performance attribute, reliability, is the most important attribute in the formation of both service and technical quality assessments. The control attribute has a positive impact on technical quality assessments and no impact on service quality assessments. Finally, an ancillary attribute, service, is found to have a positive impact on service quality assessments and a negative impact on technical quality assessments. The theoretical and empirical results, therefore, suggest several significant differences between the concepts of technical and audit quality. A better understanding of these differences will assist audit practitioners and researchers to focus their attention on appropriate concepts of quality.

1.1 Motivation

The purchase of goods and services has been shown to be comprised of at least four stages: (1) problem recognition; (2) search; (3) choice; and (4) post-purchase evaluation (Stock and Zinszer 1987; Francis and Wilson 1988; Bateson 1991; Day and Barksdale 1992). Audit quality research has focused almost exclusively on the first three stages of this process. As an audit client's sensitivity increases, competition expands, public image of the profession declines and lawsuits against auditors increase, the issue of evaluating audit quality is emerging as a topic in need of further investigation. This thesis makes a contribution by investigating audit quality at the fourth stage of the purchase process shown above.
The definition of audit quality generally adopted in the economics of auditing literature is: "the market assessed joint probability that a given auditor will both (a) discover a breach in the client's accounting system and (b) report the breach." (DeAngelo 1981, Watts and Zimmerman 1983). Quality is assumed to depend solely on the market's assessment and therefore, only one dimension of audit quality, credibility of the auditor with users of financial reports, arises from this definition. This is a limited view of the complex relationship that exists between auditors and their clients as it explains the choice of audit firm type based only on the size of the audit firm. Although it is obvious that the audit client makes an evaluation of the incumbent auditor, an understanding of nature of this evaluation and the relative importance of the various dimensions of quality to the evaluation outcome is generally absent from the auditing literature.

To maintain their reputations and fulfil their legal obligations auditors must provide a reasonable level of technical quality and they can be expected to have internally designed specifications of technical quality based on professional expertise. To conceptualise audit quality as that perceived by the top management is to adopt a user-based concept of quality\(^1\). User-based quality is evaluated based on customers' perceptions. The relationship between technical and user-based audit quality is poorly understood, although it is of particular importance to auditing, given the potential conflicts between these concepts of quality. Auditors are in the precarious position of ensuring that they achieve a high level of technical quality (which satisfies users of financial reports and statutory obligations) while at the same time proving a

\(^1\) User-based quality is probably the closest definition of quality now universally accepted (Juran 1982; Swartz, Bowen and Brown 1992; International Standards Organisation)
quality service to the audit client. To varying degrees, each of the posited research questions address the relationship between technical and service quality as perceived by managers.

The results of this research will benefit users, regulators, auditors and audit researchers, because investigating the cues used by managers to assess audit quality will help users of financial reports and regulators to understand the nature of the client/auditor relationship and thus, assess its potential for conflict. Because of the intangible nature of the benefits of auditing to clients, auditors also may find it difficult to understand how managers evaluate audit quality. As auditors learn how the service is evaluated, they will be better able to influence these evaluations in the desired direction. The perceptions of managers are of particular interest to audit quality research, because managers have the opportunity to observe the audit service delivery process and thus, are able to base their evaluations on a much richer set of attributes than users of financial reports.

The use of audit committees has increased and one of the duties of an audit committee is to involve itself in the audit process by evaluating the auditor’s performance (for example, Price Waterhouse 1993; Ernst and Young 1994). Given this task, audit committee members may impose their views of audit quality on the audit process. Consequently, gaining an understanding of the factors that shape audit committee members’ assessments of audit quality can provide important insights into how auditing practice will be affected by the expanded use of audit committees in Australia.
Investigating audit engagement characteristics which may have an impact on managers' perceptions of audit quality, has the potential to add significantly to our understanding of audit quality. Ideally, engagement characteristics should not reduce perceptions of technical quality, that is, the minimum required level of assurance should be provided by all audits irrespective of the size of the client or the audit firm.

The link between perceptions about the level of satisfaction or service quality and customers' intentions to repurchase the service from the same supplier has been well established in the services marketing literature (for example, Oliver 1980; Bitner 1990; Cronin and Taylor 1992; Patterson 1993; Taylor and Baker 1994). However, this link does not appear to have been tested in respect of the audit service. While there is extensive research relating to auditor switches, very few have considered the perceived level of service quality in the decision to switch. Two exceptions are Eichenseher and Shields (1983) and Williams (1988) who found that dissatisfaction with the quality of the service provided by the audit firm was one of the most important reasons given for auditor switches. Research question four considers the link between perceptions of service and technical quality and managers' intentions to recommend that the auditor be retained or that other services be purchased from the auditor. An understanding of the impact of service quality on behavioural intentions is important for auditors in their efforts to retain clients within the limits of their statutory duties and to researchers who are examining auditor switches.

This study provides new evidence regarding the conditions of demand in the market for audit services by considering managers' post-purchase evaluation of audit quality. Little is known about the nature of this evaluation, the audit engagement
characteristics that affect it and how perceived audit service quality impacts on behavioural intentions to switch auditors and or to purchase other services from the auditor. This research begins to fill this gap in the auditing literature. This thesis makes a contribution by extending the theoretical foundation associated with audit quality by integrating the services marketing literature with the existing audit quality literature and by providing empirical evidence in relation to this extension.

1.2 Method and Overview

Each of the five research questions stated above are investigated theoretically and empirically. The theoretical analyses relating to research questions one and four are drawn from the marketing literature and are contained together in chapter two. The theoretical analyses relating to research questions two and three are based solely on the auditing literature and are contained in chapter three. Chapter three also addresses the conceptual differences between service and traditional audit quality (research question five). Chapter four describes the hypotheses development. The research design adopted is an exploratory and descriptive, quantitative research design in the form of a highly structured self-administered questionnaire. Managers of audit clients are asked to base their responses on their perceptions of actual auditor performance. The research method is described in detail in chapter five including the method of data analysis which is based on factor analysis and regression analysis. The results are described and analysed in chapter six and final conclusions are drawn in chapter seven.
1.3 Outline of the Study

Chapter two addresses the first and fourth research questions and, thus, develops a model of services for the audit service based on the marketing literature. Chapter two first classifies the audit service according to a schema developed in the services marketing literature (section 2.1) and then it presents three basic models of services (section 2.2). The global constructs of customer satisfaction/dissatisfaction and service quality (section 2.3.1) and their antecedent constructs of expectations (section 2.3.2), performance (section 2.3.3) and disconfirmation (section 2.2.4) are also described in chapter two. The services marketing and audit literatures are reviewed and integrated in section 2.4 for the purpose of investigating the link between perceptions of quality and intentions to recommend that the audit firm be retained and/or that other services be purchased from the audit firm.

Chapter three addresses the second, third and fourth research questions. Four overall audit service quality dimensions are identified and described in section 3.1. The literature relating to the impact of audit engagement characteristics on perceptions of service and technical quality and independence is reviewed in section 3.2. The conceptual differences between service and technical quality are examined in section 3.3. Chapter four contains the hypotheses. In chapter five, section 5.1, the methodology used, and in particular the development of the research instrument is described. In section 5.2, the way in which key constructs and variables are operationalised for data collection is detailed. Factor analysis and the regression models used to test the hypotheses and the relative importance of performance attributes, are described in section 5.3. The results are detailed in chapter six.
Section 6.1 contains response rate statistics and section 6.2 contains the descriptive statistics for all variables. Results relating to factor analysis are detailed in section 6.3 and the results for the regression models relating to the hypotheses and individual performance attributes are contained in sections 6.4 and 6.5 respectively. Finally, overall conclusions are drawn in chapter seven. Conclusions relating to each of the research questions are contained in sections 7.1 to 7.5. The limitations relating to this research are contained in section 7.6 and future research directions are explored in section 7.7. Finally, the implications of the findings are summarised in section 7.8.
Chapter 2  Marketing Model of the Audit Service

2.0  Introduction

The focus of this chapter is on the services marketing literature and how it applies to the audit service. Two distinct aspects of this literature are discussed. First, alternative models from the literature are analysed and a model is developed for the audit service (first research question). Second, the marketing literature relating to the link between perceptions of quality and behavioural intentions is combined with the auditing literature relating to auditor switches and the purchase of other services from the audit firm (fourth research question). To introduce the services marketing literature the audit service is first classified according to a schema developed in that literature. Classifying the audit service in this way helps us to understand the way in which marketing scholars would view auditing. Moreover, the exact specification of service models has been shown to be influenced by the nature of the related service (Carman 1990).

In section 2.1, the differences in goods and services quality are highlighted and the audit service is classified. In section 2.2, prominent models of services from the marketing literature are outlined. Definitions and summaries of debates in the marketing literature relating to each of the constructs contained in the service models are provided in section 2.3. The marketing literature relating to customer perceptions and behavioural intentions and the auditing literature relating auditor switches and the purchase of other services are reviewed in section 2.4. Finally, in section 2.5, a summary of the chapter is provided.
2.1 Classification of the Audit Service

Marketing research related specifically to services has increased significantly in the last ten years coinciding with the increase in services offered in the world's economy (Gronroos 1990). This section introduces the services marketing literature by classifying the audit service according to a schema developed in that literature. The nature of the dimensions used to classify services determines the framework within which quality is measured. Thus, by describing these dimensions, the assumptions which underlie quality measurement in the services marketing literature are introduced to auditing.

Identification of the differences between goods and services quality is also important to the understanding of the classification schema for services. For example, in economics, goods and services are viewed as possessing one of three qualities, being search, experience or credence qualities. Search qualities are those qualities of a good or service which can be evaluated prior to purchase; experience qualities are those which can be evaluated only during or after the consumption process. The quality of goods or services which are high in credence qualities are difficult to evaluate even after purchase and consumption (Darby and Karni 1973; Nelson 1970). The audit service like most other services is high in experience and credence qualities in contrast to tangible goods which tend to have search qualities. Service quality also differs from goods quality in two other significant ways (for example, Parasuraman, Zeithaml and Berry 1985). First, the outcome of services is intangible (that is, they are high in credence qualities). Second, the level of quality supplied can be heterogeneous due to the high labour content of most services and the inseparability
between the production and provision of the service. Auditing, like many other services, involves extensive interaction between the client and the audit staff. At this stage the quality of the interaction is out of the control of the audit firm's management, leading to possible heterogeneity in the quality delivered. It should, however, be noted that the technical work carried out by the audit team is not subject to such inseparability\(^1\).

While the characteristics of intangibility and inseparability are important to an understanding of service quality, it is also important to note that services differ from each other based on these and other characteristics. This importance stems from the observation that the specification of the service model can depend on the nature of the service (see, for example, Carman 1990 and Bolton and Drew 1991). Lovelock (1983) reviewed the existing marketing literature relating to classification schemes and developed a comprehensive schema which has been adopted by a number of marketing researchers (for example, Parasuraman, Zeithaml and Berry 1985; Patterson 1993). It involves classifications along five different continuums. Lovelock's (1983) schema was used here to classify the audit service. Each of the five continuums and how it applies to the audit service is described below.

2.1.1 Nature of the service act

The first dimension upon which services are classified is termed "nature of the service act". It relates to the extent to which the service has a tangible outcome. Regarding this as a continuum, its extreme points are labelled "tangible" and

\(^1\) Auditing practice statements require that all work carried out by junior staff be subject to review by experienced auditors (ICAA Members' Handbook 1996, AUS 206).
“intangible”. It is argued that the final audit outcome, the audit report, is quite tangible.

2.1.2 Nature of the relationship

The second dimension relates the “nature of the relationship” or the extent of contact necessary during the service. The extreme points of this continuum are labelled “continuous” and “discrete”. Auditing is among the most continuous professional services available. In Australia, auditors are appointed until such time as they are removed, resign or become ineligible to act for reasons stated in the Corporations Act (1989) (section 329). The nature of the work also requires that various members of the audit team spend four to eight weeks at the client’s premises, depending on the client’s size.

2.1.3 Extent to which it is possible to customise the service

The next dimension upon which services are classified is the “extent to which it is possible to customise the service”, or the ability to tailor the service to each customer. Its points are labelled “judgemental/customised” and “standardised”. In a significant sense the audit service is extremely standardised. Its ultimate outcome, the audit report, is entirely standardised\(^2\). The process by which the outcome is established is, also to a large extent standardised and regulated, but involves professional judgement (see section 3.3). By virtue of their legal liability auditors are restricted from changing the definition of technical audit quality and the means to achieve it. They have a legal and professional obligation to provide a reasonable level of assurance

\(^2\) Detailed guidelines are given in the ICAA Members' Handbook 1996 (AUS 702), specifying the content of the audit outcome. Consequently, all unqualified audit reports are identical except for the name of the audited entity, the auditors name, etcetera.
that the financial reports are free from material misstatements. Thus, no variance in technical audit quality can be offered across clients below that required. For this reason it has been suggested that audit services are a standard product sold in a mature market (Elliott and Jacobson 1994-95; Palmer 1989). However, the concept of service quality, to be introduced in section 2.2, can be tailored by the auditor, thereby representing a dimension of quality upon which audit firms may differentiate themselves more readily. Service quality cannot, however, be customised to the extent that it impinges on the auditor’s legal requirements. The auditor’s temptation to customise service quality by issuing an unqualified audit report when the financial reports are materially misstated, is the focal point of most audit quality literature (refer chapter three).

2.1.4 Nature of the demand for and supply of the service

The nature of the demand for the service act is the forth dimension in the classification schema. The points of this continuum are “wide” and “narrow” and it relates to the extent of fluctuation in the demand for the service. Unlike manufacturers it is not possible to stockpile audit services. For example, if an accounting firm is too busy to accept audit work from a prospective client, another firm will get the engagement, and similarly, the revenue lost whenever employees are idle can never be recouped. Thus, this continuum measures the extent to which it is possible for auditors to match supply to demand. This depends on the extent to which demand fluctuates and the speed with which it is possible to expand and contract the capacity of the firm. Demand fluctuations in the market for audit services are fairly
predictable. Existing clients tend to remain and additional staff are quite easy to hire if new clients cannot be serviced by exiting staff and resources.

2.1.5 Extent of interaction

The final criterion in the classification schema is the extent of interaction associated with the service. It relates to the amount of interaction between the auditor and client and the location at which the interaction takes place. Its extreme points are labelled "large" and "small". Auditing can be classified as a service involving a large amount of interaction, which mainly takes place at the client's premises. The nature of the interaction for the audit service is particularly interesting and challenging for the auditor. First, it is between organisations rather than individuals, as such it is labelled a business-to-business professional service. Second, the auditor's role is to monitor financial reporting by the client, thus, the audit outcome is directed at a third party, shareholders, rather than the client. For this purpose, auditors are required to remain independent of the client and to regard the relationship with professional scepticism.

The above characteristics are important to the development of an appropriate service model and to the development of audit quality attributes (research question two, see chapter three).

2.2 Models of services - An Overview

Different models of services have been proposed and the debate about the specification of the models and the precise meaning of their constructs has yet to be resolved (for example, Carman 1990; Bolton and Drew 1991; Cronin and Taylor 1992; Oliver 1993; Parasuraman, Zeithaml and Berry 1994; Patterson and Johnson
However, by far the dominant assumption in the services marketing literature is that customer perceptions are affected by the disconfirmation of expectations (for example, Parasuraman, Zeithaml and Berry 1985; 1988; Oliver 1980; 1993). Individuals are assumed to have expectations about multiple service performance dimensions and are assumed to compare their expectations with their perceptions of actual performance. Overall perceptions about the service are then said to be affected by the extent to which performance exceeds, meets or falls short of expectations. Thus, customer perceptions about services are modelled within a disconfirmation of expectations paradigm.

The models of services in the marketing literature fall into three broad categories: the customer satisfaction/dissatisfaction model (CS/D model) (section 2.2.1); the gap model (section 2.2.2); and models which integrate these two models (section 2.2.3). Table 2.1 provides a summary of the models and examples of some of the variations proposed in respect of each model.

Table 2.1 lists only models which have been empirically tested. Theoretical models which integrate the CS/D and gap models are briefly reviewed in section 2.3.1 and are listed in Table 2.2. This section provides only an overview of each model. Descriptions of the individual constructs contained in the models are provided in the next section (2.3) which deals specifically with the audit service model.
Table 2.1 Models of Services

<table>
<thead>
<tr>
<th>Model specification</th>
<th>Study</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gap Models</strong></td>
<td></td>
</tr>
<tr>
<td>2. ( SQ = P )</td>
<td>Cronin and Taylor (1992); Babacus and Boller (1992).</td>
</tr>
<tr>
<td>3. ( SQ = EI_i(P_i - E_i) )</td>
<td>Carman (1990).</td>
</tr>
<tr>
<td><strong>CS/D Models</strong></td>
<td></td>
</tr>
<tr>
<td>5. ( CS/D = f(E, D, P) )</td>
<td>Bearden and Teel (1982); Cadotte, Woodruff and Jenkins (1987) Oliver and DeSarbo (1988); Jayanti and Jackson (1991); Patterson (1993).</td>
</tr>
<tr>
<td><strong>Integrated model</strong></td>
<td></td>
</tr>
</tbody>
</table>

Key:
- P - Performance
- E - Expectations
- D - Disconfirmation
- SQ - Perceived service quality
- CS/D - Customer satisfaction/dissatisfaction
- \( i \) - Importance weights for the \( i \)th performance attribute

2.2.1 The Customer Satisfaction/Dissatisfaction Model

The CS/D model states that:

\[
CS/D = f(\text{Performance, Expectations, Disconfirmation})
\]

This model was developed initially for goods (Cardozo 1965; Olshavsky and Miller 1972; Anderson 1973;) and subsequently applied to services (for example, Oliver 1980; Patterson 1993). Customer perceptions are conceptualised as the level of
customer satisfaction or dissatisfaction, performance is presumed to be an antecedent to CS/D directly and via the disconfirmation construct and it is generally agreed that expectations have only an indirect impact on CS/D, via disconfirmation (for example, Cadotte, Woodruff and Jenkins 1987; Oliver and DeSarbo 1988; Jayanti and Jackson 1991; Patterson 1993). In the CS/D literature disconfirmation is measured as the perceived subjective evaluation of the discrepancy between performance and expectations (see section 2.3.4). Expectations, performance and disconfirmation are multi-dimensional scales designed to capture the CS/D construct. Table 2.1 contains two specifications of the CS/D model and shows that earlier versions assumed that expectations and disconfirmation had a direct impact on CS/D and performance had no impact (for example, Oliver 1980; Swan and Trawick 1981).

2.2.2 The gap model

The gap model is generally stated as:

\[ \text{Service Quality} = (\text{Performance - Expectations}) \]

In this model customer perceptions are conceptualised as service quality (SQ) which is defined as the arithmetic difference between expectations and perceived performance (for example, Parasuraman, Zeithaml and Berry 1985; 1988; 1994; Brown and Swartz 1989). Table 2.1 shows two alternate forms of this model. Cronin and Taylor (1992) and Babacus and Boller (1992) found that performance alone was a better predictor of service quality than the arithmetic gap between performance and expectations. Carman (1990) proposed an alternative model which included importance weights, but found the weights to be relatively homogeneous which means that collecting them is probably not necessary.
In developing the gap model, Parasuraman, Zeithaml and Berry (1985) also developed what they believed to be the generic dimensions of service quality called SERVQUAL. Originally SERVQUAL contained ten dimensions, but these were subsequently reduced to five (Parasuraman, Zeithaml and Berry 1988). The five dimensions are tangibles, reliability, responsiveness, assurance and empathy. Parasuraman, Zeithaml and Berry (1985; 1988) used 22 items to measure the differences between expectations and performance on each of the five dimensions. The gap model, therefore, assumes that global service quality evaluations are the sum of the difference scores for tangibles, reliability, responsiveness, assurance and empathy.

The gap model has, however, been criticised on both conceptual and econometrical grounds. For example, in other studies researchers have been unable to replicate the SERVQUAL dimensions using the same 22 items across different services (Carman 1990; Babacan and Boller 1992; Cronin and Taylor 1992). The items loaded on different dimensions and/or new dimensions were created and others were deleted. Moreover, SERVQUAL was subject to a third revision by the original authors (Zeithaml, Parasuraman and Berry 1991). This indicates that SERVQUAL is not the set of generic service quality dimensions it was intended to be.

On a conceptual level Oliver (1993) noted that subtracting expectations from performance gives a high measure of quality not only when performance is high, but also when expectations are low. If expectations are low, even poor performance will meet expectations and service quality is defined as high. For this reason, the way in
which expectations are measured is an important consideration. Oliver (1993) noted also that summing of aggregate dimension scores results in a composite scale which cannot be used in a generalised sense, because it has a semantic meaning imposed by its components (de Vaus 1992). Oliver (1993) also noted that summing the difference scores is psychometrically unsound, because of the inherent unreliability of difference score. Cronin and Taylor (1992 p. 56) concluded after extensive study that, "little if any theoretical or empirical evidence supports the relevance of the experience - performance gap as a basis for measuring service quality". Similarly, Carman (1990) Babacus and Boller (1992), Patterson and Johnson (1996) among others, question the validity of the difference score on analytical, theoretical and practical grounds.

2.2.3 Integrated Model

The specification of the model which integrates the gap and CS/D models is not consistently stated in the marketing literature (see section 2.3.1). However, the form of the integrated model proposed by Bolton and Drew (1991), who are one of the few to have empirically tested an integrated model, states that:

\[ \text{Perceived service quality} = f(\text{performance, disconfirmation}) \]

Bolton and Drew (1991) conceived and measured customer perceptions as in the gap model, that is, as SQ, however, they used antecedent constructs from the CS/D model. They argued that for a continuously provided service, SQ rather than CS/D is the appropriate measure of customer perceptions (see section 2.3.1). However, they also argued that disconfirmation should be measured as a distinct construct as in the

---

3. Different forms is expressing expectations are considered the next section.
CS/D literature and not as the difference between performance and expectations (see section 2.3.4).

**Table 2.2 Customer Satisfaction/Dissatisfaction and Service Quality Models**

<table>
<thead>
<tr>
<th>Model</th>
<th>Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQ₁ → CS/D → SQ₂</td>
<td>Oliver (1993); Parasuraman, Zeithaml and Berry (1994).</td>
</tr>
</tbody>
</table>

**Key:**
- SQ - Service quality
- CS/D - Customer satisfaction/dissatisfaction

2.3 Service Model Constructs

In this section, the argument is presented that the model most appropriate for the audit service is-

\[ SQ = f(\text{expectations, performance, disconfirmation}) \]

The proposed relationships between the variables is presented in Figure 2.1. Based on the marketing literature, the constructs of the services models presented in section 2.2 are defined in more detail in this section to develop the argument for the adoption of the above model. The constructs of the models are presented in the following order, SQ and CS/D (2.3.1); expectations (2.3.2); performance (2.3.3); and disconfirmation (2.3.4).
Figure 2.1 Marketing Model of Audit Service Quality

- Expectations
  - Disconfirmation
    - Performance
    - Technical Quality
      - Service Quality
        - Behavioural Intentions
2.3.1 Service Quality and Customer Satisfaction Dissatisfaction

The CS/D and SQ constructs have been argued to be related, but not equivalent constructs (Oliver 1981; Parasuraman, Zeithaml and Berry 1988; Bitner 1990; Bolton and Drew 1991; Cronin and Taylor 1992; Patterson and Johnson 1996; Dabholkar 1993; Oliver 1993). The definition of CS/D which has gained the most recognition in the literature, is that it is a post-purchase judgement concerning a specific purchase transaction (for example, Oliver 1980; 1993; Patterson and Johnson 1996). That is, CS/D is said to represent consumers' evaluation of a specific transaction and consumption experience. Thus, it is argued that CS/D is transitional (for example, Oliver 1980; 1993; Patterson and Johnson 1996). For the audit service, this is an important aspect of the definition of CS/D, because auditing is a continuous service and the definition implies that CS/D is based on a discrete consumption experience.

SQ has been defined as a comparison to excellence (for example, Zeithaml 1987; Oliver 1993; Taylor and Baker 1994), that is, SQ is the consumer's overall impression of the relative inferiority/superiority of the service (Bitner and Hubbart 1994). However, Oliver (1993) noted that the only definition of service quality available was that operationalised by SERVQUAL and that the suggestion that SQ is a comparison to excellence arises only from the way the original authors measured expectations (Parasuraman, Zeithaml and Berry 1985; 1988) with reference to an ideal company which delivers excellent service.

It has also been suggested that SQ is akin to an attitude (Oliver 1980; Parasuraman, Zeithaml and Berry 1985; 1988; Bitner 1990; Bolton and Drew 1991; Cronin and
Taylor 1992; Patterson and Johnson 1996). However, Oliver (1993) noted that there is no empirical evidence to support such a conceptualisation.

The relationship between CS/D and SQ has been considered by several researchers (for example, Bitner 1990; Bolton and Drew 1991; Cronin and Taylor 1992; Swartz and Brown 1989; Zeithaml, Parasuraman and Berry 1991; Dabholkar 1993; Oliver 1993; Berry, Parasuraman and Zeithaml 1995; Patterson and Johnson 1996). Table 2.2 lists the relationships proposed by each study. Predictably, differing relationships have been proposed. Bitner (1990) and Bolton and Drew (1991) proposed that SQ is the superordinate concept and satisfaction is its antecedent. One explanation behind this direction of the relationship is Oliver's (1980) analysis using adaptation theory. This analysis applies only, if SQ is assumed to be an attitude. Oliver (1980) argued and showed empirically that, if SQ is conceptualised and measured as an attitude, CS/D is the surprise a customer experiences after purchase and that surprise becomes an input to a less dynamic attitude. Consequently, CS/D as a temporal construct can be considered to influence SQ which is considered a more enduring construct (Patterson and Johnson 1996). The CS/D $\rightarrow$ SQ relationship was not, however, tested by Bolton and Drew (1991).

Cronin and Taylor (1992) empirically tested the relationship between SQ and CS/D. They found empirical support for the direction SQ $\rightarrow$ CS/D. Oliver (1993) also proposed that satisfaction is superordinate to quality. He stated that:

"...quality is one of the service dimensions which are factored into the consumers satisfaction." (1993, p. 78)
However, he qualified this by stating that after the effect of SQ on CS/D, CS/D may reinforce SQ. Moreover, he stated that, unlike SQ, CS/D can also be based on non-quality disconfirmations (for example, colour rather than finish of the paint work on a luxury car). Rust and Oliver (1994) and Taylor and Baker (1994) note additional differences between SQ and CS/D, for example, experience with the service is not required to form SQ perceptions but it is for CS/D and that SQ has fewer conceptual antecedents than CS/D. Dabholkar (1993) noted that the constructs are likely to be very closely related and that even if they are separate, both constructs operate at each transaction. Which is first to occur, she argues, depends on whether a cognitive or an affective state is achieved first. Berry, Zeithaml and Parasuraman (1995) also argue that both can be associated with a given service experience and both could exist as overall, global attitudes about a service. Oliver (1993) also suggests a simultaneous effect when he says that after the effect of SQ on CS/D, CS/D may reinforce SQ.

Thus, the weight of the evidence in the services marketing literature supports the position that SQ and CS/D are best conceptualised as unique constructs and should not be treated as equivalents in models of services. CS/D is primarily an affective state and SQ is primarily a cognitive state (Dabholkar 1993). The proposed model of audit services contains SQ, mainly on the bases of Bolton and Drew (1991) who argued that SQ was the right measure of perceptions for a continuously provided service (telephone service), because it is a lasting construct. Audit clients with long term exposure to the service provider would have opportunity to form realistic and lasting assessments of the audit service.
2.3.2 *Expectations*

While Bolton and Drew (1991) did not include expectations in their model of service quality, the paradigm in which the main models have been developed assumes that individuals have expectations about service performance attributes and that these expectations are compared with perceptions of actual performance. A question which is yet to be resolved is which comparison standard should be used to measure expectations (for example, Tse and Wilton 1988). Woodruff, Cadotte and Jenkins (1983) suggested that in CS/D formation expectations can be based on experience based norms, needs, desires or some other generalised referent. Myer (1991) suggested that measures of expectations can be grouped into three categories:

- Ideal or the "wished for" level of performance or the level of performance that "can be" provided;
- Equitable or deserved level of performance or what "should be" provided; and
- Expected or predicted level of performance. Based on prior performance this is what performance will "probably be".

Parasuraman, Zeithaml and Berry (1988) proposed the concept of ideal expectations when they operationalised expectations as the extent to which a particular attribute is essential for an excellent service, but Oliver (1993) considers ideal expectations as perfect states of nature and perhaps unattainable. Zeithaml, Parasuraman and Berry (1991) refined their concept of expectations and identified two different comparison norms: *desired service* which is the level of service that can be and should be delivered; and *adequate service* which is the level of service the customer considers necessary. That is, desired service is both ideal and equitable expectations combined and while the desired expectations may be high, they are considered attainable.
However, while these normative expectations have tended to be used in the gap model research, the CS/D literature has expressed expectations as predictions of the level of performance (Oliver 1980). In the CS/D literature expectations have been typically viewed as predictions about the positive or negative outcome of a service attribute (Oliver 1980). As such, Parasuraman, Zeithaml and Berry (1988) suggested that the gap model literature views expectations as what should be provided and the CS/D literature views it as what would be provided. Oliver (1993) interprets the current evidence as suggesting the simultaneous operation of ideal and predicted expectations, which is consistent with saying that expectations are high, but within reason.

In a study of audit services using the gap model, Dassen (1995) measured both desired and adequate expectations and found them to have a differing impact on SQ. The effect on SQ of the gap between performance and adequate expectations was greater than between performance and desired expectations. However, this result could be due to problems noted above with the arithmetic measurement of the disconfirmation construct rather than an indication of the appropriateness of the adequate form of expectations. It seems that the normative, ideal (but realistic) form of expectations coincides with the conceptualisation of SQ as a comparison to excellence.

Bolton and Drew (1991) in their preliminary research found that telephone customers did not actively process expectations about the service. Consequently, they did not include expectations in their model. As far as auditing is concerned, managers could reasonably be expected to harbour expectations. The service is imposed upon
managers in many situations, by statute, it is very expensive and it can be a major interruption to daily work and peace of mind. It is, therefore, likely that managers expect auditors to provide a certain level of quality.

2.3.3 Performance

As for expectations, performance is a multi-attribute construct intended to capture the multi-dimensional nature of the service experience. For services, performance has been shown to have both a direct and an indirect impact on CS/D (for example, Bearden and Teel 1983; Cadotte, Woodruff and Jenkins 1987; Oliver and DeSarbo 1988; Patterson 1993). The indirect impact occurs via the disconfirmation construct. In respect of SQ, Cronin and Taylor (1992) found performance alone was a better predictor of SQ than the gap between expectations and performance. Bolton and Drew (1991) also provided theoretical and empirical evidence to support both a direct link and an indirect link via disconfirmation between performance and SQ. On the basis of these studies, both the direct and indirect impacts of performance are included in the proposed model.

An obvious question to arise is what are the performance (expectations and disconfirmation) attributes that make up the audit service? This coincides with the second research question posed and is addressed in detail in chapters three, four and five.

2.3.4 Disconfirmation

While disconfirmation is a key construct in both the gap and CS/D models, the way in which it is measured differs between the models. For example, under the gap model
the disconfirmation construct is derived by subtracting expectations scores from performance scores (Parasuraman, Zeithaml and Berry 1985; 1988). That is, disconfirmation is inferred from the gap, performance - expectations. In contrast, in the CS/D literature, disconfirmation is measured as the perceived subjective evaluation of the discrepancy between performance and expectations (Oliver 1980; Oliver and DeSarbo 1988; Carman 1990; Oliver 1993; Patterson and Johnson 1996).

The CS/D literature conceptualises disconfirmation as a distinct psychological construct. It embraces the subjective evaluation of the variation between actual performance and expectations, that is, it includes the psychological processes which affect perceptions of differences in performance (for example, Oliver (1980) Carman 1990; Patterson and Johnson 1996). The CS/D model depicts expectations, performance outcomes and disconfirmation as exerting separate influences on CS/D judgements. This presupposes that disconfirmation can operate separately from expectations and performance outcomes. Oliver (1993) noted that unlike arithmetic disconfirmation, subjective disconfirmation was not a linear combination of expectations and performance and can thus be conceptualised as having an independent effect on CS/D or SQ.

While this form of the disconfirmation construct is consistently used in CS/D research, only Bolton and Drew (1991) seem to have applied it to SQ. However, on the basis of Bolton and Drew's (1991) empirical findings and the arguments presented in prior research and summarised in this section and in section 2.2.3 refuting the gap form, the subjective form of the disconfirmation construct is included in the proposed model.
As for performance and expectations, the multi-dimensional nature of services is assumed to lead to multiple disconfirmation perceptions (Carman 1990; Oliver 1993). Oliver (1989) and Bolton and Drew (1991) suggested that for a continuously provided service, disconfirmation will operate only if performance is outside the range of experience based norms.

2.4 Perceptions of Service Quality and Behavioural Intentions

In this section the marketing and auditing literatures are integrated to investigate the link between perceptions of audit service and technical quality, and behavioural intentions. This relates to the fourth research question posed in chapter one. Behavioural intentions is a term used in the services marketing literature and is defined as the client’s intentions to repurchase the service from the same supplier. The marketing literature is reviewed in section 2.4.1 to establish the link between SQ (and technical quality) and behavioural intentions. The way in which behavioural consequences have been treated in the auditing literature is considered in section 2.4.2 where the literature relating to auditor switches and the purchase of other services from the audit firm is reviewed.

2.4.1 Behavioural Intentions - Marketing literature

Three of the studies listed in table 2.1 tested the impact of CS/D on future behavioural intentions to re-purchase the service from the original supplier (Oliver 1980; Bitner 1990; Patterson 1993). Cronin and Taylor (1992) tested the impact of both CD/S and SQ on repurchase intentions. They concluded that "satisfaction appears to have a stronger and more consistent effect on purchase intentions than
does service quality" (p. 64). In contrast, Taylor and Baker (1994) found that conceptualising CS/D and SQ as acting jointly, increased the amount of variance explained in consumers' purchase intentions. Zeithaml, Berry and Parasuraman (1996) also found support for a link between SQ and intentions to repurchase the service from the same supplier.

The question of whether CS/D or SQ influences consumers' decisions to repurchase a good or service, depends on the order of the CS/D / SQ formation. As explained above, the marketing literature is still debating this question. The relationship studied here is that between SQ and purchase intentions, because SQ is the overall construct of quality contained in the proposed model for the audit service.

The link between technical quality and repurchase intentions was studied by Sweeney, Soutar and Johnson (1997). They found that perceptions of technical quality (defined as competence) had a direct impact on perceptions of value which in turn had a direct impact on purchase intentions. They also found that service quality (defined as functional quality) had a direct impact on intentions as well as an indirect influence via perceptions of value. While the definition of technical audit quality differs significantly from that used in the related marketing studies, adaptations, which are described in section 5.4.1 are made to allow for a comparison of the results with prior marketing studies.

2.4.2 Behavioural Intentions - Auditing Literature

Auditor switches have been extensively studied. Detailed reviews of this literature have been carried out, for example, by Yardley, Kauffman, Cairney and Albrecht
(1992) and Barkess and Simnett (1994). Many empirical studies of auditor switches have involved the statistical analysis of economic determinants of changes, such as, the efficient economic alignment of auditors and audit clients, based on client characteristics and audit firm investment in specific technology, location and brand name (for example, Simunic and Stein 1987; Johnson and Lys 1990; DeFond 1992; Anderson and Stokes 1994). Examples of the variables considered in auditor switching studies include disagreements (DeAngelo 1982; McConnell 1984), qualified audit opinions (Chow and Rice 1982; Smith 1986; May 1987; Craswell 1988); financial distress (Schwartz and Menon 1985; Haskins and Williams (1990), agency costs (for example, DeFond 1992; Johnson and Lys 1990; Menon and Williams 1991) and the availability of other services (DeBerg, Kaplan and Pany 1991). Apart from the first one, these variables relate to the economic determinants of the reasons for change as well as to the type of audit firm selected. The conceptualisations of the auditor change process used in these studies do not necessarily explain the choice of a specific audit firm and they do not take into consideration behavioural factors. Some evidence does, however, exist in the audit literature to suggest that auditor changes are precipitated by a poor working relationship between auditor and audit client management (Eichenseher and Shields 1983) and the perception of poor service quality (Williams 1988).

As described in the above section, a growing area of marketing research has linked clients' perceptions of service quality to intentions to repurchase a service from the same supplier. The ideas developed in the marketing literature are, for the first time, applied, in this study, to the audit service. However, defining definition of
behavioural intentions as the client's intention to repurchase the service from the
same supplier is somewhat problematic for the following reasons:

To propose that perceptions of audit service quality have an impact on intentions
to switch audit firms assumes that the switch is not driven by any economic
factors which make the present alignment between audit client and auditor
inappropriate (for example, DeFond 1992; Johnson and Lys 1990; Anderson and
Stokes 1994);

Managers may only nominate auditor removal and appointment. The removal
and appointment of external auditors is governed by Corporations Law which
requires that auditors be appointed through a vote of the shareholders
(Corporations Act 1989, section 327);

Auditor switches are relatively infrequent (auditors are appointed until such time
as they choose to resign or are removed by the shareholders (section 329
Corporations Act 1989).

It is costly to switch auditors, including possible negative share market reactions
(Craswell 1988); and

There is considerable uncertainty about the level of quality provided by
alternative suppliers.

Thus, repurchase intentions can only be considered in terms of managers'
recommendations to shareholders, rather than actual decisions to retain or remove
their auditors. Behavioural intentions of audit clients can also be defined in another
way, as intentions to recommend the purchase of other services from the audit firm.
The purchase of other services from the audit firm by audit clients is a significant
source of revenue for audit firms. The effects, on audit quality, of the provision of
other services by the audit firm, have been extensively studied and the effects have
been explained in the following ways:
A threat to auditor independence through increased fee dependence (for example, Shockley 1981; Pany and Reckers 1984; Knapp 1985; Beck, Frecka and Solomon 1988; Gul 1989);

Purchasing other services from the audit firm reduces search costs (Simunic and Stein 1987); and

The production of auditing creates "knowledge externalities or spill-overs" which reduces the cost of other services when the services are produced jointly (Simunic 1984; Abdel-khalik 1990; DeBerg, Kaplan and Pany 1991).

The reason purchasing other services from the auditor reduces search costs is presumably because professional services are high in experience and credence qualities (see section 2.1). Experiencing the audit service may give managers an insight into the likely level of quality of the other services provided by the firm, before purchase. This has the effect of reducing the amount of uncertainty about the quality of the other services prior to purchase. Some support for this argument is provided by DeBerg, Kaplan and Pany (1991) and Barkess and Simnett (1994). DeBerg, Kaplan and Pany (1991) found that other fees paid to auditors reduced (relative to audit fees) the year after a switch. They propose that this may relate to the client's "unwillingness to engage the auditor for [other services] until an on going relationship has been established" (p. 28). Using a sample of switches by Australian companies, Barkess and Simnett (1994) found an increase in fees from other services in the year of the switch. They also found that this increase was far more significant one year after the switch. They interpreted this as evidence that the amount of other services purchased from the auditor increases as a result of a switch rather than being a reason for it. Consistent with this is the casual observation that audit firms actively attempt to sell other services to audit clients as a means of increasing revenue. Some
audit firms partly assess employee performance on the extent to which they have been able to identify opportunities for offering other services to audit clients.

A related question is that, given the advantages of obtaining other services from the external auditor, for example, reduced search costs and "knowledge spill-overs" (Simunic 1984; Simunic and Stein 1987; DeBerg, Kaplan and Pany 1991), why do not all companies which demand other services purchase it from their auditor? Some possible answers are:

The client believes that the provision of other services by the auditor is detrimental to perceptions of auditor independence by users of financial reports (for example, Shockley 1981; Knapp 1985; Pany and Reckers 1984; Gul 1989);

The client is not satisfied with the quality of the audit service, and does not wish to commit itself to "more of the same";

Irrespective of the perception of audit service quality, higher quality other services are perceived to be available elsewhere; or

Although the client is satisfied with the quality of the audit service, they do not believe that it is indicative of the quality of other services.

The first point above means that no matter how high the quality of other services is perceived to be, the client will not purchase them from the audit firm. The second point refers to the relationship proposed in this section between perceptions of service quality and intentions to purchase other services from the auditor. That is, based on the marketing literature, it is argued that perceptions of audit service quality will have a positive impact on behavioural intentions (defined as intentions to recommend the purchase of other service from the audit firm). The third point listed above, refers to the increasing trend in the provision of professional services to specialise in a specific area. Anecdotal evidence collected during the exploratory phase of this study,
suggested the some entities in need of professional services seek out the specialists, who may or may not be associated with the incumbent auditor. The final point refers to the possibility that the quality of the audit service or technical audit quality and the quality of other services are perceived not to be highly correlated. That is, auditing could be considered to be an area of specialisation which is not transferable to other areas.

The link between SQ and behavioural intentions and technical quality and behavioural intentions does not appear to have been tested before for the audit service. This study provides further evidence about the behavioural consequences of each construct, which will in turn add to our understanding about the relationship between auditors and audit clients.

2.5 Summary

Based on an integration of the marketing and auditing literatures, research questions one, four and five were addressed in this chapter, on a conceptual level. Models of services marketing were discussed and their constructs described in relation to research question one. A base model was developed entirely on services marketing literature. A model containing constructs from both the gap and CS/D models was argued to be applicable to the audit service. This form of a services marketing model does not appear to have been empirically tested before, although it has been proposed in a theoretical form (for example, Bolton and Drew 1991).

The relationships between the constructs and behavioural intentions for the audit service model, are shown in Figure 2.1. This chapter also introduced, for the first
time, into the audit literature the link between behavioural intentions and perceptions of service quality. Behavioural intentions is a concept developed in the marketing literature and in the audit context, behavioural intentions are defined as managers' intentions to recommend an auditor switch or purchase of other services from the audit firm. While auditor switches and the purchase of other services have been studied by audit researchers, the nature of the behavioural factors that have an impact on managers’ intentions to switch auditors have not been investigated. This chapter reviews the related marketing and auditing literatures to commence this investigation.
Chapter 3  Attributes of Audit Quality

3.0  Introduction

In chapter two, the services marketing literature is used to develop a model of services for external auditing. This model specifies that perceptions of audit service quality are a function of expectations, performance and disconfirmation. However, in order to make this model more meaningful and to empirically test it, it is necessary to establish the nature of the attributes which comprise the expectations, performance and disconfirmation constructs. The attributes used to measure these constructs are intended to capture the elusive construct of audit service quality\(^1\). In this chapter, the auditing and marketing literatures are reviewed for the purpose of identifying some overall audit service attributes which can be used later (see chapter five) to develop a more detailed list of variables. While identifying the relevant audit quality attributes will make the service quality model operational, it also directly addresses research question two (what are the attributes of audit quality as perceived by managers). The review of the literature is in the form of an integration of the economics of auditing, behavioural audit survey and marketing literatures. Two additional purposes are achieved in this chapter. First, based only on auditing literature, the impact, on perceptions of service quality, of certain audit engagement characteristics (for example, audit firm and client size) are analysed (research question three). Second, the construct of service quality is compared and contrasted to other concepts and measures of quality, including the definition and measurement of traditional technical audit quality (research question five).

\(^1\). Each of the constructs, expectations, performance and disconfirmation, are comprised of the same set of attributes.
Based on the audit literature, four overall attributes of credibility, reliability, control and ancillary services are developed in section 3.1. In section 3.2, the audit literature relating to the impact of engagement characteristics on perceptions of audit quality is reviewed. Finally, in section 3.3 the concept of service quality and its measurement is compared and contrasted to alternative concepts of quality and measurements, including traditional technical audit quality.

3.1 Audit Service Attributes

In the economics literature, the characteristic or attribute approach has been used to capture the multi-dimensional nature of goods and services (Lancaster 1966; 1979). Under this framework, consumer preferences attach to "utility-relevant" attributes of the good or service, rather than the good or service being the direct object of utility, that is, goods and services are considered as bundles of properties and characteristics (Lancaster 1979 p. 17). The purpose of this section is to establish a framework of these attributes for the audit service. The resulting attributes will also be used to operationalise the expectations, performance and disconfirmation constructs to allow for the empirical testing of the service model developed in chapter two. The relevant attributes are those which represent the unobservable construct, audit quality as perceived by managers. It has been suggested that to ensure the validity of such a scale of attributes, its development, as much as possible, should be based on theory (for example, Babbie 1990; de Vaus 1991). The specific purpose of this section is to provide the theoretical framework on which the subsequent, more detailed development of the audit quality attributes can be based (see chapter five).

Prior audit literature relating to the attributes of the service fall into two broad categories, the economics of auditing studies and behavioural studies. Two economics of auditing studies (Palmrose 1982; Simunic and Stein 1987) are used here, to provide overall guidance for considering the myriad of audit service attributes presented in the behavioural survey literature. Tables 3.1 and 3.2 list prior
behavioural survey studies relating to the audit service. As a contrast, one other professional service, management advisory services (Patterson 1993) and the generic set of service attributes developed by Parasuraman, Zeithaml and Berry (1985; 1988) called SERVQUAL, are also listed in Table 3.1. Apart from Eichenseher and Shields (1983) and Schroeder, Solomon and Vickery (1986), all of the studies listed in Tables 3.1 and 3.2 included up to forty variables in their surveys and, therefore, employed factor analysis (see chapter five) to reduce the number of variables to a manageable size. A direct comparison of factors between these studies is not possible, because in many cases the battery of initial questions asked vary too much and even when they don't vary at all, they do not necessarily load on the same factors when measured across different services (for example, Carman 1990; Cronin and Taylor 1992; Bolton and Drew 1991; Brown and Swartz 1989). In addition, the factor labelling process involves a significant degree of subjectivity. However, the factors in Table 3.1 are aligned along the same row where there are significant similarities among the variables comprising the factor. The number of different labels along the same row is indicative of the subjective nature of the factor labelling process, that is, different words have been used to describe similar combination of variables.

All of the studies listed in Tables 3.1 and 3.2 are similar to this study in the sense that each measured managers' perceptions about the actual audit service received, but they differ in other significant respects. For example, none employed a full services marketing model, although, Armstrong and Davison (1995), Dassen (1995) and Bojanic (1991), and Parasuraman, Zeithaml and Berry (1988), used the gap model to investigate the relative importance of individual performance attributes in the formation of service quality perceptions (see section 5.3.3). Also, while each of the auditing studies included a mixture of attributes associated with the traditional role of

2. Another similarity exists between the present study and Dassen (1995) in that he also considered the impact of audit engagement characteristics on service and technical quality perceptions (see section 3.2).
the auditor (for example, whistle blowing) and the provision of the service (for example, responsiveness), unlike the present study, they did not address the differences between these two types of attributes. Moreover, traditional technical audit quality is treated as a separate overall concept of quality, rather than as a performance attribute. Finally, the two studies shown in Table 3.2 measured only the ex-ante perceptions of top management about the attributes which they perceived to be important to audit quality.

The initial source of the attributes contained in each of the studies listed in Tables 3.1 and 3.2 differs between the studies. For example, Armstrong and Davison (1995), Dassen (1995) and Bojanic (1991) simply adapted the generic set of SERVQUAL attributes to auditing. Carcello, Hermanson and McGrath (1992) and Schroeder, Solomon and Vickery (1986) used a simple “firm wide” and “audit team specific” dichotomy. However, in this study, to provide a sound basis for their development, the audit quality attributes are based on the economics of auditing literature. Basing the development of the attributes on theory will ensure their completeness while at the same time integrating economics of auditing concepts into behavioural research. Specifically, the overall audit quality attributes developed in the economics of auditing literature are summarised by Palmrose (1982) and Simunic and Stein (1987). The attributes developed by them are used to establish four overall attributes of audit quality from the perspective of managers. Palmrose’s (1982) attributes were brand name and information, reliability and ancillary services. Simunic and Stein’s (1987) attributes were credibility, control, and product line.
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<td>Tangibles</td>
<td>Tangibles</td>
<td>Quasi-professional</td>
<td>Appearance</td>
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<tr>
<td>Reliability</td>
<td>Professionalism</td>
<td>Whistle blowing / Detection ability</td>
<td>Reliability</td>
<td>Professionalism / Industry knowledge</td>
<td>Technical qualifications / Industry expertise / Audit team expertise</td>
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<td>Responsiveness</td>
<td>Straightforwardness</td>
<td>Responsiveness</td>
<td>Service</td>
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<td>Meeting deadlines / Accessibility</td>
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<tr>
<td>Assurance</td>
<td>Effectiveness</td>
<td>Partner in business</td>
<td>Assurance</td>
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Apart from Simunic and Stein's (1987) product line attribute, all of these attributes are used. The product line attribute is simply the range of other services provided by the audit firm and while it is recognised that this can be important in the choice of audit firm, the purchase of other services is treated as a behavioural intention in this study, rather than an attribute of audit quality (see section 2.4). The remainder of this section describes each of these attributes and shows how all attributes contained in previous auditing behavioural survey studies can be classified under one of them. Thus, this section describes the credibility (section 3.1.1), reliability (section 3.1.2), control (section 3.1.3) and ancillary services (section 3.1.4) attributes. Discussion of the attributes listed in Tables 3.1 and 3.2 are included in the sections to which they apply.

Table 3.2 Audit Service Attributes Based on Ex-ante Perceptions

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<tr>
<td>Auditor training</td>
<td>Auditors experience with client</td>
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<tr>
<td>Level of attention</td>
<td>Industry expertise</td>
</tr>
<tr>
<td>Planning audit</td>
<td>Responsiveness</td>
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<tr>
<td>Independence of audit team</td>
<td>Compliance with audit standards</td>
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<tr>
<td>Communication</td>
<td>Commitment to quality</td>
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Key:
*  - These were the five most important variables out of the total of 15 presented to respondents.
** - These were the five most important factors (from a total of 12) as revealed by factor analysing the responses to 41 questions related to auditors performance.

3.1.1 Credibility

While the credibility attribute is important for all services which are high in credence qualities, it is probably more important for the audit service than any other professional service. This is because, auditing is unique among services in that the outcome of the audit is not aimed at the "client", but an external third party, the
shareholder. To understand the nature of the credibility or brand name attribute in auditing, it is necessary to understand the nature of the demand for audit. The stewardship or contracting theory of demand for audit is the most widely accepted theory and is used here\(^3\).

1. **Demand for Audit**

Simunic and Stein (1987) noted that audit services are not a consumption good (service), but rather a factor of production (p. 9). Demand for audit outcomes, therefore, does not arise from differences in consumers' tastes, preferences and income. Instead, demand for audit has been inferred from the agency relationships existing within an organisation (for example, Jensen and Meckling 1976; Smith and Warner 1979; Fama 1980; Wallace 1980; DeAngelo 1981a,b; Chow 1982; Fama and Jensen 1983; Watts and Zimmerman 1986; Simunic and Stein 1987). In this literature three classes of agency conflicts are identified: owner-manager, owner-creditor and manager-employee. The first two are dealt with in this section and the third is discussed in the next section.

Auditing is closely related to accounting in contracting theory. The framework postulates that a major reason for the appointment of an auditor is to minimise the costs arising from the conflict of interest among managers, shareholders and creditors (providers of capital), in organisations in which managers do not bear the major wealth effects of their decisions (Fama and Jensen 1983). Financial accounts are presumed to be prepared as a means of monitoring the stewardship role of managers (for example, Wallace 1980). As providers of capital are assumed to be rational, they are assumed to anticipate managers' incentives to bias financial reports and consequently, shareholders are assumed to "price protect" (Jensen and Meckling

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\(^3\). Other theories of demand for audit exist, for example, information and insurance hypotheses. (Wallace 1980) and there are also social theories of audit (for example, Flint 1991).
Price protection refers to shareholders' ability to adjust the compensation of managers by adjusting the price they are willing to pay for shares. Thus, to maximise the value of the firm and their compensation, managers have an incentive to hire the services of an independent expert to attest to the accuracy of the financial statements (Jensen and Meckling 1976). Information asymmetry between managers and providers of capital about the accuracy of the financial statements is said to give rise to the need for managers to add credibility to financial reports and, thus, the demand for audit (Jensen and Meckling 1976; Fama and Jensen 1982; Simunic and Stein 1987. As a result audit quality as perceived by external providers of capital becomes important.

Support for this "contracting theory" explanation of demand for audit is provided by evidence of demand for audit among organisations characterised by a separation of ownership and control and voluntarily appointment of an auditor at a time when there was no statutory requirement to do so (Wallace 1980; Chow 1982; Watts and Zimmerman 1983).

2. Brand Name

Because the point of focus of the stewardship hypothesis is on the perceptions the providers of capital (users of financial reports) about the extent to which the audit reduces agency costs, a widely cited definition of audit quality under the stewardship hypothesis is, "the market assessed joint probability that a given auditor will both (a) discover a breach in the client's accounting system, and (b) report the breach" (DeAngelo 1981b, p. 186). That is, it is the evaluation of audit quality by users that matters and they are concerned only about the auditor's level of competence and independence. It is interesting to note that this literature implies that the concept of technical audit quality, is of concern to managers only in the context of how it is perceived by users of financial reports and that only one audit service quality attribute arises from this approach, that is, audit firm credibility with users of financial reports.
Demand for the audit firm attribute of brand name investment has been argued to be directly linked to the audit client’s desire to reduce external agency costs (DeAngelo 1981b; Simunic and Stein 1987). The auditor must have credibility with users and because the audit service is high in credence qualities, brand name or reputation is the relevant measure of that credibility. It is argued that users rely on the auditor’s brand name or reputation as a surrogate measure of audit quality (DeAngelo 1981b; Dopuch and Simunic 1982; Simunic and Stein 1987). Brand name investment serves as a collateral bond, because firms that are observed supplying levels of assurance below the market’s expectations stand to lose the value of their reputation (DeAngelo 1981b; Dopuch and Simunic 1982; Simunic and Stein 1987). This analysis is based on the economic theories of price and quality of Klien and Leffler (1981) and Shapiro (1983).

The demand for and supply of differential brand name investment has been extensively analysed and empirically tested and often reviewed (for example, Simunic and Stein 1987; DeFond 1992). Differential demand for audit firm brand name investment is assumed to vary depending on the level of external agency costs present in an organisation. Higher agency costs are assumed to lead to a demand for higher levels of brand name investment (DeAngelo 1981b; Chow and Rice 1982; Simunic and Stein 1987). Thus, theory relating to external agency relationships has been used to explain both demand for audit and the differential demand for audit firm brand name investment. In respect of the supply of differential brand name investment within the audit market, the conclusion of this literature is that audit firm size is a measure of brand name investment (DeAngelo 1981b). Therefore, Big 6\footnote{The Big 6 audit firms in Australia are the same as those in the USA, that is, Arthur Andersen, Coopers and Lybrand, Deloitte Touch Tohmatsu, Ernst and Young, KPMG, Price Waterhouse. In previous audit research predecessor firms were referred to as the Big 8.} firms have been argued to be perceived by users as providing a higher level of assurance than
non-Big 6 firms (for example, DeAngelo 1981b; Dopuch and Simunic 1982; Simunic and Stein 1987).5

Pricing studies indicating that Big 6 firm fees are higher than Non-Big 6 firm fees have been interpreted as evidence of product differentiation by Big 6 firms (Francis 1984; Palmrose 1986; Francis and Stokes 1986; Craswell, Francis and Taylor 1995). However, audit pricing evidence says nothing about the nature of product differentiation or why it exists.

The attributes related to credibility in Table 3.1 studies are tangibles. Most studies included tangibles, which is comprised of variables associated with the physical appearance of the offices and equipment used by the service provider. Schroeder, Solomon and Vickery (1986) and Carcello, Hermanson and McGrath (1992) (Table 3.2) categorised all of their audit service variables into the two overall attributes of firm-wide and team specific attributes. The variables designed to measure firm-wide features in both studies (for example, overall reputation; relative significance of total professional fees) are clearly measuring credibility. Both studies found that the five most important variables related to the audit team, rather than to the firm-wide attributes. The lack of importance placed on credibility in these studies supports the argument made in this section that credibility is used as a pre-usage surrogate for quality which tends to remain constant and therefore, may become irrelevant in the post-choice evaluation process where the client’s focus turns to the process and outcomes (Bearden and Teel 1983).

5. DeAngelo's (1981a) analysis concludes that Big 6 firms are perceived to provide a higher level of assurance because they are perceived to have a greater incentive to remain independent when faced with threats of dismissal by the client as a defence against disagreements. In contrast, the analysis of Simunic and Stein (1987) concludes that Big 6 firms are perceived to provide a higher level of assurance because they are perceived to have an incentive to provide more powerful tests. In both cases protection of brand name is assumed to deliver the incentive to provide a higher level of assurance. The link between brand name investment and quality of the outcome is well established in the literature and is not explained further in this thesis.
3.1.2 Reliability

The reliability attribute relates to the auditor's technical abilities. Simunic and Stein (1987) did not have a corresponding attribute, however, based on prior marketing and auditing literature reviewed below, it is argued to be an important dimension of audit service quality. Palmrose (1982) defined reliability simply as the level of assurance provided that the accounts are free from material misstatement, which reflects an economics of auditing perspective. Reliability defined in this way is equivalent to the overall construct of technical audit quality used in this study. Palmrose (1982) defined reliability as the ultimate outcome of the audit service rather than as a part of the process by which the service is delivered. Reliability is defined here, however, as in the services marketing literature, as the performance attributes which can be used to assess the level of technical quality delivered by the auditor.

Tables 3.1 and 3.2 show that each of the studies listed included attributes or variables related to reliability. Reliability has been conceptualised in several different ways, for example, in Table 3.2 the attributes and variables labelled auditor's experience with the client, industry expertise, auditor training, level of attention, audit planning and auditor independence, are related to reliability. Dassen (1995), Carcello, Hermanson and McGrath (1992), Schroeder, Solomon and Vickery (1986) included traditional concepts of auditor reliability in terms of independence, or “whistle blowing”, and Patterson (1993), Eichenseher and Shields (1983) and Carcello, Hermanson and McGrath (1992) included industry expertise. The reliability attribute relates to performance attributes associated with auditors' competence and technical abilities, however, it is not clear from the literature whether these attributes refer to the auditor's traditional role, or to some other aspect of auditor competence. It is suffice to say, at this stage, that the reliability performance attributes are intended to capture those attributes that can be used by managers to assess an auditor's technical abilities in the traditional sense (the level of assurance provided) and in all other senses (refer section 3.1.4).
3.1.3 Control

Simunic and Stein (1987) highlighted the existence of the control attribute and while Palmrose (1982) did not include it, given its predominance in the economics of auditing literature, it is included here. Agency costs are generated at every level of an organisation and demand for internal control arises from these internal agency costs (Jensen and Meckling 1976). External auditors can be used to augment internal control (Dopuch and Simunic 1980; Simunic 1984; Simunic and Stein 1987; O'Keefe and Barefield 1985; Abdel-khalik 1993). Internal agency costs arise because, opportunistic behaviour by subordinates may give rise to lower reported profits, thus, top management whose performance is evaluated on the basis of profits will have an incentive to demand internal control to minimise such behaviour by subordinates. The agency relationship between managers and employees gives rise to the control attribute of audit quality. Control relates to the auditor's ability to augment an organisation's system of internal control (Jensen and Meckling 1976; O'Keefe and Barefield 1985; Watts and Zimmerman 1983). This assumes that managers demand external audit to reduce internal agency costs and that while the reduction of external agency costs is the major source of demand for audit, it is not the only source.

In Australia, the demand for internal control also arises from the Corporations Act (1989), which provides that it is the responsibility of the directors to keep accounts from which true and fair financial statements can be prepared, (sections 289, 292 and 293). Organisational control will help directors to fulfil this responsibility. In addition, because several managerial decision models use financial data as an input (for example, capital budgeting, break-even analysis, inventory planning and pricing decisions), and organisational control improves the accuracy of financial data, decision making can be improved. In essence, this is the information hypothesis explanation for the demand for audit. Wallace (1980) also suggested that given the number of management decision models which use financial data as an input, audited
information could be demanded for the improvement of management decision making alone.

An external audit can contribute to organisational control in the following ways:

   Acting as a deterrent against fraud and complacency;
   Discovering fraud and errors;
   Monitoring compliance with controls; and
   Discovering weakness and making recommendations for improvement in the design of the system of internal control.

Top management can combine external audit with internal controls to achieve the desired level of control. The external auditor and internal controls are seen as substitutes in control production (Simunic 1984). With respect to this attribute, the audit service is just a factor input into the production of organisational control. Demand for external audit to augment internal control, therefore, will depend upon the price and productivity of external auditing relative to other factor inputs in this production function (for example, internal audit). Simunic (1984) assumed that external agency costs drive the audit client's choice of class of supplier (measured by size of audit firm), while internal agency problems drive the quantity of attest services purchased from that supplier. Based on the economics of auditing literature, Simunic and Stein (1987), O'Keefe and Barefield (1985) and Abdel-Khalik (1993) assumed that client size is a proxy for demand for control, the larger the company the bigger the assumed need for control.

None of the studies listed in Tables 3.1 and 3.2 included the control attribute. Its introduction, in this study, was based on the integration of the economics of auditing research and behavioural audit research. Apart from Eichenseher and Shields (1983), each of the auditing studies listed in Table 3.1 were to a large extent based on SERVQUAL. Being a generic set of attributes, SERVQUAL clearly has no attributes related to control, control being unique to the audit service. Thus, it is not surprising that the control attribute was not included in previous behavioural survey studies.
3.1.4 Ancillary Services

Palmrose (1982) is one of the very few studies, in the field of economics of auditing, to recognise formally the importance of ancillary services in the context of the economics of auditing. She broadly defined it as the process by which the audit service is delivered as well as any additional audit outcomes. However, despite its obvious relevance, this attribute has not been recognised in most studies related to the economics of auditing. In contrast, several prior behavioural audit studies have focused almost exclusively on this attribute. Some of these studies are listed in Tables 3.1 (Armstrong and Davison 1995; Bojanic 1991). It has also long been recognised in the marketing literature that various aspects of the process of providing a service have a significant impact on a client's evaluation of service quality (for example, Zeithaml 1981; Parasuraman, Zeithaml and Berry 1985; 1988; Gronroos 1990). Clearly, because of the lengthy duration of most audit engagements, the closeness between the client and auditor and the fact that the auditor's role is to monitor the client’s financial reporting activities, the way in which the auditor interacts with the client is important to the audit service. This dimension relates to the human element of the audit service and is specific to the managers' perspective of audit quality as no part of it is observable to users of financial reports.6

The ancillary service attributes found in prior auditing studies are listed in Tables 3.1 and 3.2. From the first column of Table 3.1 we can see that SERVQUAL includes at least three factors which relate to ancillary services, these being, responsiveness, assurance and empathy. The next three studies listed in Table 3.1, Dassen (1995), Armstrong and Davison (1995) and Bojanic (1991), applied the SERVQUAL instrument to the audit service. The different labelling of the factors across these studies was caused by some of the variables loading on different factors, which is a

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6 It became evident from the response rate to the survey for this thesis, that some non-executive directors also do not observe auditor performance in respect of ancillary services.
problem with SERVQUAL that has already been discussed (see section 2.2.4). Dassen's (1995) labelling was also influenced by his adaptation of the original SERVQUAL questions to the traditional audit service. Ancillary services found in these studies are obviously similar to the original SERVQUAL instrument, variations being, effectiveness, communication, et cetera. Patterson (1993) is included in the table, because he extended and empirically tested the customer satisfaction/dissatisfaction model using professional service similar to audit, management advisory services. Patterson (1993) did not rely solely on SERVQUAL to develop his scale, he used exploratory research and secondary data sources. His ancillary services include service, relationship and global. Global, refers to the ability of the service provider to call on international resources to meet the client's needs. Unlike the other studies, Eichenseher and Shields (1983) surveyed only those organisations that had recently switched auditors, but they also included ancillary services in the form of, the working relationship, meeting deadlines and range of other services.

Regarding Table 3.2, Carcello, Hermanson and McGrath (1992) included attributes from the services marketing literature where as Schroeder Solomon and Vickery (1986) tended to use attributes associated only with the traditional audit role. Ancillary attributes found in these studies are responsiveness and communication. Recalling that these studies measured ex-ante perceptions of importance of the various attributes, it is interesting to note that responsiveness was rated as the third most important attribute from a total of 41 attributes in the case of Carcello, Hermanson and McGrath (1992) and communication was rated the fifth most important attribute from a total of fifteen attributes in the case of Schroeder, Solomon and Vickery (1986). These results also illustrate the importance of the ancillary service attribute to the audit service.

The ancillary services attribute is not directly related to the auditor's traditional role, instead, based on these studies, it relates to such things as the audit team's
communication skills, their responsiveness to the client's needs and level of personal attention given to the client. Moreover, ancillary services include additional audit outcomes that are beyond the auditor's statutory obligations (Palmrose 1982). Such additional audit outcomes can be described as:

Advice relating to the interpretation and application of complex accounting standards and other disclosure requirements; and

A variety of management consulting type advice including advice about operational efficiency.

This advice represents additional audit outcomes that are distinct from "other" services, that is, distinct from advice provided by the management advisory division of an audit firm. The charge for this advice is included in the audit fee (or an appropriate adjustment is made to the fee charged for other services) and it is delivered as part of the audit service, by members of the audit team. This outcome is often set out in the form of a management letter which is presented to the client at the end of the audit. Thus, ancillary services are comprised of both process and outcome attributes.

It is argued that credibility, reliability, control and ancillary services encompass the attributes on which perceptions of audit quality are formed. The credibility attribute is well established in the auditing literature, it has been subject to considerable research, especially in the field of the economics of auditing and it is a pre-choice attribute. The control attribute and elements of ancillary services are outcomes, while reliability and other elements of ancillary services are process attributes. The reliability and ancillary services attributes have been subject to some research in the field of behavioural research. In contrast, the control attribute has been subject to very little research. Prior studies have not combined the economics of auditing literature with behavioural auditing and marketing research, to develop a set of attributes designed to capture the elusive concept of audit quality as perceived by
managers. The integration of these literatures leads to a more complete set of audit service attributes than has previously been achieved in any one study. The three overall attributes of reliability, control and ancillary services are used in chapter five as the theoretical basis for the development of a more detailed list of audit service attributes to allow for the empirical testing of the research questions.

3.2 Audit Engagement Characteristics

The audit engagement characteristics which can be expected to affect perceptions of service quality, technical quality and independence are the type of audit opinion, the duration of the auditor's appointment, the size of the audit firm and the size of the client. Other engagement characteristics identified in prior literature, such as the financial state of the client (Shockley 1981; Dassen 1995), the provision of other services by the auditor (Knapp 1985; 1987; Gul 1989; Dassen 1995), the extent of competition in the market for audit services (Knapp 1985; 1987) and the type of audit approach used by the audit firm (Knapp 1991), have not been included for various reasons. For example, the provision of other services by the auditor is treated as a behavioural intention in this thesis rather than an engagement characteristic (see section 2.4). Also, it is not possible, using a survey research design, to test for the effects of competition on the market for audit services on managers' perceptions (apart from Dassen (1995), each of these studies used an experimental research method). Finally, the level of structure inherent in the audit approach is now not considered to be of much importance (see section 2.1), and the investigation of the impact of the financial condition of the client on perceptions of quality is an area for future research. Each of these four audit engagement characteristics are discussed next in the following order, type of audit opinion (section 3.2.1), duration of the appointment (section 3.2.2), audit firm size (section 3.2.3) and audit client size (section 3.2.4).
3.2.1 Type of Opinion

The ultimate outcome of the audit is the audit opinion. The opinion can be either qualified or unqualified. A qualification is an indication that the auditor considers the financial reports misstated in some material respect. It has been argued that for managers there are costs associated with qualified audit opinions (Craswell 1988). For example, share prices may fall in response to a qualified audit opinion and to the extent to which managers’ compensation is tied to share price performance, managers will suffer a monetary loss. The audit literature, which is briefly reviewed in section 3.1.1, has as its major premise the assumption that clients may threaten an auditor with dismissal if the auditor expresses an intention to issue a qualified audit opinion. Thus, the impact of qualified opinions on perceptions of quality is crucial to understanding the auditor client relationship. Prior auditor switching studies which argue that the cause for the switch was to avoid a qualified audit opinion (Chow and Rice 1982; May 1987; Craswell 1988) are consistent with the proposition that there is a negative relationship between some aspect of audit quality (not necessarily technical quality) as perceived by managers and qualified audit opinions. However, no prior research seems to have studied the direct impact of a qualified audit opinion on managers’ perceptions.

3.2.2 Duration of the Appointment

In Australia, auditors are appointed until such time as they are removed, resign, become ineligible to act as auditor for various reasons (Corporations Act 1989). Auditor switches are relatively infrequent (Craswell 1995a) and audit tenure can, therefore, be quite lengthy. The impact of the length of tenure on service quality, technical quality and independence is not obvious from the existing literature. On a conceptual level contradictions can be found. For example, it has been argued that there is a “learning curve effect”, whereby, the incumbent auditor has a comparative advantage in discovering material misstatements (DeAngelo 1981a; Beck, Frecka and
Solomon 1988; Williams 1988). In contrast, Shockly (1981) asserted that "complacency, lack of innovation and learned confidence in the client" may arise as a result of a long tenure. The Metcalf Committee (U.S. Senate, 1977) reported a similar view. Empirical evidence, however, suggests that audit failures appear more common when audit tenure is three years or less (St. Pierre and Anderson 1984). The impact of the length of tenure on perceptions of audit quality has been studied using an experimental design research, for example, by Shockley (1981), Knapp 1991 and Chang and Monroe (1995). Using audit partners and loan officers as subjects, Shockley (1981) found that the length of tenure had no impact on perceptions of auditor independence. In contrast, Chang and Monroe (1995) found the length of tenure had a positive impact on auditors' perceptions of technical quality. Finally, using audit committee chairpersons as subjects, Knapp (1991) found that the length of tenure had a positive impact on perceptions of audit technical quality, but found no such impact on perceptions about the likelihood that the auditor would report a discovered error (independence).

3.2.3 Audit Firm Size

As noted in section 3.1 theory and a plethora of empirical research in the context of the economics of auditing, suggests that Big 6 firms are more independent and provide higher technical quality than small audit firms. Much of the empirical support for the theory has been inferred from publicly available data or survey data based on facts, rather than perceptions. Related behavioural studies include experimental studies using bank loan officers, analysts and audit clients as subjects. For example, Firth (1981) and McKinley, Pany and Reckers (1985) found that the size of the audit firm had a positive impact on loan approval decisions. Shockley (1981) found that audit partners and bank loan officers perceived large audit firms to be more independent when the level of competition in the market for audit services is high. Similarly, Shockley and Holt (1983) found that chief financial officers of banks perceived large audit firms to be more conservative. Knapp (1991) found that audit
committee members perceived Big 6 firms as providing higher levels of technical audit quality and independence. However, he also found that this perception was moderated by the types of firms to which the audit committee member had been exposed (Knapp 1991). Using bankers and audit clients as subjects and a survey research design, Dassen (1995) found no difference in perceived technical quality across audit firm size and suggested that this apparent contradiction could be explained by the "compensating effects" of the potential for small auditors to gain a thorough knowledge of their clients through their large advisory role (1995, p. 98).

It has often been asserted that users' perceptions of auditor independence can be negatively affected when a company represents a large proportion of the total fees earned by the audit firm (for example, DeAngelo 1981b). Shockley (1982) suggested that where audit firms were financially dependent on their clients they would command low levels of power in any conflict situations and that small firms were more likely to find themselves in this situation. Thus, much of the current economics of auditing literature suggests that Big 6 firms provide higher "audit quality" than Non-Big 6 firms, but only two behavioural studies seem to have considered the impact of audit firm size on managers perceptions of technical quality and independence (Knapp 1991; Dassen 1995) and only one of these (Knapp 1991) found conditional support for the suggestion that Big 6 firms provide higher quality than Non-Big 6 firms.

No previous study seems to have focused on the impact of audit firm size on perceptions of service quality. Moreover, the reasoning provided in the economics of auditing literature as to why Big 6 audit firms are assumed to provide higher audit

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7. The percentage of fees represented by any one client that is considered large, is fifteen (ICAA Members Handbook 1996, AUP 32). This includes fees from other services provided by the audit firm, because along similar reasoning, the provision of other services by the audit firm can increase the percentage of fees received from a client and thus, decrease the perceived, if not actual, level of auditor independence (for example, Shockley 1981; Knapp 1985; McKinley, Pany and Reckers 1985; Gul 1991).
quality (see section 3.1) applies only when audit quality is defined as technical quality and independence and not when it is defined as service quality.

3.2.4 Audit Client Size

Technical audit quality can decrease with increasing client size if it is assumed that large companies are complex and therefore, more difficult to audit. Dassen (1995) is among the only prior studies to have empirically addressed the impact of client size on perceptions of quality. He found that client size did not have an impact of managers' perceptions, but did have an impact on bankers' perception of technical quality. However, counter to this argument is the assertion that large companies are more likely to have good internal control systems and, therefore, their accounts are less likely to contain material errors (Craswell 1995b).

The audit literature relating to four engagement characteristics which are expected to have an impact on managers' perceptions of service quality, technical quality and independence is reviewed above. This literature is not at odds with the marketing literature, rather it can be and, in fact has been, used in this study, to expand the marketing model of audit service quality developed in chapter two. The characteristics of, type of opinion, duration of the appointment, size of the audit firm and size of the client, are integrated into the base model of services in the way shown in Figure 3.1. The relationships between the engagement characteristics and audit quality (service, technical and independence) implied in Figure 3.1 are explained in the hypotheses development section (see chapter four). Apart from Dassen (1995) no other prior study seems to have tested the impact of client characteristics on managers' perceptions of audit quality for actual engagements. However, because Dassen (1995), used the gap model (see chapter two), Figure 3.1 represents a unique model of audit service quality, it illustrates a model that both replicates and extends previous marketing and auditing research.
Figure 3.1 Model of Audit Service Quality and Engagement Characteristics
3.3 Service Quality and Technical Audit Quality

Audit quality research may improve if researchers specify the concept of audit quality which they are studying. The choice of concepts can be made from audit service quality, traditional technical quality and audit quality attributes such as the credibility. The nature of the credibility attribute was discussed in section 3.1.1 above. The purpose of this section is to improve our understanding of audit quality by comparing and contrasting audit service quality and traditional technical quality. Important differences are shown to exist. Their conceptual differences are summarised in section 3.3.1 and an alternative, more objective, means of assessing technical audit quality is explored in section 3.3.2.

3.3.1 Conceptual Differences Between Service Quality and Technical Audit Quality

The most basic differences between the audit service and technical quality constructs are presented below, in point form.

1. Technical audit quality and auditor independence are the traditional concepts of quality that are implied by the existence of external auditing and that are imposed by statutory and professional requirements. The definition of technical audit quality in the traditional sense is the level of assurance provided by the audit that the financial reports are free from material misstatements. The definition of service quality is the comparison of performance with expectations. Thus, the service quality construct is far more elusive than technical audit quality.

2. Following from the above point, the dimensions upon which technical quality can be assessed differ from those upon which service quality can be assessed. It is possible (if not feasible) to base assessments of technical quality on pre-specified auditing standards issued by the accounting profession (see the next section, 3.3.2). Service quality, on the other hand, is argued to be made up of the four overall attributes of credibility, reliability, control and ancillary services. The
exact nature of these attributes is not pre-specified introducing further subjectivity in to the assessment process.

3. Technical quality can be considered as an outcome only, but service quality is comprised of both outcomes and processes. Moreover, the benefit of the technical quality outcome to the client is not necessarily direct where as service quality outcomes and processes are directed only at the client. That is, according to mainstream audit quality research, the benefit of traditional technical quality arises only in terms of the credibility it adds to the financial reports and not in terms of the improved level of assurance that the accounts are free from material misstatements.

4. Following from the above point, technical audit quality arises from an agency relationship between managers and owners (see section 3.1.1). Service quality, on the other hand, arises from a client/supplier relationship between auditors and managers. Thus, the motivation to provide adequate levels of technical quality arises from the audit firm’s desire to maintain and build its reputation and, thereby, preserve the most important attribute of the audit service, the credibility attribute (see section 3.1.1). It also arises from the duty of care owed by auditors to shareholders whereby auditors have unlimited liability for damages suffered by shareholders who have relied on negligently audited financial reports. In contrast, the motivation to provide adequate levels of service quality arises from the audit firm’s desire to retain clients by addressing other attributes of the service. The motivation to provide high service quality also arises from a firm’s desire to differentiate itself from other, equally credible, audit firms. Gronroos (1990), for

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8. The pre-specification of these attributes describes the investigation of research question two (what are the attributes of the audit service) and the specification of the performance (expectations and disconfirmation) attributes. The subjectivity associated with the process is reduced, as much as possible, through exploratory research. The nature of this phase of the study is described in chapter five.
example, noted that technical expertise is easily copied, but service quality can be
used to create a competitive edge.

Apart from the obvious definitional differences between technical and service quality
other significant differences are evident, for example, technical quality evaluations
are made as subjective probabilities, that is, as probabilistic estimates of a specific
outcome (DeAngelo 1980; Knapp 1991). As such, it is argued to be unaffected by
expectations, instead technical quality can be assessed by observing performance
alone. Service quality, on the other hand, is shown above to be a function of
expectations, performance and the comparison of performance with expectations
(disconfirmation).

The differences between audit service and traditional technical quality are important,
because when researchers propose that a particular audit firm attribute improves audit
quality, it is reasonable to expect that they should be able to specify what dimension
of audit quality is assumed to be improved and why.

3.3.2 Measurement of Technical Audit Quality

As already noted, the traditional definition of technical audit quality is the level of
assurance provided by the audit that the financial reports are free from material
misstatements, however, no single objective measure of the level of assurance
provided is available. It has been suggested that in the absence of a single objective
measure of quality an alternative is to compare actual performance to pre-determined
standards of performance (for example, Warren 1975; Crosby 1979; Ng 1978;
Simunic and Stein 1987; Sutton and Lamb 1991). This coincides with the “design”
and “application” concepts of service quality. These concepts have been adapted to
services from the product quality literature (Gummersson 1992).

At least four generic types of quality exist (for example, Gavin 1983; Gronroos 1990;
1. Transcendent quality - which depends on personal taste and is subjective (this concept is evident in the observation that “beauty is in the eye of the beholder”).

2. Product-based quality - described with the aid of specifications, drawings and test results. In this sense quality is objectively measurable and is, therefore, the opposite of transcendent quality. Product-based quality relates to the design of a product and is measurable in terms of such things as durability or strength. This terminology reflects the manufacture of goods, for services the concept become “design” quality.

3. Manufacturing-based quality - described as "conformance with requirements" (Crosby 1979). This is primarily an internal definition, oriented towards production, not observable in many cases to someone outside the organisation. The measures used are:

   Meeting minimum specifications;
   The degree of excellence achieved or "zero defects"; and
   The degree of uniformity.

While product-based definitions are linked with design and engineering, manufacturing-based quality definitions are concerned with the production of goods according to the design specifications (Swartz, Bowen and Brown 1992). For services the terminology becomes “application” quality (Swartz, Bowen and Brown 1992).

4. User-based quality - relates to customer satisfaction and is measurable in the sense that customers can be asked to evaluate the quality of a good or service as they perceive it. It stems from the quality concept "fitness for use" introduced by Juran (1982). Its measurement is highly subjective.

Theoretically, to the extent to which it is possible to pre-specify audit work, design and application based concepts of quality can be adopted. Managers could assess the level of assurance provided by an audit by observing the inputs to the audit production process and evaluating quality according to how well the inputs match up
to standards of performance in the form of professional standards (Warren 1975; Ng 1978; Simunic and Stein 1987; Sutton and Lamb 1991). Adapting design and application concepts to the audit service: design quality refers to the audit approach developed and/or used by an audit firm (audit technology-in-place); and application quality refers to the application of that technology by the audit team.

The pre-specified standards of auditor performance come in the form of about forty auditing standards developed by The Institute of Chartered Accountants in Australia (ICAA) and the Australian Society of Certified Practicing Accountants (ASCPA) and codified in handbooks distributed to members.

Some audit firms have attempted to differentiate themselves on the bases of design-based quality, that is, on the bases of the superiority of their audit technology-in-place. Examples of these are TRAP (Touche Ross Audit Process), STAR (Deloitte, Haskins and Sells Statistical Techniques for Analytical Review), CLAA (Coopers and Lybrand Audit Approach) and CLASS (Coopers and Lybrand Audit Support System), and PW TeamMate (Price Waterhouse audit documentation software). In addition to these, Cushing (1989) argued that the degree of "structure" inherent in a firm's audit approach, could be used as a "signalling mechanism" relating to design quality by an audit firm. Audit firms employing a structured approach could claim to offer a more sophisticated audit approach than firms which use an unstructured audit approach, because the purpose of structure is to reduce variance in quality. However, using an experimental research approach, Knapp (1991) found that the type of audit approach (defined by the extent of structure inherent in the process) did not have a significant impact on perceptions of audit committee members, about technical audit quality. This element of technical audit quality has search qualities and can, therefore, be evaluated prior to choosing the audit firm. A review of current audit

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9 While the level of structure inherent in an audit approach can be a control for variance in quality, it says nothing about the actual level of quality.
approaches suggests that firms are moving towards more unstructured, business risk based audit approaches which tend to increase the amount of expert judgement required.

The ability of audit firms to differentiate themselves from other firms on the basis of their design quality is limited by the high level of the minimum quality required for all firms. The profession monitors compliance with the minimum level of design and application quality adopted by audit firms through compulsory quality control reviews (The ICAA Members Handbook 1996, APS 4 and 5). Moreover, design and application based definitions are only measurable if the standards of performance are sufficiently explicit (Swartz, Bowen and Brown 1992). Auditing standards issued by the professional bodies are only guide-lines and must be interpreted by audit firms in developing their approaches which requires a considerable amount of professional judgement to be exercised by auditors. In addition, the application of audit approaches, irrespective of the degree of structure, is inherently judgemental (for example, Cushing and Loebbecke 1986; Bamber and Snowball 1988). The quality of professional judgments is inherently difficult to assess even for experts in decision making behaviour (for example, Ashton 1983, p. 9). Therefore, managers may not have the expertise to undertake an objective evaluation of the components of the audit approach and its application. For similar reasons, the technical quality of most other professional services is difficult for clients to assess (Zeithaml 1981; Kotler and Bloom 1984; Schroeder, Solomon and Vickery 1986; Wildblood 1994). Design- and application-based concepts of quality tend to be used by suppliers of goods and services for internal quality control rather than by clients (Sutton and Lamb 1991; Swartz, Bowen and Brown 1992). Thus, in general managers are unlikely to be able to use formal design and application concepts of quality to assess technical audit quality. It could also be argued that many managers lack the motivation to assess the level of assurance provided by an audit. When objective measures of quality are not available, models of services assume that an appropriate measure to use is customer
perceptions (for example, Gavin 1983; Holbrook and Corfman 1985; Oliver 1993). Notwithstanding the potential benefits of objective measures of quality such an approach is not used in this study where audit quality is related to managers' perspectives.

3.4 Summary

This chapter reviewed the auditing literature to identify the attributes of audit quality as perceived by managers. Audit theory and prior evidence was used to develop four overall attributes of audit quality as perceived by managers. This was done in answer to research question two. The attributes of credibility, reliability, control and ancillary services were identified. While reliability, ancillary service and to some extent, credibility are attributes common to many other professional services, the control attribute is unique to the audit service. Despite this, apart from O'Keefe and Barefield (1986), no prior audit study using perception data, has included the control attribute. These overall attributes form the theoretical framework upon which the subsequent more detailed development of the audit quality scale can be based. The method used for this detailed development and the results of the empirical testing are described in chapters four and five respectively.

This chapter also contained the literature review relating to the third research question. In this regard, four audit engagement characteristics were identified, type of audit opinion, duration of the engagement, size of the audit firm and size of the audit client. These were then integrated into the service quality model developed for the audit service in chapter two. Finally, the conceptual differences between service quality and technical audit quality were highlighted in this chapter. An understanding of these definitions of audit quality will also provide further evidence about the nature of the relationship between auditors and their clients. An objective measure of technical audit quality was investigated, but it was concluded that too many limitations are imposed on management to use this quality measurement technique.
Chapter 4  Hypotheses Development

4.0 Introduction

In this short chapter the hypotheses which arise from the analyses contained in chapters two and three are developed. The hypotheses are designed to test the relationships proposed in the model of audit services presented in Figure 4.1. In chapter two, it is argued that the form of the services model most suited to the external audit service is that shown in Figure 4.1. In summary, it specifies that the overall service quality construct is a function of expectations, performance and disconfirmation. However, it is noted that, expectations have only an indirect relationship to service quality, via disconfirmation. It is further noted that the performance construct has both a direct and an indirect relationship with service quality and that the indirect relationship occurs via disconfirmation. Thus, the disconfirmation construct is argued to be a function of expectations and performance, and service quality is argued to be a function of performance and disconfirmation. The base service model is expanded, in chapter three, to include the overall construct of traditional technical audit quality and various audit engagement characteristics. Traditional technical audit quality is, in turn, argued to be influenced by performance alone. The engagement characteristics considered are those reviewed in section 3.2, namely, the type of audit opinion, the duration of the auditor's appointment, the type of audit firm (Big 6/Non-Big 6), and the size of the client. Apart from this thesis, the effects of audit engagement characteristics on perceptions of technical quality for actual audits, appear to have been tested only by Dassen (1995). The effects of audit
engagement characteristics on audit service quality, however, do not appear to have been tested before.

Finally, based on the review of the marketing literature relating to behavioural intentions (see section 2.4), managers' perceptions of service and technical quality are hypothesised to influence their behavioural intentions in respect of recommendations to retain the auditor and to purchase other services from the audit firm.

All of the relationships proposed by the hypotheses are depicted in Figure 4.1 and analysed in the relevant sections of this chapter. The organisation of this chapter is based around each of the overall concepts of quality or dependent variables, in that, all of the hypotheses contained in a section relate to the same concept of quality or dependent variable. For example, all hypotheses relating to disconfirmation are contained in section 4.1. Similarly, hypotheses relating to service quality (section 4.2), technical quality (section 4.3), independence (section 4.4) and behavioural intentions (section 4.5) are contained in their relevant sections.

4.1 Hypotheses Relating to Disconfirmation

4.1.1 Expectations.

The relationship between disconfirmation, expectations and performance is well established in the customer satisfaction/dissatisfaction (CS/D) literature (for example, Oliver and DeSarbo 1988; Tse and Wilton 1988; Patterson 1993).
Recalling that disconfirmation is a psychological assessment of the extent to which actual performance falls short of, meets or exceeds expectations, clearly the higher the expectations of manager the more difficult it is for auditors’ actual performance to meet or exceed expectations and the lower disconfirmation will be. That is, higher levels of expectations are expected to be associated with lower levels of disconfirmation and vica versa. Thus, a negative relationship between disconfirmation and expectations is hypothesised and is stated as follows:

H1 Expectations will have a negative impact on disconfirmation.

4.1.2 Performance

Performance is expected to be positively related to disconfirmation, because, the higher the level of actual performance, the more likely it is to be perceived to be meeting or exceeding expectations. The related hypothesis can be stated as follows:

H2 Performance will have a positive impact on disconfirmation.

4.2 Hypotheses Relating to Service Quality

In this section, in addition to the marketing concepts of performance and disconfirmation, an audit engagement characteristic, type of opinion issued by the auditor, is also hypothesised to have an impact on service quality.

4.2.1 Performance

As noted in chapter two perceived performance has been found to have a direct impact on CS/D (for example, Churchill and Surprenant 1982; Tse and Wilton 1988;
Patterson 1993) and more specific to this study, on service quality (Cronin and Taylor 1992; Drew and Bolton 1991). The hypothesis arising from this can be stated as:

H3 Performance will have a positive impact on service quality.

That is, the higher the level of actual performance, the higher will be the level of perceived service quality.

4.2.2 Disconfirmation

The disconfirmation construct was shown, in chapter two, to be an important mediating variable in the CS/D literature, but it was also noted that, Bolton and Drew (1991) found that perceptions of service quality are directly affected by disconfirmation. Based on this, the following hypothesis is tested:

H4 Disconfirmation will have a positive impact on service quality.

That is, higher levels of disconfirmation will be associated with higher levels of service quality. This is an intuitively obvious statement when it is remembered that the definition of service quality is the difference between actual performance and expectations and that disconfirmation is a measures of this difference.

4.2.3 Type of Opinion

The type of audit opinion issued is a service characteristic unique to the audit service and no prior study seems to have tested its impact on perceptions of audit quality (service, technical or independence). Some evidence exists to suggest that when an auditor issues a qualified audit opinion, audit clients are more likely to switch audit firms than when an unqualified opinion has been issued (for example, Chow and Rice
1982; Smith 1986; Craswell 1988). While the issue of a qualified audit opinion will not always lead to something as drastic as a switch of audit firm, it can reasonably be expected to have a negative impact on perceived service quality. Moreover, much of the audit quality literature reviewed in section 3.1.1 has as its most basic premise the belief that managers desire to avoid qualified audit opinions, and that they will threaten the auditor with removal if the auditor qualifies his/her opinion. To some extent, hypothesis 5 (H5) addresses this premise. While it would be difficult, using a survey research method of actual cases, to obtain accurate data about management pressure against auditors, in respect of those auditors who have chosen to remain independent, managers may harbour negative feelings and this could be reflected in their perceptions of service quality. Management are assumed to incur costs when faced with a qualified audit report (Craswell 1988), thus they may resent the auditors for imposing such a cost on them. Based on this reasoning it is hypothesised that:

H5 Qualified audit opinions will be associated with lower levels of service quality.

4.3 Hypotheses Relating to Technical Quality

Managers' perceptions of traditional technical audit quality is argued, in this section, to be influenced by the marketing concept of performance and the audit engagement characteristics, length of tenure, audit firm size and client size.

4.3.1 Performance

The link between technical audit quality and expectations, performance and disconfirmation has not been studied previously; the concept of technical audit
quality does not exist in the service marketing literature. However, it is argued that the performance construct alone is associated with technical audit quality, that is, unlike service quality, the disconfirmation and expectations constructs are argued not to have an impact on technical quality. This is, because, technical quality is an absolute measure unlike service quality which is a comparison of actual performance with expectations. Technical quality is measured as a probability that the auditor will discover a given misstatement. Thus, it is an estimate, based on observation of actual performance, that a certain, well defined, outcome will occur. In contrast, service quality is measured as a rating about an undefined quality construct. Dassen (1995) seems to be the only other study which has tested the impact of a multi-attribute performance construct on perceptions of perceived technical audit quality, however, his measure of technical quality differed from that used in this study (see section 5.2). He found a significant, positive relationship between technical quality and various performance attributes. Thus, it is hypothesised that:

H6  Performance will have a positive impact on technical quality.

That is, higher levels of performance will be associated with higher levels of technical quality.

4.3.2 Length of Tenure

Very little is known about the length of tenure on perceptions of audit quality (service, technical and independence). In section 3.2.2 it was noted that on a conceptual level the direction of the impact is not clear. On one hand, it has been argued that there is a "learning curve" associated with audits and, thus, we can expect
a positive relationship between the duration of appointment and perceptions of quality. On the other hand, long tenure could be associated with complacency, thus, we can expect a negative relationship between tenure and perceptions of quality. Moreover, from management's point of view, it is difficult to argue for a particular impact for this characteristic on service quality. For example, a long-term tenure may not necessarily imply that the auditor has been retained because perceptions of service quality are high. While the client may regard the quality provided by to audit firm as low, they retain the firm, because auditor switching is costly (Craswell 1985). Thus, service quality is not expected to be affected by audit firm tenure in any reasonably predictable pattern. Similarly, managers' perceptions of independence are not expected to be influenced by the length of the auditor's tenure.

In contrast, the empirical evidence reviewed in section 3.2.2 suggests that there is a positive relationship between audit tenure and technical audit quality (Knapp 1991; Chang and Monroe 1995). Based on the empirical results a positive relationship between length of auditor tenure and technical quality is hypothesised.

H7 Audit firm tenure will have a positive impact on technical quality.

4.3.3 Audit Firm Size

Perceived service quality is affected by the extent to which actual performance meets, exceeds or falls short of expectations (see chapter two) and expectations can be assumed to be affected by the nature of the audit firm chosen and price\(^1\). If this assumption is accepted, it can further be assumed that clients of Big 6 firms have

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\(^1\) In marketing literature expectations are argued also to be affected by prior experience with the product or service and prior attitude towards the product or service (Patterson and Johnson 1996).
higher expectations than clients of Non-Big 6 firms. Thus, provided both Big 6 and Non-Big 6 firms are meeting their clients' expectations, Big 6 clients will, on average, not rate service quality higher than non-Big 6 clients, even if the performance of auditors from Big 6 firms is, on average, better than the performance of auditors from non-Big 6 firms. A comparison of service quality perceptions across audit firms is a measure of how closely audit firms are able to perform to their clients' expectations rather than an absolute measure of quality. In contrast, as noted in section 3.3, technical quality assessments are not the result of a comparison to expectations, instead, it is a probabilistic estimate of a specific outcome. Given the higher levels of investment in training and technology implied by the size of the audit firm (for example, Simunic and Stein 1987; see section 3.1.) a positive relationship between audit firm size and technical quality is hypothesised.

H8 Audit firm size will have a positive impact on technical quality.

4.3.4 Audit Client Size

The impact of client size on service quality does not appear to have been addressed in either the auditing or marketing literatures. There is no prior reasoning to expect client size to have an impact on service quality. In contrast, Dassen (1995) found that bankers perceived technical quality as decreasing with increasing client size. He noted that this was consistent with the reasoning that large companies are complex and therefore, more difficult to audit. A similar hypothesis is tested here:

H9 Client size will have a negative impact on technical quality.
4.4 Hypotheses Relating to Independence

Auditor independence is a fundamental part of traditional audit quality. Unless auditors are seen, by users of financial reports, to be independent, an audit will add no value. It is so fundamental to audit quality that most studies of audit quality should consider it, at least to some extent. Managers' perceptions of auditor independence are hypothesised to be influenced by the type of audit opinion issued and the size of the audit firm.

4.4.1 Type of opinion

A qualified audit opinion is a sign that the auditor has been independent in respect of the matters covered by the qualification. It is, therefore, reasonable to expect that perceptions of auditor independence will be positively affected by qualifications. The following hypothesis incorporates this reasoning:

H10 Qualified audit opinions will be associated with higher levels of independence.

In contrast, there is no intuitively appealing reasons to expect qualified audit opinions to impact perceptions of technical quality.

4.4.2 Audit Firm Size

The plethora of literature relating to the economics of auditing, which is briefly reviewed in section 3.1, argues that Big 6 audit firms are more independent than non-Big 6 firms. Whether or not this is reflected in managers' perceptions is tested by the following hypothesis:
H11 Audit firm size will have positive impact on independence.

4.5 Hypotheses relating to Behavioural Intentions

The marketing concept of behavioural intentions is introduced into the auditing literature by the hypotheses contained in this section. Both the overall concepts of audit quality, service and traditional quality, are expected to have an impact on behavioural intentions.

4.5.1 Service Quality

As noted in section 2.4, the marketing literature has established that both customer satisfaction/dissatisfaction and service quality can have an impact on future behavioural intentions to re-purchase the service from a given supplier (Oliver 1980; Bitner 1990; Patterson 1993; Taylor and Baker 1994). Thus, it is hypothesised that:

H12 Service quality will have a positive impact on behavioural intentions.

However, to define behavioural intentions, for the audit service, as the intention to repurchase the service from the same supplier, is somewhat problematical, because auditor switches are relatively infrequent and managers do not have sole responsibility for the removal and appointment of auditors (see section 2.4). Therefore, to allow for the adoption of the concept of behavioural intentions to the audit service, behavioural intentions are defined as, managers' intentions to recommend:

- at the next review of the audit firm's appointment that it be retained;
- the purchase of other services from the audit client; and
the audit firm to a colleague.

The purchase of other services from the audit firm represents an alternative behavioural intention in this context. Managers are argued to observe the nature of the audit service to assess the level of the quality likely to be provided in respect of other services. Thus, pre-purchase uncertainty about the quality of other services provided by the audit firm, is reduced with exposure to the audit service.

4.5.2 Technical Quality

It was also noted in section 2.4 that marketing research has shown that technical quality can also have an impact on behavioural intentions (Sweeney, Soutar and Johnson, 1997). On the basis of this, it can be hypothesised that:

H13 Technical quality will have a positive impact on behavioural intentions.

However, the concept of technical quality used in marketing research differs greatly from that used in auditing research. For this reason, this hypothesis will be tested using two different measures of technical quality. First, traditional technical audit quality will be used and second, a measure, similar to that used in marketing research, will also be used. Specific details of these measures are contained in the next chapter where the operational definition of each of the research variables are given.

4.3 Summary

This chapter develops the hypotheses which arise from the theoretical investigation of each of the research questions\(^2\). Hypotheses one to four are based on the services

\(^2\) No formal hypotheses are stated for research question five (differences between service and technical quality), because the empirical investigation of this question is based on the results of the
marketing model developed for auditing in chapter two. Hypotheses five to eleven (excluding six) relate to the impact of four engagement characteristics on service quality, technical quality and independence. Finally, hypotheses twelve and thirteen relate to the impact of technical and service quality on audit clients' behavioural intentions. The next chapter describes the research method adopted and the data collection process in detail.

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empirical testing of research question two. Until the empirical results for question two are obtained the empirical investigation of research question five is not possible.
Chapter 5  Research Method

5.0 Introduction

This chapter describes the research design used to address empirically the research questions posed in this thesis. The research method deals with the method of data collection and analysis. Specifically, the issues addressed by the research design are, the development of a detailed set of expectations, performance and disconfirmation variables, the operational definition of the other research variables, the design of the survey instrument and the method of data analysis.

The method of data collection is described in section 5.1. This section describes the overall research and the survey instrument design as well as its administration. Section 5.2 develops the operational definition of each of the research variables and, finally, section 5.3 describes the method used to analyse the data, including the tests of the hypotheses.

5.1 Type of Research Design

To address the posited issues, an experimental design in a laboratory setting or a descriptive field study design could be adopted (for example, Cardozo 1965). However, the current trend in services marketing research is towards both exploratory and descriptive research designs (for example, Oliver and Swan 1989; Bolton and Drew 1991; Zeithaml, Parasuraman and Berry 1991; Patterson 1993). Moreover, the relationship between managers and auditors is long-term and the development of perceptions of quality can be expected to be complex and therefore, difficult to capture in an experimental design. Therefore, the research design adopted here is exploratory and descriptive and in the form of a highly structured self-administered questionnaire. In completing the questionnaire, managers of audit clients were asked to base their responses on their perceptions of actual auditor performance.
5.1.1 Scale Development

First, it was necessary to ensure construct validity and reliability by including the relevant expectations, performance and disconfirmation variables in the data collection instrument. The relevant variables are those which at least partially represent the unobservable construct, audit quality as perceived by managers. To achieve this, the scale developed must be both valid and reliable (Norusis 1994; Babbie 1990; de Vaus 1991). Validity of a scale means it measures what it is intended to measure. Reliability means that the measuring instrument does not produce different results when different people administer it and when alternative forms are used (Norusis 1994). While the question of statistical reliability is considered in chapter six, validity is considered here. The first requirement for the development of a valid scale is that it needs to be rooted in a sound conceptual specification (Babbie 1990; de Vaus 1991). The purposes of chapters two and three are to provide this specification as much as is possible. Chapter three identified the four overall audit quality attributes of credibility, reliability, control and ancillary services. It was argued in chapter three, that the credibility attribute is a pre-choice attribute which is less important in the post-purchase evaluation process than the reliability, control and ancillary services attributes. Consequently, it was decided that the other two attributes, control and ancillary services would dominate the research instrument with only one question relating to credibility being included.

As noted in chapter three the reliability and ancillary services attributes, in particular, encompass many varied aspects of the audit service not captured by the control and credibility attributes. It was also noted in chapter three that currently there is no well developed theory to guide the development of individual reliability and ancillary services variables. When theory does not provide sufficient guidance to enable the development of variables to capture the construct, the next step in scale construction is to develop initial indicators of the construct (Malhotra 1981; Babbie 1990; de Vaus 1991). The initial list of variables to capture the reliability, control and ancillary
services, was generated through the review of the behavioural audit survey literature and exploratory research. This review was presented in chapter three. The exploratory phase took the form of personal in-depth interviews with four high ranking managers of audit clients and three audit partners. In addition, one Big 6 accounting firm provided access to the results of a national survey research report dealing specifically with audit and other accounting services. Four other Big 6 firms and one Non-Big 6 firm provided copies of their client service surveys (but not the results). These secondary data sources dealt specifically with perceptions of audit service quality, variable importance and the impact of engagement characteristics on perceptions.

Variables designed to capture the control attribute are relatively easier to define than the reliability and ancillary attributes, because its meaning is clearer. Control refers to the auditor’s contribution to the entity’s system of internal control and its measure is based on the following four variables:

Identification of weaknesses in the system of internal control;
Augmentation of the system of internal control;
Deterring fraud; and
Contribution to the accuracy of the accounts.

The next step was to subject the initial list of attributes to independent review. This was carried out by three senior managers, and six marketing and auditing academics, including two who specialise in this type of study. The questionnaire was then pre-tested by eight senior managers/executives of audit clients. In the covering letter they were specifically asked to identify any difficulties or ambiguities they experienced with the instrument. This procedure resulted in some minor changes being made to the wording of some of the expectation, performance and disconfirmation variables and the deletion and addition of other variables. The final questionnaire contained 28
designed to measure the reliability, control and ancillary service attributes. A copy of the questionnaire is contained in appendix I.

5.1.2 Unit of Response

Care must be taken in identifying the unit of response in surveys involving organisations because, responses to the questions may vary depending upon who within the organisation is asked to complete it (Phillips 1981; Lynn 1987). For example, in the case of the auditing service, managers who are not directors may be concerned only with obtaining an unqualified audit report at the cheapest possible price with minimum disruption and without any concern for the effectiveness or quality of the process (Porter 1990; BLEC p. 56). However, directors have an incentive to be concerned about the technical quality of the audit, because they have statutory obligations to shareholders and incentives to reduce internal agency costs (section 3.1.2). Several marketing studies have investigated the nature of organisational buying centres (for example, Johnston and Bonoma 1981, Lynn 1987, Kohli 1989). The motivation for this research has been the desire to enhance the representativeness of responses to market research surveys involving industrial buyers and, thus, improve marketing efforts by being able to target the most influential people in an organisational buying centre. To reduce the risk of obtaining an unrepresentative response Phillips (1981) suggested that at least two individuals from the target organisations should be asked to complete the survey. Their responses should then be compared and any significant differences investigated and/or deleted from the sample.

Thus, it was planned that the unit of response include a director of the audit client as well as the chief financial accountant. Chief financial accountants were chosen, because discussions with auditors and managers revealed that they have extensive contact with auditors and therefore, could be expected to form perceptions about their performance. Moreover, it seems reasonable to expect that the opinions of chief
financial accountants will be sought by directors when the external auditor's performance is under review. This view was confirmed during the exploratory phase of the research by comments received from chief financial accountants.

5.1.3 Questionnaire Design

The data collection instrument was a self-administered, mailed questionnaire with an accompanying explanatory letter (see appendix I). The covering letter explained the nature of the research and stated that it was endorsed by The Institute of Chartered Accountants. As recommended by Babbie (1990), the questionnaire was divided into distinctive sections to aid the respondents understanding of the different information requirements. It was a lengthy questionnaire, containing six sections and began with general instructions and included a short statement at the beginning of each section, about the content and purpose of the section.

The order in which questions are asked is assumed to affect the responses. For example, Babbie (1990) suggested that, for mailed questionnaires, it is better to start with the most interesting questions with threatening questions asked later and demographic questions last. Thus, in this survey, questions relating to expectations, performance and disconfirmation were presented in the first two sections of the survey instrument. In section 3, technical quality and overall service quality were presented and section 4 dealt with behavioural intentions were measured. Questions relating to the duration of the external auditor's appointment and the size of the internal audit division were included in sections 5 and 6 respectively. Finally, questions relating to the respondent's demographic details were included. At the beginning of the questionnaire and at the beginning of each relevant section the respondent was reminded to use their organisation's current auditor as the reference point for answering the questions.
5.1.4 Data Collection Procedures

Initially 482 companies were randomly selected from the Who Audits Australia 1994? data bank (Craswell 1994). This data bank contains virtually all companies listed on the Australian Stock Exchange. For each company selected, the company's address and the names of one executive and one non-executive director were identified from the 1994 financial statements. Using this sample, 200 companies were contacted by telephone to obtain the name of their chief financial accountant. Each of these people were then sent an envelope containing a covering letter, the questionnaire and a pre-paid self addressed envelope. A total of 1032 validly addressed questionnaires were sent to 482 companies¹.

5.2 Operational Definition of Research Variables

This section describes the operational definitions of all of the research variables. The research variables consist of service quality, expectations, performance, disconfirmation, technical audit quality, independence, audit engagement characteristics and behavioural intentions.

5.2.1 Service Quality

The service quality construct is operationally defined in a manner consistent with most other prior marketing literature (for example, Parasuraman, Zeithaml and Berry 1985; 1988; Brown and Swartz 1989; Bolton and Drew 1991). Respondents were asked (in question 6) how would they rate the overall quality of the service provided by the audit firm. They were asked to indicate their response on a 7 point bi-polar scale, labelled, at one end “Poor” and at the other, “Excellent”.

¹ By the time the questionnaires were mailed several of the people listed as directors in the 1994 annual report no longer held their directorships. These people were identified whenever a questionnaire package was returned, unopened, with “no longer with this company” or something similar written thereon. These envelopes, which totaled 132, were not included in the count for valid questionnaires sent.
5.2.2 Expectations

As discussed in chapter two expectations have been conceptualised and measured as (a) normative, that is, ideal, equitable or deserved, and (b) expected, that is, a prediction, based on experience of what performance will probably be (for example, Zeithaml, Parasuraman and Berry 1991; Myers 1991; Oliver 1993). It was decided to use the normative or "should be" expectations, because of its predominance in the more recent services quality literature (Zeithaml, Parasuraman and Berry 1991; Brown and Swartz 1989). A 7-point bi-polar likert scale from "strongly disagree" to "strongly agree" was used to measure perceptions in respect of 30 expectations variables developed through the qualitative research described in chapter three and section 5.1.1.

5.2.3 Performance

Consistent with most other relevant services marketing research cited in this thesis, to measure performance, respondents were asked how the audit firm performs in respect of the same 28 variables upon which expectations were elicited. This they did by indicating on a 7 point bi-polar scale the extent to which they "disagreed" or "agreed" with the statements regarding their auditor's performance. An example of a typical statement is:

"The audit firm's work is technically accurate."

5.2.4 Disconfirmation

Disconfirmation is defined as the extent to which performance is perceived to exceed, meet or fall short of expectations. As argued in chapter two, more conceptual and empirical support exists for disconfirmation to be viewed as a psychological construct

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2 two extra expectations questions were included in the survey instrument, these related to industry specialisation. Given that performance on these variables can be measured objectively (eg. market share of industry) corresponding performance and disconfirmation questions were not included. Although, for the purposes of this thesis this was not done.
rather than being arithmetically calculated as the difference between expectation and performance scores.

Consistent with measures of disconfirmation used by Armstrong and Davison (1995), Hausknecht (1990) and Bolton and Drew (1991), respondents were asked to assess performance on a 7 point scale, with the three labels "much worse than expected", "about the same as expected" and "much better than expected" positioned at the appropriate intervals on the scale.

Similar to performance and expectations, the multi-dimensional nature of services is assumed to lead to multiple disconfirmation perceptions (Carman 1990; Oliver 1993). Given the number of different variables included in the question battery and their potentially differential effect on quality perceptions, it was decided that disconfirmation be measured for each variable. This resulted in a lengthy questionnaire.

5.2.5 Technical Quality

In auditing, while technical quality can easily be defined, it cannot be measured objectively, thus it is measured as a subjective probability (see section 2.1). Seven questions were used to define the concept of technical audit quality and respondents' were asked to rate their auditors on each of them. The statements were developed from a list of auditors' duties contained in The Institute of Chartered Accountants in Australia, Members' Handbook (AUS 210), and are listed below.

Fraud;
Illegal acts;
Mistakes;
Accounting judgement errors;
Income smoothing;
Internal control deficiencies; and
Going concern problems.

These statements were listed in random order and respondents were asked to separately rate the auditor's chances of discovering each of the misstatements. Responses were measured on a 11 point bi-polar scale labelled at one end "No chance" and at the other "Certain". Technical quality is an overall measure of the quality of the auditor's statutory and professional duties, without the "service" component. While studies which adopted an experimental design have measured audit technical quality in this way (for example, Knapp 1991), the only other prior survey study appears to be Dassen (1995). However, Dassen's (1995) design differed in that he measured managers' perceptions of technical quality on a 7 point bi-polar scale, labelled "agree" and "disagree" which is similar to the scale used in this study to measure the expectations, performance and disconfirmation constructs. In this thesis, consistent with prior experimental design audit studies, technical quality is measured as a subjective probability. This is consistent with the measure of technical quality, in the economics of auditing literature, as the market perceived subjective probability (for example, DeAngelo 1981)

5.2.6 Independence

Independence is the cornerstone of the auditing profession and any measure of audit quality should take independence into account. Independence was tested in two ways. First, respondents were asked what they believed to be the chances in 10 that their auditor would report material disagreements, if any developed, between management and the auditor to the audit committee. Second, a similarly worded question was asked about the chances that the auditor would issue a qualified audit report in the event that the financial reports were materially misstated. This was also measured on an 11 point (0-10) bi-polar scale labelled, "No chance" and "Certain". Again, this represents a unique measure of independence in survey method research
and is similar to the wording used in experimental design studies (for example, Knapp 1991).

5.2.7 Audit Engagement Characteristics

Four audit engagement characteristics are identified from the audit literature reviewed in chapter three: audit firm size, client size, type of opinion and duration of the engagement. Information relating to the audit firm, size of the company and the type of audit opinion were obtained from the Who Audits Australia? (1995) data base (Craswell 1995a). Company size was measured in terms of book value of total (group) assets. The duration of the auditor's appointment was elicited in question 4 of the survey instrument in intervals of 1, 2, 3, 4 or 5 or more years.

5.2.8 Behavioural Intentions

Because auditors are appointed for life unless they resign or are removed (Corporations Act 1989, section 329), "re-purchase" intentions are measured in three different ways. Respondents were asked to indicate how likely is it that they would:

- At the next review of the auditor's appointment, recommend that the auditor be retained;
- Recommend the audit firm to a colleague; and
- Recommend the purchase other services from the audit firm.

Consistent with prior marketing studies involving behavioural intentions (see section 2.4), behavioural intentions were measured on an 11 point bi-polar scale, where 0 was labelled "No chance" and 10 was labelled "Certain".

5.3 Data Analysis

The preceding sections of this chapter described how the major constructs were operationalised in this study. This section introduces the statistical methods used to analyse the data collected. The principal methods used are factor analysis and regression analysis.
Factor analysis is used to:

Reduce the number of variables to a manageable size for subsequent statistical analysis of the hypotheses;

Confirm the validity of the variables intended to measure the overall attributes of reliability, control and ancillary services; and

Investigate the components of the ancillary services attribute.

Details of the factor analysis method and process adopted are provided in section 5.3.1 below.

The purpose of the regression analysis used in this thesis is to:

Test the hypotheses; and

Determine the relative importance of the performance factors in the formation of perceptions of technical and service quality.

The regression models that achieve the above purpose are developed in section 5.3.2 and 5.3.3.

5.3.1Factor Analysis

Twenty-eight variables were used to measure expectations, performance and disconfirmation. Clearly, the number of variables needed to be reduced to simplify subsequent statistical analysis and to investigate empirically the second (what are the attributes of audit quality as perceived by managers?) and fifth research questions (what are the differences between technical and service quality?). Factor analysis is commonly used to reduce the number of variables to a manageable size. An additional benefit of factor analysis is that it may reveal groupings of variables that would not otherwise have been thought of and thus allows for a more sophisticated conceptual analysis of research question two (de Vaus 1991).
There are a number of different methods of extracting factors (for example, Norusis 1994). Principal components analysis was used because it gives rise to factors which are uncorrelated with each other (Norusis 1994). In subsequent analysis the resulting factors are used in regression analysis and this requires that the factors be independent of each other. This section describes the nature of the factor analysis applied.

1. Suitability of data for factor analysis

In factor analysis correlations between variables are assumed to be caused by some third common factor. Thus, correlations among the variables is a measure of suitability of a set of data for factor analysis. The Keiser-Meyer Olkin (KMO) measure of sampling adequacy is one way of assessing the suitability of a set of variables for factor analysis (Norusis 1994; de Vaus 1991). This is done by comparing the correlation between pairs of variables with their partial correlation. KMO values fall between 1 and 0 with values below .5 indicating that the correlations between the variables as a whole are not sufficient to make factor analysis appropriate. KMO values above .7 indicate the existence of common factors among the variables (de Vaus 1991; Norusis 1994).

Another way to test correlations among the variables is to test the hypothesis that the correlation matrix is an identity matrix. Bartlett’s test of sphericity tests this hypothesis (for example, Norusis 1994). If this test is significant at the accepted levels, factor analysis can be employed.

Individual variables are excluded from the factor analysis in accordance with accepted guidelines (for example, de Vaus 1991; Norusis 1994), for any one of the following reasons:

- Low correlations with all other variables;
- Falls into a factor by itself;
- Loads on more than one factor;
Has a factor loading below .5;
Has a low number of observations; or
Is difficult to interpret given the other variables in the factor.

2. Factor Extraction

As noted above principal components analysis was used to extract factors. The first principal component is the linear combination of the variables which accounts for the largest variance in the sample (Norusis 1994). The next combination accounts for the next largest amount of variance and so on. The aim of principle components factor analysis is to minimise the number of factors necessary to capture the maximum amount of the total variance. The decision about how many factors to extract is made with reference to:

A statistic called eigenvalue;
The amount of cumulative variance explained by each factor;
A scree plot; and
Factor interpretability.

The eigenvalue indicates the amount of variance in the pool of original variables that the factor explains (de Vaus 1991). Only factors which have an eigenvalue greater than one are generally included (for example, Norusis 1994; de Vaus 1991).

It should also be noted that without rotation, the initial factor solution is difficult to interpret. This is because one variable can load on more than one factor and it is difficult to identify meaningful factors. To achieve a factor solution which is more easily interpreted one of three factor rotation methods is available on SPSS. First, varimax attempts to minimise the number of variables which have a high loading on a factor. Second, quartimax minimises the number of factors needed to explain a variable. Third, equamax is a combination of varimax and quartimax (Norusis 1994). Each of these rotation methods yielded similar results when applied to this data.
5.3.2 Regression Models-Hypotheses Testing

Ordinary least squares regression analysis is used to test the hypotheses and five regression models are implied by the relationships presented in the thirteen hypotheses developed in chapter four. Each of these models are described in this section and the operational definition of the variables contained in each model, is contained in section 5.2 above.

1. Disconfirmation, Model 1, H1 and H2

Hypotheses H1 and H2 are combined into the same model, because the disconfirmation construct is the dependent variable in both hypotheses. They relate to the impact of expectations and performance on disconfirmation and are stated as follows:

H1 Expectations will have a negative impact on disconfirmation.
H2 Performance will have a positive impact on disconfirmation.

Thus, to study the impact of these variables on disconfirmation the following regression model is used:

\[ \text{DISC}_x = a\text{EXP}_x + b\text{PERF}_x + \text{constant} \]

Where:

\[ \text{DISC}_x = \text{disconfirmation value}^{3} \text{ for case x (see section 5.2.4)} \]
\[ \text{EXP}_x = \text{expectations}^{2} \text{ value for case x (see section 5.2.2)} \]
\[ \text{PERF}_x = \text{performance}^{2} \text{ value for case x (see section 5.2.3)} \]

---

3 This value is calculated after factor analysis. First a value is obtained for each of the disconfirmation factors for each case. The factor value is simply the average of the variables in the factor. The four factor averages are then added and averaged again to obtain a single disconfirmation figure for each case. A similar calculation is done for expectations and performance. This approach is consistent with prior marketing literature.
2. Service Quality, Model 2, H3, H4 and H5

Model 2 combines all the hypotheses in which service quality is the dependent variable (H3, H4 and H5). These hypotheses relate to the impact of performance, disconfirmation and the type of audit opinion on service quality and are stated as follows:

H3  Performance will have a positive impact on service quality.
H4  Disconfirmation will have a positive impact on service quality.
H5  Qualified audit opinions will be associated with lower levels of service quality.

Thus, to operationalise these hypotheses the following model is used:

\[ SQ_X = a \text{DISC}_X + b \text{PERF}_X + c \text{OPIN}_X + \text{constant} \]

Where:

- \( SQ_X \) = service quality statement for case \( x \) (see section 5.2.1)
- \( \text{DISC}_X \) = disconfirmation value for case \( x \) (see section 5.2.4 and footnote 2)
- \( \text{PERF}_X \) = performance value for case \( x \) (see section 5.2.3 and footnote 2)
- \( \text{OPIN}_X \) = type of audit opinion for 1995 for case \( x \), dummy variable 0 unqualified, 1 qualified (see section 5.2.7).

3. Technical Quality, Model 3, H6, H7, H8 and H9

The third regression model relates to hypotheses H6, H7, H8 and H9 and includes technical quality as the dependent variable and performance, length of tenure, audit
firm size and client size as the independent variables. Each of the related hypotheses are restated below.

H6  Performance will have a positive impact on technical quality.

H7  Audit firm tenure will have a positive impact on technical quality.

H8  Audit firm size will have a positive impact on technical quality.

H9  Client size will have a negative impact on technical quality.

The related regression model is, therefore be stated as follows:

\[ TQ_{px} = a \text{PERF}_X + d \text{TEN}_X + c \text{AF}_X + b \text{SIZE}_X + \text{constant} \]

Where:

\[ TQ_{px} \] = technical quality statement p for case x (see section 5.2.5)

\[ \text{PERF}_X \] = performance value for case x (see section 5.2.3 and footnote 2)

\[ \text{TEN}_X \] = length of tenure in terms of years 1 to 5 (see section 5.2.7)

\[ \text{AF}_X \] = audit firm, dummy variable 0 Non-Big 6, 1 Big 6 (see section 5.2.7)

\[ \text{SIZE}_X \] = size of the client in terms of log of total assets (see section 5.2.7)

In addition to the seven individual technical quality statements (see section 5.2.5), a technical quality measure equal to the average of the individual statements, is also used. The means that regression model 3 is used eight times.

4. Independence, Model 4, H10 and H11

Model 4 is designed to study the impact of the hypothesised variables on perceptions of auditor independence (H10 and H11). Specifically, these hypotheses are as follows:
H10 Qualified audit opinions will be associated with higher levels of independence.

H11 Audit firm size will have positive impact on independence.

The following model is used to test these hypotheses.

\[
\text{IND}_{px} = a\text{OPIN}_x + b\text{AF}_x + \text{constant}
\]

Where:

\[
\text{IND}_{px} = \text{independence statement p for case x (see section 5.2.6)}
\]

\[
\text{OPIN}_x = \text{type of audit opinion for 1995 for case x, dummy variable 0 unqualified, 1 qualified (see section 5.2.8)}
\]

\[
\text{AF}_x = \text{audit firm, dummy variable 0 Non-Big 6, 1 Big 6 (see section 5.2.8)}.
\]

5. Behavioural Intentions, Model 5, H12 and H13

Behavioural intentions were hypothesised to be influenced by both service and technical quality perceptions. These relationships were stated in hypotheses H12 and H13 as follows:

H12 Service quality will have a positive impact on behavioural intentions.

H13 Technical quality will have a positive impact on behavioural intentions.

The related regression model is, therefore, stated as follows:

\[
\text{INT}_{px} = a\text{SQ}_x + b\text{TQ}_x + \text{constant}
\]

Where:

\[
\text{INT}_{px} = \text{behavioural intentions statement p for case x (see section 5.2.9)}
\]

\[
\text{SQ}_x = \text{service quality statement for case x (see section 5.2.1)}
\]

\[
\text{TQ}_x = \text{average of seven technical quality statements for case x (see section 5.2.5)}.
\]
This gives rise to three regression models, because, as shown in section 5.2.9 above, behavioural intentions are measured in three ways. In addition, an alternative form of this model is tested whereby the independent variables are defined differently. The definitions adopted are similar to those used in the related marketing research (for example, Sweeney, Soutar and Johnson 1997). They correspond to performance attributes, such as, reliability and ancillary services, rather than overall technical (TQ) and service quality (SQ) concepts. Technical audit quality is unique to the audit service, thus, this alternative approach will make the results comparable to prior marketing research, while also providing further insight into the factors that affect managers' intentions to favourably recommend the audit firm.

5.3.3 The Relative Importance of Performance Factors

The relative importance of performance attributes has been of interest to researchers, particularly services marketing researchers concerned with the gap model (for example, Parasuraman, Zeithmal and Berry 1985, 1988; Schroeder, Solomon and Vickery 1986; Carman 1990; Dassen 1995). The relative importance of various performance attributes, in the formation of service and technical quality perceptions, are investigated to simultaneously provide further insight about research questions two and five. This is done using two regression models in which the independent variables are the performance attributes derived from the review of the auditing literature and "confirmatory" factor analysis (see section 5.3.1). The dependent variable in the first regression is service quality (model A) and the dependent variable in the second regression is traditional technical quality (model B). If the results of the factor analysis correspond with the theoretical audit quality attributes of reliability, control and ancillary services, these regressions will reveal the relative importance of each of these attributes. Whatever the empirically disclosed factors are, these regressions will reveal their relative importance.

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4 Research question two relates to the nature of audit quality attributes and research question five relates to the differences between traditional technical audit quality and audit service quality.
The related models are stated as follows:

**Model A**

$$S_{Qx} = aATT_1 + bATT_2 + \ldots + cATT_n + \text{constant}$$

Where:

- $$S_{Qx}$$ = service quality statement for case x
- $$ATT_1, 2, \ldots, n$$ = performance attributes (for example, reliability, control and ancillary services) one to n

**Model B**

$$T_{Qx} = aATT_1 + bATT_2 + \ldots + cATT_n + \text{constant}$$

Where

- $$T_{Qx}$$ = average of seven technical quality statements for case x
- $$ATT_1, 2, \ldots, n$$ = performance attributes (for example, reliability, control and ancillary services) one to n

Models 2 and 3 in section 5.3.2 above, also have service and technical quality as the dependent variables. Model 2 states that service quality is not only a function of performance as in model A, but that it is also a function of disconfirmation and the type of audit opinion. Similarly, model 3 states that technical quality is a function of variables other than performance. Moreover, models 2 and 3 include only one measure of performance, where as models A and B include a number of measures designed to capture different dimensions of an auditor’s performance. Models A and B exclude all but one of the related independent variables, because the primary purpose of these models is also to investigate the differences between service and technical quality and using the same independent variables will facilitate this. Another purpose of these models is to compare the results to prior studies and the only studies to have considered the relative importance of quality attributes, whether
auditing or marketing studies, have been those using the gap model (see Table 3.1). The CS/D models use a single measure of performance, but if a single measure of performance are used, as in models 1 and 2, these regressions would not reveal any differences between the two quality constructs. Thus, the above models make use of the gap model approach to add to our understanding about the relationship between auditors and their clients. On the basis of Cronin and Taylor (1992), however, only performance factors, rather than the arithmetic gap between performance and expectations factors, are used in the regressions (see section 2.2).

The operationalisation of the ATT1 to ATTn is achieved by calculating the average of the variables contained in each performance factor, as revealed by the factor analysis.

5.4 Summary

This chapter describes the research method which is used to address the research questions posed. First, the development of 28 variables designed to operationalise the expectations, performance and disconfirmation constructs, is described. Second, the development of the operational definition for all the research variables is detailed. Third, the format of the survey instrument is described in detail. Fourth, the statistical methods which are used to analyse the data are briefly introduced. These methods include factor analysis and the regression models (models 1 to 5) used to test the hypotheses. Finally, the regression models (models A and B) used to investigate the relative importance of the performance factors are also stated. The next chapter provides details of the results of these analyses.

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5 In the CS/D literature performance is usually measured as the average of several performance variables or as the average of the average of performance factors (see footnote 2) (for example, Oliver and DeSarbo 1988; Patterson 1993).
Chapter 6  Results

6.0 Introduction

The purpose of this chapter is to present the results of the empirical tests of the research questions. The methods of data analysis described in chapter five, are applied to the data which was collected from the survey instruments returned by the respondents. The descriptive statistics relating to all the research variables are, however, presented first. These statistics indicate that the sample is representative of the population of listed companies and respondents. Factor analysis is described, in chapter five, as the means of reducing the number of variables to a reasonable size and to confirm their theoretical basis. The results relating to the factor analysis are described and interpreted in this chapter and, in general, they are shown to confirm the overall attributes of reliability, control and ancillary services. The regression models that are designed to test the hypotheses are also described in chapter five. The results relating to these models, are described and analysed in this chapter and, in general, they confirm the hypotheses relating to the base model of audit service quality, but they do not support the hypotheses relating to audit engagement characteristics. Finally, the results relating to the relative importance of individual performance factors are presented in this chapter. The related regression models are developed in chapter five and the results indicate that the only common factor in the formation of service and technical quality perceptions is the reliability factor which is related to the auditor's competence.

In section 6.1, details of the response rate are provided and in section 6.2 descriptive statistics for all variables are given. The results of the factor analysis is contained in section 6.3. The results relating to hypotheses testing are in section 6.4 and in section 6.5 the results relating to the relative importance of individual performance factors are presented. Finally, a summary of the overall results is given in section 6.6.
6.1 Response Rate

All respondents to the survey are classified into three categories with Table 6.1, showing the response rate by each category, executive directors, non-executive directors and financial accountants. The justification for targeting these categories is provided in section 5.1.2, but, obviously the response rate varied significantly between them. The high response rate for financial accountants, compared to directors, can partly be explained by the nature of the questions contained in the survey. By virtue of their responsibilities, financial accountants are likely to have most dealings with external auditors and are, therefore, in the best position to respond to detailed questions relating to the performance of the auditor. Non-executive and executive directors, on the other, hand may have relatively little contact with auditors, especially if they are not members of the audit committee and, therefore, may have found it difficult to answer detailed questions about their performance\(^1\). The lack of response from directors could be indicative of the extent of the separation between some auditors and directors, which is a cause for concern for users of financial reports and regulators, if it is interpreted to imply that directors in some organisations do not monitor the performance of their auditors in sufficient detail. This, in turn, would cast doubt about the effectiveness of some audit committees.

Given that each of the constructs, expectations, performance and disconfirmation, were measured using twenty-eight different variables (being, a total of eight-four ratings), the questionnaire was quite long. Thus, two features of the questionnaire design, the detailed nature of the questions and its length, contributed to the response rate. There are some significant differences between the responses of directors and financial accountants. These differences are noted, below in the relevant sections.

\(^1\) Some support for this explanation of the low response rate for directors was provided by the communications received from three non-executive directors stating that they were unable to complete the questionnaire, because they did not have sufficient contact with the auditors.
Table 6.1 Response rate

<table>
<thead>
<tr>
<th>Title</th>
<th>Number sent</th>
<th>Number returned (response rate)</th>
<th>Final Sample (percentage of sample)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive directors</td>
<td>648</td>
<td>44 (6.8)</td>
<td>35 (25.7)</td>
</tr>
<tr>
<td>Non-executive directors</td>
<td>184</td>
<td>10 (5.4)</td>
<td>7 (5.1)</td>
</tr>
<tr>
<td>Financial accountants</td>
<td>200</td>
<td>113 (56.5)</td>
<td>94 (69.9)</td>
</tr>
<tr>
<td></td>
<td>1032</td>
<td>177 (17.2)</td>
<td>136 (100)</td>
</tr>
</tbody>
</table>

The total sample was reduced for the following reasons:

Questionnaire was incomplete in significant ways (for example, company name was not supplied or some answers were missed). This accounted for the elimination of thirty-two responses; and

The company was no longer listed on the Australian Stock Exchange. This accounted for the elimination of nine responses.

Thus, a total of forty-one responses were deleted from the final analysis. The subsequent analysis was performed on 136 complete responses representing 123 different companies.

As a measure of non-response bias, the 30 responses received first were compared to the last 30 responses (Norusis 1995). As no significant differences were noted between the early and late responses in respect of any of the significant test variables, it is concluded that no response bias could be detected.

6.2 Descriptive Statistics

The descriptive statistics for various engagement characteristics are shown in Table 6.2. Panel A shows the descriptive statistics relating to audit fees, other fees paid to auditors for management consulting services, total revenue and total assets. The distributions, for most of these variables, are somewhat skewed as shown by the differences between the means and related medians and the high standard deviations. The sample includes some of the largest (for example, Westpac) and smallest listed
companies in Australia. The zero relating to the minimum for other fees paid to auditors represents twelve companies, which means that the majority (81%) of companies in the sample purchased other services from their audit firm. This is consistent with the percentage of companies in the population of listed companies, which purchase other services from their auditor (Who Audits Australia, 1995).

Panel B of Table 6.2, shows that all Australian states are represented in the sample and that the proportions from each state are representative of the population of listed companies in each state. It also shows that 76% of the companies in the sample are audited by Big 6 firms and that 87% of the audit opinions were unqualified\(^2\). Both of these statistics are representative of the population of listed companies.

Panel C of Table 6.2 lists audit tenure by audit firm and by partner. It shows that these companies switch audit engagement partner a little more often than they switch audit firms. For example, 68% of companies have had the same audit firm for five or more years, but only 50% of them have had the same audit partner for five or more years. Similarly, eight companies have had the same audit firm for only one year, while thirteen companies have had the same partner for only one year\(^3\). This is not a surprising result, many firms have a policy of partner rotation in accordance with the accounting profession's quality control recommendations as a means of enhancing independence (ASCPA and ICAA, 1993). Finally, 73% of companies in the sample have an audit committee, which is also representative of the population of listed companies (Who Audit Australia, 1995). On the basis of the information contained in Table 6.2, the companies in the sample are representative of the population of Australian listed companies.

---

\(^2\) The Who Audits Australia data defines a qualified audit opinion as "a non-standard report". Thus, any deviation from a strictly standard unqualified report, such as any additional comments, are classified as a qualified opinion. The eighteen qualifications contained in the sample are comprised of the following specific qualifications: Uncertainty relating to going concern (five), uncertainty relating to valuation of assets (four), unaudited comparative figures (four), unaudited subsidiary (four) and trust deed violation (one).

\(^3\) Eight of these thirteen companies have also had the same audit firm for one year, the remaining five companies have had the same audit firm for two or more years, it is not possible to tell from this table precisely how many.
Table 6.2 Descriptive Statistics: Audit Engagement Characteristics

**Panel A**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean $'000</th>
<th>Standard deviation $'000</th>
<th>Median $'000</th>
<th>Minimum $'000</th>
<th>Maximum $'000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audit fees</td>
<td>187</td>
<td>357</td>
<td>68</td>
<td>6</td>
<td>2,268</td>
</tr>
<tr>
<td>Other fees paid to auditors</td>
<td>127</td>
<td>255</td>
<td>42</td>
<td>0</td>
<td>2,042</td>
</tr>
<tr>
<td>Revenue</td>
<td>527,014</td>
<td>1,614,028</td>
<td>42,151</td>
<td>18</td>
<td>13,013,300</td>
</tr>
<tr>
<td>Total assets</td>
<td>1,371,098</td>
<td>9,576,505</td>
<td>63,597</td>
<td>834</td>
<td>105,835,000</td>
</tr>
</tbody>
</table>

**Panel B**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Sample Frequency</th>
<th>Population %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>State:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New South Wales</td>
<td>50</td>
<td>35</td>
</tr>
<tr>
<td>Victoria</td>
<td>24</td>
<td>20</td>
</tr>
<tr>
<td>Western Australia</td>
<td>23</td>
<td>19</td>
</tr>
<tr>
<td>Queensland</td>
<td>17</td>
<td>14</td>
</tr>
<tr>
<td>South Australia</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Tasmania</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>123</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Type of audit firm:</strong></th>
<th>Sample Frequency</th>
<th>Population %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Big six</td>
<td>93</td>
<td>76</td>
</tr>
<tr>
<td>Non-big six</td>
<td>30</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>123</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Type of audit opinion:</strong></th>
<th>Sample Frequency</th>
<th>Population %</th>
</tr>
</thead>
<tbody>
<tr>
<td>unqualified</td>
<td>107</td>
<td>87</td>
</tr>
<tr>
<td>qualified</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>123</td>
<td>100</td>
</tr>
</tbody>
</table>


**Panel C**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Audit Firm</th>
<th>Audit Partner</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tenure</strong></td>
<td>Frequency</td>
<td>%</td>
</tr>
<tr>
<td>less than one year</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>one year</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>two years</td>
<td>13</td>
<td>11</td>
</tr>
<tr>
<td>three years</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>four years</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>five or more years</td>
<td>84</td>
<td>68</td>
</tr>
<tr>
<td>Total</td>
<td>123</td>
<td>100</td>
</tr>
</tbody>
</table>
In respect of the individual respondents, it is noted that, the majority of them (78%) are members of The Institute of Chartered Accountants in Australia (ICAA) or the Australian Society of Certified Practicing Accountants (ASCPA), the two most highly regarded professional accounting bodies in Australia\(^4\). This implies additional reliability of the responses, because these respondents are likely to understand the role of the auditor better than most others. They are more likely to harbour realistic expectations of auditors. Also, 42.6% of them are members of their organisation’s audit committee. These respondents in particular are likely to have a significant influence on the decision to change auditors (Commonwealth Attorney-General, 1995). The perceptions of these respondents are, therefore, of great relevance.

As noted in section 5.1.2, surveys involving organisational buying centres should attempt to take steps to ensure the representativeness of the responses obtained (Phillips 1981; Lynn 1987). One method suggested of ensuring this was to obtain at least two separate respondents for each organisation. However, the final sample includes only thirteen companies from which two responses were received. This was, unfortunately, too few to carry out the analysis suggested by Phillips (1981). An additional method for obtaining information about the representativeness of organisational respondents is to elicit a self assessed representativeness score (Phillips 1981; Lynn 1987). Table 6.3 provides details of respondents’ self assessments and the results indicate that the self assessed reliability of the responses is quite high at 5.78 out of a maximum score of seven. Table 6.3 also indicates the extent to which respondents thought their answers were representative of the views of other relevant members of the organisation. This result is also quite high at 5.80 out of a possible maximum score of seven. On the basis of these results, it is concluded that the respondents are reliable and representative and that it is particularly worthwhile to study their perceptions.

\(^4\) This information was obtained from the personal details section of the questionnaire.
Table 6.3 Descriptive Statistics: Self Assessed Reliability and Representativeness

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to evaluate auditors</td>
<td>5.78</td>
<td>1.14</td>
</tr>
<tr>
<td>Extent to which responses are representative</td>
<td>5.80</td>
<td>1.00</td>
</tr>
</tbody>
</table>

As noted in section 5.2, respondents were asked to rate the auditors' ability on seven technical quality dimensions, on an 11 point scale (0 to 10). Table 6.4 summarises the descriptive statistics for the seven technical quality questions included in the questionnaire. The highest score is 7.26, which relates to the auditor's perceived ability to discover accounting judgement errors. The lowest score is 5.42, which relates to the auditor's perceived ability to discover illegal acts. The fact that the auditors' ability to detect accounting judgement errors is rated significantly higher than their ability to detect illegal acts (t-statistic = -7.43, p-level .000)\(^5\), is intuitively appealing and consistent with guidelines provided in The ICAA Members' Handbook (AUS 210). That is, while illegal acts (and fraud) are likely to be concealed and, therefore more difficult to detect, there is less opportunity and motivation for managers to conceal accounting judgement errors. Moreover, auditors tend to have greater expertise auditing accounting estimates and usually give particular attention to them (The ICAA Members' Handbook, AUS 516). A composite scale of technical quality, defined as the average of the seven individual statements, is also calculated and as shown in Table 6.4, its mean is 6.41. There are no statistically significant differences between the technical quality ratings across Big 6 and Non-Big 6 firms.

The question that arises is whether these perceptions represent acceptable levels of perceived technical quality. Auditors are under a legal and professional obligation to provide a reasonable level of assurance that the financial reports are free from

\(^5\) This statistical test of difference between the means has been based on the assumption that they come from independent samples. It is recognised that the test variables did not come from independent samples. Thus, the test is biased upward. However, the Spearman's rank correlation between the two variables is a moderate .518, and the assumption that the variance of the means is same has not been violated.
material misstatements (for example, The ICAA Members’ Handbook, AUS 210). These scores only represent managers’ perceptions of the level of technical quality achieved by auditors, and there is no way of knowing how closely they resemble actual technical quality, but managers, at least, are in a better position than users of financial reports, to make such assessments. Would users of financial reports find a score of 5.42 out of ten acceptable? I argue that they would not, and that if these managers’ perceptions were to spread to users of financial statements, the reputation of the profession would be damaged. That is, the perceived value of statutory audits could be diminished.

In contrast, the average level of perceived service quality as shown in Table 6.5 is quite high at 5.54 out of a possible score of seven. It is reasonable to expect that professionals in general would be rated highly, however, the concept of service quality is not relevant to users of financial reports. It is little comfort to users to know that audit service quality is high, because their only concern is with technical audit quality. As for most professions the long term survival of the auditing profession depends on the publics’ as well as the clients’ perceptions of its quality. The low results in respect of technical quality assessments may, therefore, be an indication that there is a need for auditors to educate management about the actual level of technical quality achieved. This would involve first investigating the all the factors that influence managers’ technical audit quality assessments. For example, in addition to the auditors’ performance, factors such as attitude towards auditors, the extent of audit experience and a variety of psychological factors may have an impact on managers’ perceptions of technical audit quality. An understanding of these factors would aid auditors in increasing managers’ perceptions of technical audit quality.
Table 6.4 Descriptive Statistics: Technical and Service Quality

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical quality (maximum possible = 10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auditor's ability to detect:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>illegal acts</td>
<td>5.42</td>
<td>2.20</td>
</tr>
<tr>
<td>material fraud</td>
<td>5.45</td>
<td>2.25</td>
</tr>
<tr>
<td>internal control deficiencies</td>
<td>6.40</td>
<td>2.03</td>
</tr>
<tr>
<td>income smoothing</td>
<td>6.82</td>
<td>2.28</td>
</tr>
<tr>
<td>going concern problems</td>
<td>6.85</td>
<td>2.07</td>
</tr>
<tr>
<td>mistakes</td>
<td>6.99</td>
<td>1.99</td>
</tr>
<tr>
<td>accounting judgement error</td>
<td>7.26</td>
<td>1.87</td>
</tr>
<tr>
<td>average</td>
<td>6.41</td>
<td>1.65</td>
</tr>
<tr>
<td>Service quality (maximum possible = 7)</td>
<td>5.54</td>
<td>1.06</td>
</tr>
</tbody>
</table>

Table 6.5 shows the descriptive statistics for perceptions about the level of auditor independence. Respondents were asked to rate the auditor's level of independence on an eleven point scale (0 to 10) in respect of two measures of independence, that is, likelihood that the auditor would report material misstatements to the audit committee and shareholders. The results show that while the means are quite high for the two measures of independence (8.02 and 7.60 out of ten), there appears to be some variance among perceptions. Two respondents rated the chances of the auditor qualifying the audit report, as zero (22% rated it as five or below). Four respondents rated the probability that the auditor would report a material misstatement to the audit committee, as 10%. Again, we can ask, are these ratings high enough? For example, is it reasonable to expect that auditor's independence would be a perfect ten? If this is the case, then these results may indicate a gap exists between public expectations and auditor performance as perceived by managers. Prior research has identified the existence of gaps between users' expectations and auditor performance referred to as the "feasibility" and "performance" gaps (Porter 1990; ASCPA and ICAA 1994). The feasibility gap relates to a gap between what users expect from auditors and the duties which auditors may reasonably be expected to perform. The performance gap is made up of the "deficient standards" and "deficient performance" gaps. The former relates to a gap between the duties which may reasonably be expected of
auditors, and auditors’ duties as defined by current standards. The deficiency gap relates to a gap between the duties which can reasonably be expected of auditors and auditors’ actual performance. It is not possible to say which of these gaps is implied by the above evidence. However, to the extent that the perceptions of independence, reported above, represent mis-perceptions, auditors may need to educate management. Again, as for technical quality perceptions, managers’ perceptions of auditor independence can be expected to be influenced by factors unrelated to auditor performance (for example, general attitude towards auditors and extent and nature of prior audit experience).

Table 6.5 Descriptive Statistics: Independence Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>n = 136</td>
<td></td>
<td>(maximum possible = 10)</td>
</tr>
<tr>
<td>Likelihood that the auditor will report material misstatements to:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Audit committee</td>
<td>8.02</td>
<td>2.15</td>
</tr>
<tr>
<td>Shareholders</td>
<td>7.60</td>
<td>2.52</td>
</tr>
</tbody>
</table>

Table 6.6 gives the descriptive statistics relating to behavioural intentions which were measured in three different ways. The respondent’s intentions were measured, first as a recommendation, at the next review of the firm’s appointment, that the audit firm be retained, second, as a recommendation that other services be purchased from the audit firm, and third, as a recommendation of the audit firm to a colleague. The table shows that the average response to whether the auditor would be retained is 8.16. The average response to whether other services would be bought from the audit firm or whether the auditor would be recommended to a colleague are 6.98 and 7.25 respectively. Thus, chances are fairly high that managers will, on average, recommend their organisation’s auditors. Whether or not intentions to recommend
the auditor are related to perceptions of service and technical quality is investigated in section 6.3.

**Table 6.6 Descriptive Statistics: Behavioural Intentions**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standards Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>n = 136</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Likelihood that would recommend:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>auditor be retained</td>
<td>8.16</td>
<td>2.35</td>
</tr>
<tr>
<td>purchase of &quot;other services&quot; from audit firm</td>
<td>6.98</td>
<td>2.43</td>
</tr>
<tr>
<td>auditor to colleague in another organisation</td>
<td>7.25</td>
<td>2.26</td>
</tr>
</tbody>
</table>

The means and standard deviations of each variable included in the questionnaire for expectations, performance and disconfirmation are listed in appendix II. The highest rating possible was seven for each variable for each construct. The variables are listed in ascending order of expectations. Except for one variable (provide quality financial advice), the disconfirmation ratings were the lowest. Except for two variables (provide quality financial advice and partner makes frequent audit site visits) expectations ratings were the highest. Consistent with the nature of the audit profession, the variable with the highest rating, for each of the three constructs, is audit team trustworthiness. However, the suggestion that Big 6 clients may have higher expectations than Non-Big 6 clients (see section 3.3.3) was not supported by the results\(^6\). The highest expectations seem to relate to the quality of the service and technical competence of the auditor. However, without further statistical analysis it is difficult to interpret these results, therefore, the next section describes the process of factor analysis applied to the data.

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\(^6\) There was no significant difference in the mean expectations response between Big 6 clients (5.75 standard deviation .571) and Non-Big 6 clients (5.81 standard deviation .488), (p = .657). Also, there was no statistically significant difference in the means of the expectations of directors and financial accountants.
6.3 Results of Factor Analysis

As noted in section 5.3, factor analysis is used to reduce the 28 variables to a manageable size for subsequent regression analysis and to confirm the existence of the overall attributes of reliability, control and ancillary services which underlie the 28 variables. First, the suitability of the data for factor analysis is assessed in section 6.3.1, and second the factors which arose from the analysis are interpreted in section 6.3.2.

6.3.1 Suitability of the Data

First, the suitability of each of the data sets for factor analysis is tested. The techniques utilised for this purpose are described in section 5.3.1. The results of these tests are shown in Table 6.7. Bartlett's test of sphericity and the KMO measure of sampling adequacy indicate that the data are highly appropriate for factor analysis. In each case the KMO measure of sampling adequacy is in the high range.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Expectations</th>
<th>Performance</th>
<th>Disconfirmation</th>
</tr>
</thead>
<tbody>
<tr>
<td>KMO</td>
<td>.76</td>
<td>.90</td>
<td>.78</td>
</tr>
<tr>
<td>Bartlett's p-level</td>
<td>684.2 (.0000)</td>
<td>1434.2 (.0000)</td>
<td>852.4 (.0000)</td>
</tr>
<tr>
<td>Number of variables</td>
<td>19</td>
<td>22</td>
<td>20</td>
</tr>
<tr>
<td>Number of factors</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Rotation method</td>
<td>equamax</td>
<td>varimax</td>
<td>varimax</td>
</tr>
</tbody>
</table>

The factor solutions for expectations, performance and disconfirmation are shown in Tables 6.8, 6.9 and 6.10 respectively. Overall results indicated that all variables clearly loaded on one factor only, demonstrating sound convergent and discriminant validity. As is evident in the tables, some variables were included even though their factor loadings fell below 0.5 (the cut-off point for inclusion determined in section
5.3.1. They are included, because conceptually they "belong" to the factor and only variables which had a factor loading above 0.45 have been included. Low factor loadings and other reasons detailed in section 5.3.1, accounted for the elimination of nine expectations, six performance and eight disconfirmation variables. The reliability of the factors was assessed using the Cronbach alpha coefficient. Tables 6.8, 6.9 and 6.10 show the results of this assessment for each of the data sets. A minimum acceptable level of .7 for alpha is suggested as a rule of thumb by, for example, de Vaus (1991). This rule of thumb was violated by only two expectations factors. Consequently, care needs to be taken in the interpretation of these two factors.

6.3.2 Interpretation of the Factors

Once the factor solutions are complete in statistical terms, they need to be interpreted and some conceptual commonality among the variables which fall into a factor have to be inferred. The statistical procedures underlying the factor solutions are no guarantee that such interpretation is easy. However, the sound theoretical basis adopted in the development of the scale was expected to provide a guide to the interpretation of the factors. That is, factors corresponding to the reliability, control and ancillary service attributes were expected. The overall results obtained revealed that the performance and disconfirmation factor solutions are relatively easy to interpret, but the expectations solution posed some conceptual difficulties. In the final analysis four expectations, four performance and four disconfirmation factors corresponding closely to the related theoretical analysis are revealed with one main factor evident in each case.

The remainder of this section provides a description and interpretation of each factor for expectations, performance and disconfirmation respectively. The factor solutions obtained for expectations, performance and disconfirmation are compared to each other and to factor solutions obtained in related studies.
1. Expectations

Performing factor analysis on responses to expectations resulted in four factors, which together account for 51.8% of the total variance. The factors are: F1 Attitude; F2 Reliability; F3 Professionalism; F4 Control. A brief description of each factor is given below:

Table 6.8 Expectations Factor Solution

<table>
<thead>
<tr>
<th>Factor</th>
<th>Variable (factor loading)</th>
<th>Cronbach Alpha</th>
<th>Eigenvalue</th>
<th>Cumulative variance explained %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Attitude</td>
<td>Co-operative attitude (.75)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pleasant and polite (.65)</td>
<td>.73</td>
<td>4.7</td>
<td>24.9</td>
</tr>
<tr>
<td></td>
<td>Technically accurate (.62)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Promptly communicate findings (.59)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Deliver by agreed deadline (.57)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Responsive to needs (.47)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Reliability</td>
<td>Manager has industry knowledge (.81)</td>
<td>.73</td>
<td>2.1</td>
<td>35.8</td>
</tr>
<tr>
<td></td>
<td>Partner has industry knowledge (.73)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reputation (.70)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Identify internal control weaknesses (.56)</td>
<td>.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Provide personal attention (.49)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Professionalism</td>
<td>Detailed specification of audit fee (.71)</td>
<td>.58</td>
<td>1.6</td>
<td>44.2</td>
</tr>
<tr>
<td></td>
<td>Confidence in partner (.70)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Audit team trustworthy (.59)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advice for no additional fee (.56)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Control</td>
<td>Contribute to accuracy of accounts (.79)</td>
<td>.68</td>
<td>1.4</td>
<td>51.8</td>
</tr>
<tr>
<td></td>
<td>Act as deterrent against fraud (.74)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Augment internal control (.63)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assist interpretation of accounting standards (.47)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
F1 Attitude (6 items)

This factor represents the attitude of the audit team towards the client. It includes the variables, co-operative attitude and pleasant and polite, which also appear in the three item performance factor of the same name (see below). It corresponds with the overall attribute of ancillary services. A five item disconfirmation factor of the same name contains four of the same variables as this factor (see below). Thus, a fairly similar result was obtained for this factor across performance, expectations and disconfirmation. However, a difference lies in that this factor accounts for 24.9% of the total variance (the largest single factor) for expectations, but accounts for only 6.2% for both performance and disconfirmation. It has an alpha of 0.73.

F2 Reliability (5 items)

This factor corresponds with the overall reliability attribute and relates to the auditor's technical competence. The partner's and manager's industry knowledge are the two most significant variables in this factor and both variables are significant in the performance and disconfirmation factors of the same name. The third most significant variable is reputation. As was explained in section 3.1, reputation can be used as a surrogate for technical quality. It also appears in the reliability factor for performance. Thus, there are significant similarities between the variables in this factor across the three constructs. The labelling of this factor as reliability is consistent with prior marketing literature (for example, SERVQUAL). It accounts for 10.8% of the variance and has an alpha of 0.73.

F3 Professionalism (4 items)

This factor is the most difficult to interpret, because the variables contained in it are not clearly related to each other. It contains variables associated with auditor independence (trustworthy) and value-for-money (detail specification of audit fee and provision of "free" advice). This factor is not apparent in the performance or
disconfirmation factor solutions. Moreover, it has a low alpha of 0.58. Care must, therefore, be exercised in its interpretation. It accounts for 8.4% of the variance.

F4 Control (4 items)

This factor clearly relates to the external auditor's contribution to internal control within the organisation. Three of the five pre-specified control variables (chapter five) fall into this factor. In chapter three, it is argued that the need to achieve adequate internal control is a potential source of demand for external audit. Control is an outcome attribute rather than a process attribute. This factor is unique to the audit service and, therefore, does not appear in the list of generic service quality dimensions (SERVQUAL) developed by Parasuraman, Zeithmal and Berry (1988). Moreover, there appears to be no comparable factor in prior audit service research. It accounts for 7.6% of the variance and as an alpha of 0.68.

3. Performance

Four factors, which account for 62.3% of the total variance of the data, emerged from the performance ratings. The factors are: F1 Service; F2 Reliability; F3 Control; F4 Attitude. The following is a brief description and interpretation of each factor.

F1 Service (7 items)

This factor captures variables relating to the nature of the delivery of the service to the audit client. It corresponds with the definition of ancillary services given in chapter three. It includes variables such as responsiveness to client needs, availability and the provision of personal attention. It is associated with the process by which the audit is delivered and as a contrast, it is noted that it contains no variables associated with the auditor's technical competence. It is the major factor explaining 41.7% of the variance of the data and its alpha coefficient is 0.87.
### Table 6.9 Performance Factor Solution

<table>
<thead>
<tr>
<th>Factor</th>
<th>Variable (factor loading)</th>
<th>Cronbach Alpha</th>
<th>Eigenvalue</th>
<th>Cumulative variance explained %</th>
</tr>
</thead>
</table>
| 1. Service  | Responsive to needs (.77)  
Partner site visits (.76)  
Availability (.74)  
Provide personal attention (.70)  
Value-for-money (.64)  
Deliver by agreed deadline (.60)  
Promptly communicate findings (.51) | .87            | 9.2         | 41.7                            |
| 2. Reliability | Confidence in partner (.68)  
Manager's industry knowledge (.67)  
Team is independent (.67)  
Partner's industry knowledge (.64)  
Skeptical attitude (.61)  
Reputation (.60)  
Contribute to accuracy of accounts (.51)  
Technically accurate (.47) | .85            | 1.7         | 49.4                            |
| 3. Control  | Augment internal control (.79)  
Act as deterrent against fraud (.79)  
Provide quality financial advice (.57)  
Identify internal control weakness (.55) | .78            | 1.5         | 56.1                            |
| 4. Attitude | Pleasant and polite (.84)  
Co-operative attitude (.78)  
Audit team is trustworthy (.50) | .73            | 1.4         | 62.3                            |

F2 Reliability (8 items)

This factor clearly corresponds with the overall reliability attribute. Most of the variables in this factor relate to the competence and independence of the audit team. Examples of competence variables are manager's and partner's industry knowledge and technical accuracy. Independence and skepticism variables describe the other aspect of reliability. Thus, it corresponds closely to the traditional role of the auditor. It accounts for 7.7% of the variance and has an alpha of 0.85.
F3 Control (4 items)

As for expectations a clear internal control factor arose for performance. As noted above, this is more akin to an outcome attribute than a process attribute. Three of the four variables (act as deterrent against fraud, identify internal control weaknesses and augment internal control) are directly related to the external auditor's role in internal control and are listed in chapter five for the purpose of capturing the control variable. The fourth variable (provide high quality advice) is also an outcome attribute. This factor explains 6.7% of the variance with an alpha coefficient of 0.78.

F4 Attitude (3 items)

This factor contains three variables which relate directly to the nature of the attitude of the audit team in face-to-face contact with the client (for example, pleasant and polite). As for the service factor above, this factor is interpreted as corresponding with the ancillary services attribute. It explains 6.2% of the total variance and has an alpha coefficient of 0.73.

3. Disconfirmation

Four factors emerged for disconfirmation, together explaining 63.3% of the total variance of the data. These factors are now briefly interpreted: F1 Service; F2 Attitude; F3 Reliability; and F4 Control.

F1 Service (5 items)

This factor describes the nature of the service provided to the client. Out of the five variables in this factor three are the same as that for the service factor for performance. Thus, it is also interpreted as an ancillary service attribute. This factor accounts for 46.4% of the variance of the data and has an alpha of 0.82.
### Table 6.10 Disconfirmation Factor Solution

<table>
<thead>
<tr>
<th>Factor</th>
<th>Variable (factor loading)</th>
<th>Cronbach Alpha</th>
<th>Eigenvalue</th>
<th>Cumulative variance explained</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Service</td>
<td>Availability (.73) &lt;br&gt;Contribute to accuracy of accounts (.72)  &lt;br&gt;Provide value-for money (.63)  &lt;br&gt;Have confidence in the partner (.61)  &lt;br&gt;Deliver by agreed deadline (.60)</td>
<td>.82</td>
<td>9.2</td>
<td>46.4</td>
</tr>
<tr>
<td>2. Attitude</td>
<td>Co-operative attitude (.77)  &lt;br&gt;Pleasant and polite (.68)  &lt;br&gt;Promptly communicate findings (.65)  &lt;br&gt;Responsive to needs (.62)  &lt;br&gt;Assist interpretation of accounting Standards (.53)</td>
<td>.84</td>
<td>1.2</td>
<td>52.6</td>
</tr>
<tr>
<td>3. Reliability</td>
<td>Partner’s industry knowledge (.79)  &lt;br&gt;Manager’s industry knowledge (.77)  &lt;br&gt;Contribute to accuracy of accounts (.48)  &lt;br&gt;Provide personal attention (.47)</td>
<td>.80</td>
<td>1.1</td>
<td>58.2</td>
</tr>
<tr>
<td>4. Control</td>
<td>Act as deterrent against fraud (.78)  &lt;br&gt;Identify weaknesses in internal controls (.58)  &lt;br&gt;Reputation (.56)  &lt;br&gt;Audit team is trustworthy (.51)  &lt;br&gt;Audit team is independent (.50)  &lt;br&gt;Augment internal control (.48)</td>
<td>.83</td>
<td>1.0</td>
<td>63.3</td>
</tr>
</tbody>
</table>

F2 Attitude (5 items)

The two variables related to the nature of the face-to-face interaction by the audit team are included in this factor (co-operative attitude and pleasant and polite). These variables also appear in the related factor for performance. This factor accounts for 6.2% of the variance of the data and has an alpha of 0.84.

F3 Reliability (4 items)

Three of the four variables in this factor appear in the related performance factor. It relates to the auditor’s technical ability and corresponds with the theoretical reliability
attribute. It accounts for 5.6% of the variance of the data and has an alpha coefficient of 0.80.

F4 Control (6 items)

This factor includes three variables directly related to the external auditor's contribution to internal control and as such corresponds with the overall control attribute. The other variables in the factor relate to the independence of the auditor. This is a reasonable result, because the auditor cannot achieve control unless she/he is independent of the client staff. In contrast, the independence variables fell into the reliability factor for performance, but in both cases, independence was related to a technical aspect of the audit service. It accounts for 4.6% of the variance. It has a high alpha coefficient of 0.83.

6.3.3 Comparison with Factors Found in Related Studies.

The studies listed in Table 3.1 are listed again in Table 6.11. The table also lists the performance factors attained in this research. Despite the limitations associated with comparing the studies listed in table 6.11 (see section 3.1), a list of the descriptors used in prior studies is provided as a contrast to the ones developed in this study. While the service, reliability and attitude factors have similar counterparts in other studies, as noted above, the control factor does not appear in any other related study. This represents a significant contribution to our understanding about the nature of demand for the audit service. O'Keefe and Barefield (1986) found evidence related to the demand for the control attribute by small business clients, however, their research design differed significantly to that adopted here (explaining their absence from Table 6.11). Moreover, large audit clients, are included in the sample from which the results presented here are obtained, thus this result represents the first empirical study to provide evidence about the existence of an audit service attribute, which has, until now, only been based on theory (for example, Simunic and Stein 1987).
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tangibles</td>
<td>Tangibles</td>
<td>Quasi-professional</td>
<td>Appearance</td>
<td>Tangibles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reliability</td>
<td>Professionalism</td>
<td>Whistle blowing / Detection ability</td>
<td>Reliability</td>
<td>Professionalism / Industry knowledge</td>
<td>Technical qualifications / Industry expertise / Audit team expertise</td>
<td>Reliability</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>Straightforwardness</td>
<td>Responsiveness</td>
<td>Service</td>
<td>Meeting deadlines / Accessibility</td>
<td>Service</td>
<td></td>
</tr>
<tr>
<td>Assurance</td>
<td>Effectiveness</td>
<td>Partner in business</td>
<td>Assurance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empathy</td>
<td>Empathy</td>
<td>Empathy / Communication</td>
<td>Empathy</td>
<td>Relationship</td>
<td>Working relationship</td>
<td>Attitude</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Global</td>
<td>Range of services / fees</td>
<td></td>
<td>Control</td>
</tr>
</tbody>
</table>
Factor analysis is used to investigate research question two and to reduce the number of variables for regression analysis. The literature review (chapter three) revealed four overall attributes of audit quality of credibility, reliability, control and ancillary services but, credibility is excluded from the empirical analysis. Consistent with the conceptual analysis, the empirical results indicate a reliability and a control attribute and two ancillary attributes labelled, service and attitude for performance and disconfirmation. The factor solution for expectations is somewhat different in that it shows no service factor, but one which was labelled professionalism. The reliability attribute relates to the traditional role of the auditor, containing attributes related to the auditor’s competence and independence. The control attribute relates to the auditor’s role in augmenting the entity’s system of internal control and the ancillary services attribute is argued to be comprised of two attributes, service (professionalism) and attitude. The factor solutions and theoretical analysis, therefore, suggest that the overall attributes of the audit service from the perspective of managers are: credibility, reliability, control and ancillary services. A comparison of the attributes found in this study to other related studies showed that while the control attribute is unique to this study, the three others are similar to attributes found in previous services (including professional services) marketing and auditing studies.

6.4 Results of Hypotheses Testing

Five regression models, designed to test thirteen hypotheses, are specified in section 5.3.2. Models 1 and 2 relate to the basic services marketing model as depicted in Figure 2.1. Models 3 and 4 relate to the auditing concepts of quality, that is, technical quality and independence. Finally, model 5 relates to behavioural intentions. These models and their related results are described and analysed in this section.

6.4.1 Disconfirmation - Model 1, H1 and H2

The first regression model developed in section 5.3.2 relates to disconfirmation and states that:
\[ \text{DISC}_x = a\text{EXP}_x + b\text{PERF}_x + \text{constant} \]

Where:
\[ \text{DISC}_x = \text{disconfirmation value for case } x \]
\[ \text{EXP}_x = \text{expectations value for case } x \]
\[ \text{PERF}_x = \text{performance value for case } x. \]

As noted in chapter five, single measures of the expectations, performance and disconfirmation constructs were used for the purposes of testing the audit service model\(^7\). The results for model 1 are shown in Table 6.12. They show that both of the hypothesised variables have a significant impact on disconfirmation in the expected direction. That is, hypotheses H1 and H2 are supported. As expected, a negative relationship exists between disconfirmation and expectations implying that, the higher the expectations of managers are, the less likely they are to perceive that actual performance exceeds their expectations (H1). Also as expected, performance was found to have a significantly positive relationship with disconfirmation implying that, the higher an auditor's performance is perceived to be, the more likely it is to be seen to be exceeding expectations (H2). The latter result holds when the sample is separated by type of respondent, that is, when the responses of directors are regressed separately to those of the financial accountants. Hypothesis 1, however, is not supported when the responses of financial accountants only, are used. This indicates that there may be differences in the nature of the services models, depending on the unit of response. That is, expectations should perhaps be excluded from models in which financial accountants are used as respondents.

\(^7\) The measures of expectations, performance and disconfirmation used to test models 1, 2 and 3 are as stated in footnote 2 of chapter 5, the average of the factor averages, where the factor averages were based on the variables within the factors revealed in section 6.3. Therefore, to test whether the results obtained are sensitive to the factor solutions obtained, alternative measures of each construct were calculated and the regressions were run again using the alternative measures. One of the alternative measures used was the average of all the variables, without the factor analyses. All other measures involved alternative factor solutions. The only difference observed in the results, from those presented above, was that the expectations construct was not always significant. This is consistent with the marketing literature in that the results relating to expectations are mixed.
Table 6.12 Results of Hypotheses Testing - Model 1, Disconfirmation

<table>
<thead>
<tr>
<th>Variables</th>
<th>Predicted Sign</th>
<th>Coefficient Estimate</th>
<th>t-statistic</th>
<th>p-value</th>
<th>Adj. R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXP (H1)</td>
<td>-</td>
<td>-0.218</td>
<td>-1.717</td>
<td>0.089*</td>
<td></td>
</tr>
<tr>
<td>PERF (H2)</td>
<td>+</td>
<td>0.533</td>
<td>6.594</td>
<td>0.000**</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td>3.023</td>
<td>4.161</td>
<td>0.000</td>
<td>0.276</td>
</tr>
</tbody>
</table>

Key:
** - Significant at the .05 level
* - Significant at the .10 level
EXP - Expectations
PERF - Performance

6.4.2 Service Quality - Model 2, H3, H4, H5

The second regression model relates to service quality and it states that:

\[ SQ_x = aDISC_x + bPERF_x + cOPIN_x + \text{Constant} \]

Where:
\[ SQ_x \] = service quality statement for case \( x \)
\[ DISC_x \] = disconfirmation value for case \( x \)
\[ PERF_x \] = performance value for case \( x \)
\[ OPIN_x \] = type of audit opinion for 1995 for case \( x \), dummy variable 0 unqualified, 1 qualified.

The results for model 2 are shown in Table 6.13. They show that while each of the hypothesised variables have a statistically significant impact on service quality, the type of audit opinion has the opposite impact to that hypothesised. Thus, only hypotheses H3 and H4 are supported by the results, and H5 is not supported. Apart from the constant, disconfirmation has the biggest impact, implying that perceptions of service quality are influenced by the manager's psychological assessment of the extent to which actual performance meets, exceeds or falls short of expectations. These results are consistent with most prior theoretical and empirical services marketing research (for example, Bolton and Drew 1991; Oliver 1993). However, a
qualified audit opinion for 1995 is hypothesised to have a negative impact on service quality, because qualifications were assumed to impose costs on managers.

### Table 6.13 Results of Hypotheses Testing - Model 2, Service Quality

<table>
<thead>
<tr>
<th>Variables</th>
<th>Predicted Sign</th>
<th>Coefficient Estimate</th>
<th>t-statistic</th>
<th>p-value</th>
<th>Adj. R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERF (H3)</td>
<td>+</td>
<td>0.208</td>
<td>1.749</td>
<td>0.083*</td>
<td></td>
</tr>
<tr>
<td>DISC (H4)</td>
<td>+</td>
<td>0.758</td>
<td>5.772</td>
<td>0.000**</td>
<td></td>
</tr>
<tr>
<td>OPIN (H5)</td>
<td>-</td>
<td>0.440</td>
<td>1.806</td>
<td>0.074*</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td>0.918</td>
<td>1.490</td>
<td>0.139</td>
<td>0.347</td>
</tr>
</tbody>
</table>

**Key:**
- **: Significant at the .05 level
- *: Significant at the .10 level
- PERF: Performance
- DISC: Disconfirmation
- OPIN: Type of audit opinion, "0" unqualified, "1" qualified

However, a positive result is revealed. The hypothesis was based on conjecture as no prior theoretical or empirical research seems to exist in relation to this question. A reasonable explanation for the result is that auditors are sensitive to clients’ attitudes towards qualifications and, thus, attempt to incorporate recovery tactics in the service they offer when a qualification is imminent. The positive relationship between service quality and qualifications could indicate that the auditor has been successful in such recovery tactics. Moreover, the costs associated with a qualification have been shown to be a function of the seriousness of the qualification (for example, Craswell 1988), thus the impact of such costs may have been overstated (see footnote 2 for a description of the nature of the qualifications included in the sample). Interestingly, when the responses of financial accountants only are used, performance (H3) does not have a significant impact on service quality. This again, suggests that the specification of the service model may depend on the type of respondent used.

### 6.4.3 Technical Quality - Model 3, H7, H8, H9

Model 3 states that:
\[ TQ_{px} = a \text{PERF}_x + d \text{TEN}_x + c \text{AF}_x + b \text{SIZE}_x + \text{constant} \]

Where:
- \( TQ_{px} \) = technical quality statement \( p \) for case \( x \)
- \( \text{PERF}_x \) = performance value for case \( x \)
- \( \text{TEN}_x \) = length of tenure in terms of years 1 to 5
- \( \text{AF}_x \) = audit firm, dummy variable 0 Non-Big 6, 1 Big 6
- \( \text{SIZE}_x \) = size of the client in terms of log of total assets

Table 6.14 shows the results for regressions involving technical quality which was defined in eight different ways (see section 5.2). The dependent variable for the first regression (TQTOT) is the average of the seven individual technical quality statements and as such, it represents a composite scale for the overall construct of technical quality. The independent variables are performance and the engagement characteristics, length of tenure, audit firm size and client size. The adjusted \( R^2 \) for all, but the composite scale, are rather low, indicating that the independent variables are better predictors of overall technical quality perceptions, than perceptions relating to individual misstatements.

For each of the eight different definitions of technical quality, performance shows a statistically significant impact. Client size has an expected significant negative relationship in the regression models 3b and 3c. In regression 3b, the dependent variable is defined as the auditor's ability to detect fraud and in regression 3c, it is defined as the auditor's ability to detect illegal acts. Given that client size was not significant for all definitions of technical quality, the result obtained for 3b and 3c is intuitively appealing. This is because, based on the literature, it is concluded in section 6.2, that the 3b and 3c definitions of technical quality are the most difficult for auditors to achieve. Thus, these should be the first to be affected by client size. However, when Wespac Limited is excluded from the sample (on the grounds that it
is an outlier), client size becomes significant and the adjusted $R^2$ is improved, for each definition of technical quality.

Table 6.14 Results of Hypotheses testing - Model 3, Technical Quality

<table>
<thead>
<tr>
<th>Variables</th>
<th>Predicted Sign</th>
<th>Coefficient Estimate</th>
<th>t-statistic</th>
<th>p-value</th>
<th>Adj. $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 3a - dependent - TQTOT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PERF (H6)</td>
<td>+</td>
<td>0.982</td>
<td>5.780</td>
<td>0.000**</td>
<td></td>
</tr>
<tr>
<td>TEN (H7)</td>
<td>+</td>
<td>0.020</td>
<td>0.210</td>
<td>0.834</td>
<td></td>
</tr>
<tr>
<td>AF (H8)</td>
<td>+</td>
<td>0.247</td>
<td>0.766</td>
<td>0.445</td>
<td></td>
</tr>
<tr>
<td>SIZE (H9)</td>
<td>-</td>
<td>-0.100</td>
<td>-1.589</td>
<td>0.115</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td>2.036</td>
<td>1.784</td>
<td>0.077</td>
<td>0.221</td>
</tr>
<tr>
<td>Model 3b - dependent - Detect Fraud</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PERF (H6)</td>
<td>+</td>
<td>1.018</td>
<td>4.274</td>
<td>0.000**</td>
<td></td>
</tr>
<tr>
<td>TEN (H7)</td>
<td>+</td>
<td>-0.075</td>
<td>-0.553</td>
<td>0.581</td>
<td></td>
</tr>
<tr>
<td>AF (H8)</td>
<td>+</td>
<td>0.169</td>
<td>0.370</td>
<td>0.712</td>
<td></td>
</tr>
<tr>
<td>SIZE (H9)</td>
<td>-</td>
<td>-0.231</td>
<td>-2.563</td>
<td>0.012</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td>2.740</td>
<td>1.677</td>
<td>0.096</td>
<td>0.150</td>
</tr>
<tr>
<td>Model 3c - dependent - Detect Illegal Acts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PERF (H6)</td>
<td>+</td>
<td>1.125</td>
<td>5.026</td>
<td>0.000**</td>
<td></td>
</tr>
<tr>
<td>TEN (H7)</td>
<td>+</td>
<td>-0.043</td>
<td>-0.338</td>
<td>0.736</td>
<td></td>
</tr>
<tr>
<td>AF (H8)</td>
<td>+</td>
<td>0.155</td>
<td>0.361</td>
<td>0.718</td>
<td></td>
</tr>
<tr>
<td>SIZE (H9)</td>
<td>-</td>
<td>-0.201</td>
<td>-2.382</td>
<td>0.019*</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td>1.658</td>
<td>1.080</td>
<td>0.282</td>
<td>0.184</td>
</tr>
<tr>
<td>Model 3d - dependent - Detect Mistakes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PERF (H6)</td>
<td>+</td>
<td>0.734</td>
<td>3.401</td>
<td>0.001**</td>
<td></td>
</tr>
<tr>
<td>TEN (H7)</td>
<td>+</td>
<td>0.103</td>
<td>0.845</td>
<td>0.400</td>
<td></td>
</tr>
<tr>
<td>AF (H8)</td>
<td>+</td>
<td>0.504</td>
<td>1.217</td>
<td>0.226</td>
<td></td>
</tr>
<tr>
<td>SIZE (H9)</td>
<td>-</td>
<td>-0.094</td>
<td>-1.152</td>
<td>0.252</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td>3.286</td>
<td>2.221</td>
<td>0.028</td>
<td>0.083</td>
</tr>
<tr>
<td>Model 3e - dependent - Detect Accounting Judgement Errors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PERF (H6)</td>
<td>+</td>
<td>0.818</td>
<td>4.223</td>
<td>0.000**</td>
<td></td>
</tr>
<tr>
<td>TEN (H7)</td>
<td>+</td>
<td>0.144</td>
<td>1.314</td>
<td>0.192</td>
<td></td>
</tr>
<tr>
<td>AF (H8)</td>
<td>+</td>
<td>0.605</td>
<td>1.629</td>
<td>0.106</td>
<td></td>
</tr>
<tr>
<td>SIZE (H9)</td>
<td>-</td>
<td>-0.058</td>
<td>-0.787</td>
<td>0.432</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td>2.477</td>
<td>1.866</td>
<td>0.065</td>
<td>0.138</td>
</tr>
</tbody>
</table>

Continued next page....
### Table 6.14 Results of Hypotheses testing - Model 3, Technical Quality, continued

<table>
<thead>
<tr>
<th>Variables</th>
<th>Predicted Sign</th>
<th>Coefficient Estimate</th>
<th>t-statistic</th>
<th>p-value</th>
<th>Adj. R²</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model 3f - dependent - Detect Income Smoothing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PERF (H6)</td>
<td>+</td>
<td>1.225</td>
<td>5.110</td>
<td>0.000**</td>
<td></td>
</tr>
<tr>
<td>TEN (H7)</td>
<td>+</td>
<td>0.067</td>
<td>0.495</td>
<td>0.621</td>
<td></td>
</tr>
<tr>
<td>AF (H8)</td>
<td>+</td>
<td>0.175</td>
<td>0.379</td>
<td>0.706</td>
<td></td>
</tr>
<tr>
<td>SIZE (H9)</td>
<td>-</td>
<td>-0.018</td>
<td>-0.198</td>
<td>0.843</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td>0.036</td>
<td>1.866</td>
<td>0.983</td>
<td>0.165</td>
</tr>
</tbody>
</table>

| **Model 3g - dependent - Detect Internal Control Deficiencies** | | | | | |
| PERF (H6) | + | 1.093 | 5.264 | 0.000** | | |
| TEN (H7) | + | -0.120 | -1.025 | 0.308 | | |
| AF (H8) | + | 0.159 | 0.399 | 0.691 | | |
| SIZE (H9) | - | -0.039 | -0.498 | 0.619 | | |
| (Constant) | | 1.360 | 0.955 | 0.342 | 0.176 | |

| **Model 3h - dependent - Detect Going Concern Problems** | | | | | |
| PERF (H6) | + | 0.848 | 3.767 | 0.000** | | |
| TEN (H7) | + | 0.059 | 0.463 | 0.645 | | |
| AF (H8) | + | -0.007 | -0.016 | 0.987 | | |
| SIZE (H9) | - | -0.058 | -0.678 | 0.499 | | |
| (Constant) | | 2.690 | 1.742 | 0.084 | 0.084 | |

**Key:**
- **** - Significant at the .05 level
- * - Significant at the .10 level
- TQTOT - Total technical quality, (average of seven technical quality statements)
- PERF - Performance
- TEN - Length of audit tenure, 0 to 5
- AF - Type of audit firm, "0" non-big 6 , "1" big 6
- SIZE - Client size in term of natural log of total assets.

Length of tenure and audit firm size seem to have no impact on perceptions about the auditor's technical abilities. If this is a true reflection of actual performance, it is, of course an ideal finding from the point of view of the profession. It implies that the level of technical quality is perceived to be consistent across engagement settings (with the exception of large clients for the most difficult audit tasks). Thus, hypotheses H6 is supported, H9 is supported in two out of eight cases and H7 and H8
are not supported. Dassen (1995) tested the impact of client size, client financial health, tenure and the level of other fees paid to the auditor on various technical quality statements. Somewhat consistent with the results obtained here, he found support only for client size (measured in sales). There are no differences between the responses by directors and financial accountants in respect of model 3.

6.4.4 Independence, Model 4, H10 and H11

Model 4 states that:

\[ \text{IND}_{px} = a\text{OPIN}_x + b\text{AF}_x + \text{constant} \]

Where:

\[ \text{IND}_{px} = \text{independence statement p for case x} \]

\[ \text{OPIN}_x = \text{type of audit opinion for 1995 for case x, dummy variable 0 unqualified, 1 qualified} \]

\[ \text{AF}_x = \text{audit firm, dummy variable 0 Non-Big 6, 1 Big 6.} \]

Model 4 relates to managers' perceptions of independence where independence was defined in two ways. It was defined, first, as the probability that the auditor would report a material misstatement which was subject to managerial dispute, to the audit committee, and second, as the probability the auditor would qualify the audit report if he or she discovered a material misstatement which the management refused to correct. However, as shown in Table 6.15, the results for both regressions are disappointing. The adjusted $R^2$'s are below a meaningful level and neither of the independent variables have an significant impact on perceptions of independence in the expected direction\(^8\).

As for technical quality it seems that perceptions of auditor independence are also unaffected by audit engagement characteristics. The exception is an unexpected negative relationship between the type of opinion issued and whether the auditors

---

\(^8\) A composite scale of the two independence variables was used as the dependent variable, but it did not improve the adjusted $R^2$. 
would report disputes to the audit committee. This result is counter intuitive, because it implies that auditors are perceived to be less independent if they qualify their opinions. Qualifications are, of course, a signal that the auditor is independent. The ability to obtain accurate data about the level of perceived auditor independence is limited by the sensitive nature of the question. It is unlikely that, using the research method employed in this thesis, a lack of auditor independence will be revealed. This is an unavoidable limitation of this type of research method. This problem no doubt contributed to the low adjusted $R^2$ (.022 and -.013) obtained in respect of these regressions. Thus, hypotheses H10 and H11 are not supported by the results of this research. There are no differences between the responses of financial accountants and directors in respect of model 4.

### Table 6.15 Results of Hypotheses testing - Model 4, Independence

<table>
<thead>
<tr>
<th>Variables</th>
<th>Predicted Sign</th>
<th>Coefficient Estimate</th>
<th>t-statistic</th>
<th>p-value</th>
<th>Adj. $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model 4a - Report to Audit Committee</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPIN (H10)</td>
<td>+</td>
<td>-1.105</td>
<td>-1.951</td>
<td>0.053*</td>
<td></td>
</tr>
<tr>
<td>OPIN (H10)</td>
<td>+</td>
<td>0.184</td>
<td>0.420</td>
<td>0.675</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>+</td>
<td>8.084</td>
<td>20.062</td>
<td>0.000</td>
<td>0.022</td>
</tr>
<tr>
<td><strong>Model 4b - Qualify Audit Report</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPIN (H10)</td>
<td>-</td>
<td>-0.251</td>
<td>-0.372</td>
<td>0.710</td>
<td></td>
</tr>
<tr>
<td>AF (H11)</td>
<td>+</td>
<td>0.125</td>
<td>0.238</td>
<td>0.812</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td>7.536</td>
<td>15.772</td>
<td>0.000</td>
<td>-0.013</td>
</tr>
</tbody>
</table>

**Key:**
- **Significant at the .05 level**
- **Significant at the .10 level**
- **OPIN** type of audit opinion, "0" unqualified, "1" qualified
- **AF** type of audit firm, "0" non-big 6, "1" big 6

---

9. One respondent replied by stating that asking about the auditor's level of independence was akin to asking "do you beat your wife?". Thus, if the actual answer was affirmative, inaccurate responses would most likely be given.
6.4.5 Behavioural Intentions, Model 5, H12 and H13

Model 5 relates to behavioural intentions and is stated as follows in chapter five:

\[
\text{INT}_{px} = a\text{SQ}_x + b\text{TQ}_x + \text{constant}
\]

Where:

\[
\begin{align*}
\text{INT}_{px} &= \text{behavioural intentions statement p for case x} \\
\text{SQ}_x &= \text{service quality statement for case x} \\
\text{TQ}_x &= \text{average of seven technical quality statements for case x}.
\end{align*}
\]

The dependent variable, behavioural intentions, is measured in the following three ways:

a. Intention at the next review of the auditor’s appointment to recommend that the auditor be retained;

b. Intention to recommend the purchase of other services from the audit firm; and

c. Intention to recommend the audit firm to a colleague.

In addition to the overall concepts of service quality (SQ) and traditional technical audit quality (TQ), alternative measures of service and technical quality are used to test the same hypotheses. These measures are adopted to make the results comparable to prior marketing research and provide further insight about the relationship between perceptions of quality and managers’ intentions. These alternative measures involve the use of the performance factors, service and reliability, (see section 6.3). The results for the regressions in which service and technical quality are defined as SQ and TQ are shown in Table 6.16 and the results in respect of the alternative definitions of the independent variables are contained in Table 6.17.

Both service quality and traditional technical quality are hypothesised to have an impact on behavioural intentions, but the results in Table 6.16 reveal that only service quality has a statistically significant impact. This is true for each of the three
different measures of behavioural intentions\textsuperscript{10} \textsuperscript{11}. Thus, using these definitions of service and technical quality, hypotheses H12 is supported, but H13 is not. These results, therefore, suggest that the decision to positively recommend the auditor depends on more than just traditional technical audit quality. They show that the service quality construct is important in retaining clients and providing other services to an audit client. These results are limited by the multicolinearity between the independent variables, service and technical quality (.506 Spearman rank correlation).

**Table 6.16 - Results of Hypotheses testing - Model 5, Behavioural Intentions**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Predicted Sign</th>
<th>Coefficient Estimate</th>
<th>t-statistic</th>
<th>p-value</th>
<th>Adj. R(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model 5a - Recommend Auditor be Retained</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service quality (H12)</td>
<td>+</td>
<td>1.187</td>
<td>6.136</td>
<td>0.000**</td>
<td></td>
</tr>
<tr>
<td>Technical quality (H13)</td>
<td>+</td>
<td>-0.008</td>
<td>-0.067</td>
<td>0.946</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td>1.631</td>
<td>1.681</td>
<td>0.095</td>
<td>.267</td>
</tr>
<tr>
<td><strong>Model 5b - Recommend Purchase of Other Services</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service quality (H12)</td>
<td>+</td>
<td>0.640</td>
<td>3.070</td>
<td>0.003**</td>
<td></td>
</tr>
<tr>
<td>Technical quality (H13)</td>
<td>+</td>
<td>0.118</td>
<td>0.879</td>
<td>0.381</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td>2.795</td>
<td>2.673</td>
<td>0.009</td>
<td>0.104</td>
</tr>
<tr>
<td><strong>Model 5c - Recommend Auditor to Colleague</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service quality (H12)</td>
<td>+</td>
<td>1.475</td>
<td>9.582</td>
<td>0.000**</td>
<td></td>
</tr>
<tr>
<td>Technical quality (H13)</td>
<td>+</td>
<td>0.068</td>
<td>0.691</td>
<td>0.491</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
<td>-1.319</td>
<td>-1.709</td>
<td>0.090</td>
<td>0.498</td>
</tr>
</tbody>
</table>

Key:

- Significant at the .05 level
- Significant at the .10 level

The related adjusted R\(^2\)'s indicate that the model explains managers' intentions to recommend that the auditor be retained (model 5a) far better than it explains their intentions to recommend the purchase of other services from the audit firm (model 5b). Moreover, managers' perceptions of audit service quality explain 49% (the

\textsuperscript{10} Each of the seven individual technical quality statements were also regressed with service quality against each of the three behavioural intentions. The results were similar to those reported above where technical quality is defined as the average of the seven individual statements.

\textsuperscript{11} Behavioural intentions measured as the dollar value of other services purchased in 1995 was also included. However, no significant relationships between this and service or technical quality were revealed.
highest $R^2$ of the three models) of the variation in their intentions to recommend the audit firm (as an audit firm) to a colleague. The fact that the model explains only 10% of the variance in managers' decisions to recommend the purchase of other services from the audit firm, suggests that something other than perceptions about the quality of the audit service drive these decisions. There are no differences between the responses of financial accountants and directors in respect of model 5.

One other possible explanation for the model 5 results is that the audit firm can provide these services at a cheaper rate, and this is what is the main determinate of the purchase of other services from the audit firm, not perceptions of audit service quality. In support of this argument, it was noted in chapter three that the auditor and client could benefit from "knowledge spill-overs" when the audit firm also provided management consulting services to the client (Simunic 1984; Abdel-khalik 1990). That is, the auditor has a competitive advantage in providing management consulting services to the client and they can, therefore, offer lower fees.

The result obtained is consistent with the suggestion made in section 2.4 that audit clients may not regard traditional audit quality as a surrogate for the quality of other services provided by the audit firm. Consequently, the client will not necessarily purchase other services from the audit firm, even if the audit firm provides a high level of quality in the traditional sense. Moreover, it was suggested in section 3.3 that the auditor's legal liability and desire to maintain brand name reputation provides the incentive for auditors to achieve high technical quality. It was further suggested that the motivation for high service quality is provided by the desire to retain clients and to offer successfully other service to them. These results support these insights and add to our understanding about the nature of the differences between service and traditional technical audit quality. They also provide interesting evidence about the nature of the relationship between auditors and their clients. The evidence suggests that audit clients base their decisions to positively recommend the auditor on
something other than on the auditor’s traditional role, that is, they base it on audit service quality.

It is important to note that the overall concept of service quality contains dimensions of the auditor’s technical competence, in the form of the reliability and control attributes. Thus, while the results presented in Table 6.16, suggest that perceptions about traditional technical audit quality is not associated with behavioural intentions, it does not suggest that technical competence is unrelated to behavioural intentions. This point is explained in the following paragraph and the results of the related empirical tests are presented on Table 6.17.

It was noted in section 2.4 that the link between service and technical quality and behavioural intentions has been studied by services marketing researchers (Cronin and Taylor 1992; Taylor and Baker 1994; Zeithaml, Berry and Parasuraman 1996; Sweeney, Soutar and Johnson 1997). With respect SQ, the results presented above and in Table 6.16, are consistent with the related services marketing research. However, the comparison of the results relating to technical quality and behavioural intentions is problematical, because the concept of technical quality adopted in this thesis is rather different to that used in the marketing literature. In addition, the prior marketing research which has tested the impact of both service and technical quality, have used an alternative definition of service quality to SQ. For example, Sweeney, Soutar and Johnson (1997), used “functional” quality, measured as five of the original SERVQUAL items relating to “responsiveness”, “empathy” and “courtesy”. They measured technical quality as one item relating to competence, from the original SERVQUAL items. To allow for a comparison of the results with this, the most current marketing research, service and technical quality constructs similar to those adopted by Sweeney, Soutar and Johnson (1997), are adopted here. To match their definitions, as much as possible, performance factors, revealed in the preceding analysis, relating to the auditor’s technical competence (reliability) and “functional”
quality (service), are used (see section 6.3). Using the same dependent variables as in
model 5 (three behavioural intentions) and the reliability and service factors as the
independent variables, revealed the results presented in Table 6.17. Both service
(functional quality) and reliability (competence) were found to have a significant
impact on behavioural intentions defined as a recommendation to purchase other
services (model 5e) and as a recommendation to colleagues (model 5f). Only
reliability has a significant impact on behavioural intentions defined as a
recommendation that the auditor be retained (Model 5d). However, two of the related
three models (5d and 5e) have unacceptably low R²'s (.028 and .138, respectively),
thereby, limiting their usefulness. The importance of the reliability factor, as revealed
by these results, re-enforces the suggestion made above that while performance
related to the traditional audit function does not impact behavioural intentions,
performance related to technical competence does have an impact. This finding is
consistent with Sweeney, Soutar and Johnson (1997).

Table 6.17 Reliability and Service Factors and Behavioural Intentions

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient Estimate</th>
<th>t-statistic</th>
<th>p-value</th>
<th>Adj. R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service</td>
<td>-0.132</td>
<td>-0.481</td>
<td>0.631</td>
<td></td>
</tr>
<tr>
<td>Reliability</td>
<td>0.653</td>
<td>2.134</td>
<td>0.035*</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>5.199</td>
<td>3.680</td>
<td>0.000</td>
<td>0.028</td>
</tr>
<tr>
<td>Dependent: Recommend Auditor be Retained</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td>0.639</td>
<td>2.396</td>
<td>0.018*</td>
<td></td>
</tr>
<tr>
<td>Reliability</td>
<td>0.515</td>
<td>1.730</td>
<td>0.086*</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>0.650</td>
<td>0.472</td>
<td>0.637</td>
<td>0.138</td>
</tr>
<tr>
<td>Dependent: Recommend Purchase of Other Services</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td>0.394</td>
<td>1.706</td>
<td>0.090*</td>
<td></td>
</tr>
<tr>
<td>Reliability</td>
<td>1.013</td>
<td>3.923</td>
<td>0.000**</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>-0.535</td>
<td>-0.449</td>
<td>0.654</td>
<td>0.243</td>
</tr>
</tbody>
</table>

Key:
** - Significant at the .05 level
*  - Significant at the .10 level
The results relating to hypotheses testing are summarised in Table 6.18. The empirical results obtained from testing models 1 and 2 support the theoretical model developed in chapter two for the audit service. In addition to the marketing literature constructs, the impact on service quality of one engagement characteristic, type of audit opinion, was tested. This was found to have an effect opposite to that hypothesised. This is interpreted as successful service recovery tactics by the audit firm. The impact of various engagement characteristics on technical quality and independence is tested by models 3 and 4. Apart from client size, no other engagement characteristic was found to have an impact. This is interpreted as an encouraging result from the perspective of the accounting profession as it suggests that audit quality is consistent across engagement settings.

6.18 Summary of Results of Hypotheses Testing

<table>
<thead>
<tr>
<th>#</th>
<th>Hypothesis</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Expectations will have a negative impact on disconfirmation</td>
<td>Supported</td>
</tr>
<tr>
<td>H2</td>
<td>Performance will have a positive impact on disconfirmation.</td>
<td>Supported</td>
</tr>
<tr>
<td>H3</td>
<td>Performance will have a positive impact on service quality</td>
<td>Supported</td>
</tr>
<tr>
<td>H4</td>
<td>Disconfirmation will have a positive impact on service quality</td>
<td>Supported</td>
</tr>
<tr>
<td>H5</td>
<td>Qualified audit opinions will be associated with lower levels of service quality</td>
<td>Not supported</td>
</tr>
<tr>
<td>H6</td>
<td>Performance will have a positive impact on technical quality</td>
<td>Supported</td>
</tr>
<tr>
<td>H7</td>
<td>Audit firm tenure will have a positive impact on technical quality</td>
<td>Not supported</td>
</tr>
<tr>
<td>H8</td>
<td>Audit firm size will have a positive impact on technical quality</td>
<td>Not supported</td>
</tr>
<tr>
<td>H9</td>
<td>Client size will have a negative impact on technical quality</td>
<td>Supported</td>
</tr>
<tr>
<td>H10</td>
<td>Qualified audit opinions will have a positive impact on independence</td>
<td>Not supported</td>
</tr>
<tr>
<td>H11</td>
<td>Audit firm size will have a positive impact on independence</td>
<td>Not supported</td>
</tr>
<tr>
<td>H12</td>
<td>Service quality will have a positive impact on behavioural intentions</td>
<td>Supported</td>
</tr>
</tbody>
</table>
The results of model 5, revealed that only service quality had a significant impact on behavioural intentions. Performance relating to the traditional role of the auditor (TQ) does not appear to have an impact on behavioural intentions. However, additional analysis, presented in Table 6.17, show that while TQ, does not have a significant impact on behavioural intentions, perceptions relating to the auditor's level of competence (that is, the reliability factor), do have a significant impact on behavioural intentions. Finally, some differences between the responses of directors and financial accountants are noted.

6.5 The Relative Impact of Performance Factors on Audit Quality

To gain further insight about the differences between traditional technical audit quality and service quality, two additional regressions model are developed in section 5.3.3. These models are designed to reveal the relative importance of the various performance attributes in the formation of service and traditional technical quality assessments. In chapter five, the models are expressed in terms of performance attributes, however, because the factor analysis has already been presented, it is now possible to express them in terms of actual factors. The model relating to service quality (model A) is stated as:

\[ SQ_x = a_{\text{Service}} + b_{\text{Reliability}} + c_{\text{Control}} + d_{\text{Attitude}} + \text{constant} \]

Where:

\[ SQ_x = \text{service quality statement for case x} \]
\[ \text{Service} = \text{average of variables contained in performance factors labelled service (see Table 6.9)} \]
\[ \text{Reliability} = \text{average of variables contained in performance factors labelled reliability (see Table 6.9)} \]
Control = average of variables contained in performance factors labelled control (see Table 6.9)

Attitude = average of variables contained in performance factors labelled attitude (see Table 6.9)

The model relating to traditional technical quality is stated as:

\[ TQ_x = aService + bReliability + cControl + dAttitude + \text{constant} \]

Where

\[ TQ_x \] = average of seven technical quality statements for case x.

Service = average of variables contained in performance factors labelled service (see Table 6.9)

Reliability = average of variables contained in performance factors labelled reliability (see Table 6.9)

Control = average of variables contained in performance factors labelled control (see Table 6.9)

Attitude = average of variables contained in performance factors labelled attitude (see Table 6.9)

The results of these regressions are presented in this section in Table 6.1912. The results show that, for both service and technical quality perceptions, reliability is the most important attribute. Prior relevant studies also have found reliability or a related factor to be the most important factor (for example, Parasuraman, Zeithaml and Berry 1988; Dassen 1995).

Service is the second most important attribute for both, however, its impact is negative for technical quality. This represents a significant difference between the service and technical quality constructs. The negative relationship between technical

12. The other variables suggested by models 2 and 3 for service and technical quality have been excluded from this analysis, because only prior gap model studies have considered the relative importance of performance factors (see section 5.3.3).
quality and the service factor could be interpreted to mean that less competent auditors try to make up for their incompetence by providing better service, or that the service factor is incompatible with traditional audit quality. Another difference between service and technical quality lies in that control has a significant impact on technical quality, but not on service quality\(^\text{13}\). Attitude does not have a significant impact on either quality construct.

**Table 6.19 Impact of Performance Factors on Service and Technical Quality**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient Estimate</th>
<th>t-statistic</th>
<th>p-value</th>
<th>Adj. R(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent: Service Quality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td>0.365</td>
<td>2.522</td>
<td>0.013(*)</td>
<td></td>
</tr>
<tr>
<td>Reliability</td>
<td>0.448</td>
<td>2.943</td>
<td>0.004(**)</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>-0.154</td>
<td>-1.533</td>
<td>0.123</td>
<td></td>
</tr>
<tr>
<td>Attitude</td>
<td>-0.054</td>
<td>-0.300</td>
<td>0.765</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>2.045</td>
<td>2.831</td>
<td>0.006</td>
<td>0.214</td>
</tr>
<tr>
<td><strong>Dependent: Technical Quality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service</td>
<td>-0.465</td>
<td>-2.363</td>
<td>0.020(*)</td>
<td></td>
</tr>
<tr>
<td>Reliability</td>
<td>1.135</td>
<td>5.472</td>
<td>0.000(**)</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>0.321</td>
<td>2.376</td>
<td>0.019(**)</td>
<td></td>
</tr>
<tr>
<td>Attitude</td>
<td>0.018</td>
<td>0.074</td>
<td>0.941</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>1.056</td>
<td>10.76</td>
<td>0.284</td>
<td>0.363</td>
</tr>
</tbody>
</table>

**Key:**
- **\(*\)** Significant at the .05 level
- **\(** Significant at the .10 level

These results are consistent with the definitions given in chapter two for both constructs. For example, the factors which have a positive impact on technical quality are comprised of variables related to the auditor's technical competence (reliability and control) and the attributes which are comprised of variables unrelated to the auditor's technical competence (service and attitude) have a negative impact or

\(^{13}\) The technical quality variable used here is the sum of seven different technical quality statements, that is, the composite scale. One of these statements relates to the auditor’s ability to detect internal control weaknesses. Thus, the result reported above could be somewhat biased upward as the dependent and independent variables include a measure of the same construct. However, when the dependent variable was calculated again this time excluding the technical quality statement relating to internal control, the results remained very similar and of most relevance the control factor remained statistically significant.
no impact. On the other hand, the service attribute, as would be expected, has a significant impact on service quality. Thus, the results support the notion that service quality goes beyond reliability or technical competence and the traditional definition of audit quality.

While the above results relate to the whole sample, some differences exist between the responses of directors and financial accountants in respect of models A and B. For example, unlike directors, for financial accountants, the service factor does not have a significant impact on service quality and unlike financial accountants, for directors the control factor does not have a significant impact on technical quality. Thus, the importance of the service factor in service quality assessments is driven by the responses of directors. Further, the negative impact of the service factor and the positive impact of the control factor on technical quality, are driven by the responses of financial accountants. Thus, the control factor is not significant in the formation of either technical or service quality assessments, as perceived by directors. This result is surprising, because, as noted in section 3.1.2, directors have an incentive to demand audit to acquire the control attribute. However, it seems that only financial accountants use it as a means of assessing traditional audit quality. These results, therefore, suggest that the audit quality attributes considered to be of importance depends on the type of respondent.

Finally, the sample is again split into two, this time according to whether or not the company has an internal audit division (irrespective of the size of the division)\textsuperscript{14}. This split also resulted in a split of the sample by size of the client, because clients with internal audit divisions are far bigger than those without internal auditors\textsuperscript{15}. The results reveal that the service, reliability and control factors have a significant impact on service quality for clients without internal auditors. However, the impact of the

\textsuperscript{14} This information was elicited in question 14 of the questionnaire.

\textsuperscript{15} Forty three companies in the sample had internal auditors and the average of total assets for these companies is $6,236,726,000. The average of total assets for the 93 Companies in the sample without internal auditors is $106,992,000.
control factor is negative for these clients (for clients with internal auditors, it has no impact on service quality). It would seem that relatively smaller companies without internal auditors do not value external auditors' contribution to internal control. However, without further research it is not possible to say what drives this result. For example, it could be that other aspects of these companies' internal control structure are sound and, therefore, they do not need the contributions of internal or external auditors. Alternatively, these results may be an indication of the attitude of these clients towards internal control and, perhaps, corporate governance, in general. That is, they do not regard it as important.

6.6 Summary

This chapter presents the results of the hypotheses testing and other testing of the research questions. First, the descriptive statistics showed that the sample used to test the hypotheses is representative of the population. Second, the factor analysis confirmed the theoretical attributes of reliability, control and ancillary services. Moreover, ancillary service are revealed to be made up of two factors, service and attitude.

The results of the factor analysis and certain audit engagement characteristics are used in five regression models to test the hypotheses. Five out of thirteen hypotheses are supported. These results are mainly consistent with prior marketing and auditing literature, for example, the positive results relating to regression models 1 and 2 confirm the findings in the marketing literature. Related prior audit literature was also supported in that only one engagement factor, client size is found to have an impact on perceptions of technical quality, and this was true for only two out of eight dimensions of technical audit quality. However, when Westpac Limited is excluded from the sample (on the grounds that it is an outlier), client size is significant for each definition of technical quality used. This is interpreted as a pleasing result from the point of view of the profession as it supports the notion that audit quality is not
perceived to vary, to a significant extent, across different engagement settings. It also suggests that it will not be necessary, in the future, to include these engagement characteristics in related research.

Finally, the investigation of the relative importance of performance factors revealed the nature of some of the differences between service and technical quality (the fifth research question). These results are also consistent with the related theoretical discussion (chapter two). For example, the attributes which have a positive impact on technical quality are comprised of variables related to the auditor's technical competence (reliability and control) and the attributes which are comprised of variables unrelated to the auditor's technical competence (service and attitude) have a negative impact or no impact. On the other hand, the service attribute, as would be expected, has a significant impact on service quality.
Chapter 7. Conclusions

7.0 Introduction

The aim in this thesis is to investigate the nature of managers’ post-purchase evaluation of external audit quality. The theoretical analysis and empirical results presented in the preceding chapters provide evidence about the nature of the relationship between external, statutory auditors, and their clients. This is a relationship which is of considerable interest to all parties involved in the production and use of financial reports; users of financial reports (users), managers, directors, auditors, regulators and the professional bodies. The auditor/client relationship is analysed, in chapters two, three and four, by integrating three, thus far, distinct literatures. Insights and guidance is obtained from the services marketing, economics of auditing and behavioural auditing survey literatures. An improved approach to considering audit quality is proposed in the form of a service quality model and attributes which can be used to assess service quality. Five specific research questions are used to guide the investigation:

1. Which of the services marketing models is applicable to the audit service?
2. What are the dimensions of audit quality as perceived by managers?
3. What impact do audit engagement characteristics have on managers’ perceptions of audit quality?
4. What impact do perceptions of service and technical quality have on behavioural intentions?
5. What are the differences between audit service and technical quality?
The purpose of this chapter is to summarise the research findings and general conclusions relating to each of these research questions. The discussion relating to research questions one to five is contained in sections 7.1 to 7.5 respectively. Prospects for future research are explored in section 7.6 and the implications of the findings of this research are analysed in section 7.7.

7.1 Research Question One: The Audit Service Model

The investigation of research question one introduces the services marketing literature and applies it to the audit service in a more comprehensive way than any prior audit research. The model states that:

Audit service quality = f(expectations, performance, disconfirmation)

In the marketing literature service quality is broadly defined as the comparison of performance to ideal or excellence based expectations (for example, Oliver 1993). The service quality model, which is depicted in Figure 2.1 in more detail, represents an integration of two main models from the services marketing literature. Consistent with Bolton and Drew (1991), the overall construct of service quality is adopted rather than customer satisfaction/dissatisfaction, because, as argued by Bolton and Drew (1991), service quality is more relevant to long term or continuous services. Oliver (1993) also argued that service quality is a more lasting construct than customer satisfaction/dissatisfaction. Because of the long term nature of the audit engagement, clients have an opportunity to form perceptions about the level of service quality received. Thus, the overall construct of service quality is more suited to the audit service than customer satisfaction/dissatisfaction.
As shown in Figure 3.1, expectations are hypothesised to have only an indirect impact on service quality via disconfirmation, whereas performance is hypothesised to have both an indirect and a direct impact. While Bolton and Drew (1991) did not include expectations in their model of service quality, expectations are argued to be highly relevant to the audit service given the imposed nature of the service and its significance to the entity in terms of cost and potential impact on financial reporting. Expectations are defined as ideal, or the level of service that "should be" provided, rather than as the predicted or expected level of performance (Myer 1991). The performance construct in the model relates simply to the actual level of performance as it is perceived. The last construct in the model, disconfirmation, is designed to capture the psychological comparison between expectations and performance.

The service model adopted in this thesis is unique in the sense that it has not been empirically tested in this form in either the marketing or auditing literatures. In the services marketing literature, the model of Bolton and Drew (1991) is most similar to the present model, the only difference being that they did not include the expectations construct. The only significant study in the auditing literature to use a marketing services model is Dassen (1995)\(^1\). However, while he used service quality as the overall construct to capture client perceptions, he used the arithmetic version of the disconfirmation construct, that is, the gap model, rather than measuring disconfirmation as a separate distinct construct.

The model of the audit service, developed in chapter two (see regression models 1 and 2), is tested using a highly structured questionnaire. Respondents are high

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\(^1\) Significance of Dassen's (1995) study lies in the fact the he extended it beyond an investigation of the dimensions of audit quality.
ranking financial accountants who were asked to use their current auditor as the point of reference. The results, which are detailed in chapter six, confirm each of the hypotheses (H1 to H4) relating to the first research question. Expectations are found to have a significant negative impact on disconfirmation, supporting prior customer satisfaction/dissatisfaction literature and the presumption that, the higher the expectations, the less likely they are to be met by actual performance. Consistent with prior service quality literature, performance is found to have a significant direct impact on service quality (Bolton and Drew 1991; Babacus and Boller 1991; Cronin and Taylor 1992). Finally, consistent with Bolton and Drew (1991), disconfirmation is found to have the biggest impact on perceptions of service quality. These results are of interest not only in auditing, but also in marketing, because they provide further evidence about the debate in the marketing literature over the measurement of the disconfirmation construct. The results obtained in this research, support the conceptualisation and measurement of disconfirmation as a separate psychological construct.

As noted, technical audit quality is defined in the traditional sense as the probability the auditor would discover material misstatements in the financial reports. Seven different misstatements are used to define technical quality (see section 5.2.5 and Table 6.4). Respondents were asked to assess the probability that their auditor would discover a specified misstatement. While this design has been used in prior experimental audit studies, it does not appear to have been used in any prior studies of actual audit engagements².

² While Dassen (1995) used actual audit engagements, he elicited technical quality assessments on a seven point likert type. “agree”, “disagree”, scale.
The related descriptive statistics, reported in section 6.2 (Table 6.4), indicate that managers believe that auditors have a higher chance of discovering accounting judgement errors than of discovering illegal acts and fraud. This is consistent with the reasoning that fraud is more difficult to detect than accounting judgement errors, because fraud is likely to be well concealed and often involves collusion. These results indicate that managers perceive that there is a significant chance of material misstatements remaining in the accounts after an audit; the average perceived probability of discovering a misstatement being only 64%. The question is, is 64% acceptable to users? Moreover, we can ask, will the reputation of the profession suffer, because managers on average believe auditors have only a 50% chance of detecting illegal acts and fraud (see Table 6.4).

To investigate the factors that have an impact on managers’ technical quality assessments, a model of technical quality is also proposed (see regression model 3). Based on arguments presented in section 3.3, technical quality is assumed to be a function of only performance, and expectations and disconfirmation are, therefore, excluded from the technical quality model. The results support the hypothesis (H6), that performance has a significant positive effect on technical quality. No prior auditing or marketing study has integrated the concept of traditional audit quality into a services marketing model, in this way. This represents a unique approach which indicates that perceptions of traditional technical audit quality are affected by a number of performance attributes, when summed together.\(^3\)

\(^3\). For an explanation of the precise way in which the performance construct is measured for the purposes of this test, see footnote 2, chapter five.
7.2 Research Question 2: What are the dimensions of audit quality as perceived by managers?

The answer to the second research question lies in the investigation of the scale which makes up the construct of audit quality as perceived by managers; a concept that is not well understood. Based on a review of the audit literature (chapter three) four overall attributes are identified; credibility, reliability, control and ancillary services. The credibility attribute is not, however, included in the subsequent empirical testing, because it is argued to be a pre-purchase attribute which tends to remain constant and, therefore, is not relevant to the assessment of audit service quality. Moreover, prior studies have found that clients consider audit team attributes more important than audit firm wide attributes (for example, Schroeder, Solomon and Vickery 1986; Carcello, Hermanson and McGrath 1992).

Further qualitative research, described in chapter five, led to the identification of 28 variables representing aspects of both technical audit quality and audit service quality. The responses are factor analysed to confirm the theoretical attributes and to reveal any other attributes which may underlie service quality assessments. Factor solutions are obtained for expectations, performance and disconfirmation.

The results confirmed the reliability and the control attributes and suggest that the ancillary services attribute is comprised of two factors, service and attitude (professionalism and attitude at the expectations level). The reliability attribute is closely related to the traditional definition of audit technical quality and contains performance variables which can be used to infer overall technical audit quality, in both the traditional sense of the word and in other senses. For example, it contains
the variables, extent of audit partner’s and manager’s industry knowledge and
technical accuracy. While these clearly relate to the audit team’s level of
competence, the other aspect of the traditional definition of audit quality is
independence. At the performance level, the reliability factor also contains variables
associated with independence and skepticism. Factors similar to these have been
identified in prior studies of professional services and in particular audit services.

The control factor relates to the auditor’s role in augmenting the entity’s internal
control system. While, empirical evidence relating to demand for the control factor
by small business clients was found by O’Keefe and Barefield (1986), the present
research represents the first attempt to obtain empirical evidence about the existence
of the control attribute for large audit clients. However, it is recognised that factor
analysis allows us to conclude only that the individual variables used to measure
control, are all measuring the same thing. The relative importance of the control
attribute, along with all the other factors, is investigated as part of research question
five (see section 7.5).

The ancillary services attribute is broadly defined in chapter three as the process by
which the audit service is delivered. The empirical results provide additional
evidence about the nature of this attribute. The first ancillary factor is labelled
service (professionalism for expectations) and relates to performance variables such
as the responsiveness of the audit firm to the client’s needs, availability, and the
extent of personal attention given. The second ancillary factor is labelled attitude and
represents the face-to-face interaction between the members of the audit team and
client staff, specifically whether they are pleasant and polite and cooperative. The
identification of these factors is consistent with several prior studies involving professional services (see Table 6.11).

The analysis of the literature together with the empirical results seem to suggest that the audit service is comprised of performance variables related to the technical competence of the audit team, the auditor's role in augmenting internal control, the nature of the service provided and the attitude of the audit team towards the client. Further analysis relating to the relative importance of these factors in the formation of service and technical quality perceptions is contained in section 7.5.

7.3 Research Question three: What impact do audit engagement characteristics have on managers' perceptions of audit quality?

The impact of engagement characteristics on audit quality has been of concern to the profession and regulators for some time (for example, Metcalf Committee [U.S. Senate 1977]; Shockley 1981; Australian Society of Certified Practicing Accountants and The Institute of Chartered Accountants in Australia 1994). If perceptions of the audit profession are to remain favourable, audit quality must be seen to remain constant across different client settings. The impact of one engagement characteristic, type of audit opinion issued, is tested on service quality. The impact of three engagement characteristics, duration of the appointment, audit firm size and client size, are tested on technical audit quality. Finally, the impact of the type of opinion issued and audit firm size is tested on perceptions of independence.

While the type of audit opinion issued is argued to have a negative impact on perceptions of service quality (owing to the costs imposed on managers by qualifications), the opposite result is obtained. One possible explanation is that
auditors are aware of the client's attitude towards qualifications and incorporate recovery tactics in the service they offer when a qualification is imminent. In fact, it is reasonable to expect that auditors would be experts at these tactics and the result obtained could indicate that the auditor has been successful in these recovery tactics. Moreover, the costs associated with a qualification have been shown to be a function of the seriousness of the qualification (for example, Craswell 1988) and the costs associated with qualified audit opinions, may have been initially overstated. Prior audit literature, reviewed in chapter two, asserts a relationship between auditor switches and qualified audit opinions. Prior audit literature, reviewed in chapter three, relating to audit quality and audit firm size, has as its major focus the reaction of auditors to client threats of dismissal in the event of a dispute. Because this literature is based on economic theory it does not concede the possibility of the auditor's reaction being that of persuasion. Claims of opinion shopping are also based on the premise that managers become disgruntled when the auditor issues a qualified opinion. The evidence presented here, however, suggests that managers do not necessarily react negatively to audit qualifications.

In relation to technical quality, only client size is found to have a significant negative impact. No other engagement characteristic seems to have an impact on perceptions of technical quality. Perceptions of independence also do not seem to be affected by either of the engagement characteristics, type of audit opinion or audit firm size. The related results imply that the type of audit opinion is not necessarily an indicator of auditor independence, which may explain why managers' perceptions of service quality are not negatively affected by qualified opinions (see paragraph above). These results also imply that, despite the extensive economic theory and empirical
research relating to audit firm size and auditor independence (see section 3.1), managers’ perceptions appear unaffected by audit firm size. However, the descriptive statistics suggest that there is variance in perceived auditor independence (see Table 6.5), but which factors explain this variance is not evident from the results of the related model (regression model 4).

The results obtained in this study suggest that audit quality as perceived by managers, is unaffected by engagement characteristics. They imply that the level of service quality, technical quality and independence are perceived to be consistent across engagement settings, with the exception of large clients. These results may provide comfort to the accounting profession, because they imply that perceptions of managers at least, do not reveal variance in audit quality across different client settings. They also suggest that auditors may need to address the perception that they provide lower technical quality for large clients. Such perceptions could be damaging for the profession.

7.4 Research Question Four: What impact do perceptions of service and technical quality have on behavioural intentions?

The impact of perceptions of quality on intentions to repurchase the service from the same supplier has been studied by marketing researchers. This literature is briefly reviewed in chapter two and integrated with audit literature relating to auditor switches and the purchase of other services from the audit firm. Most of the auditor switching studies have been based on the economics of auditing and this literature has tended to ignore behavioural factors such as perceptions of service quality. While economic factors such as agency costs may be important to auditor choice, they do
not explain the choice of a specific audit firm. In contrast, perceptions of service quality can be used to differentiate between equally credible audit firms.

Service and technical quality are both hypothesised to have a positive impact on behavioural intentions, where behavioural intentions are measured in three different ways. First, managers were asked how likely it would be that they would recommend that the auditor be retained. Second, they were asked how likely it would be that they would recommend the purchase of other services from the client. Finally, they were asked how likely it would be that they would recommend the audit firm to a colleague. The results revealed that service quality has a significant positive impact on behavioural intentions, defined in these three ways. This result is consistent with prior services marketing research (for example, Taylor and Baker 1994; Zeithaml, Berry and Parasuraman 1996) and suggests that the decision to recommend the auditor does not depend on the auditor’s ability to detect material misstatements. This implies that, beyond the credibility attribute, managers differentiate audit firms on the basis of service quality rather than traditional audit quality. It should, however, be stressed that one of the most important dimensions of service quality is reliability (see section 7.5) which encompasses performance variables associated with the technical competence of the auditor. These variables can be used to infer both technical quality in the traditional sense and in general.

Following an example from the marketing literature (Sweeney, Soutar and Johnson 1997) the reliability and service factors are used to test the impact of technical and service quality on behavioural intentions. In this context, technical quality refers to competence and service quality refers to functional quality only. Both the service
(functional) and reliability (competence) factors are found to have a significant impact on behavioural intentions defined as a recommendation to purchase other services and as a recommendation to colleagues. This result supports the suggestion made above that while performance related to the traditional audit function does not impact behavioural intentions, performance variables associated with technical competence do have an impact.

7.5 Research Question Five: What are the differences between technical and service quality?

Auditors can be expected to have formulated specifications of technical quality. However, to understand fully the concept of audit quality, auditors and researchers need to combine client perceptions with technical quality. Research question five addresses the link between technical audit quality and managers' perceptions of audit service quality. Three differences between technical and service quality have already been noted as part of the investigation of the other four research questions. These are:

1. Definitional differences (first research question);
2. Differences in the audit engagement factors hypothesised to affect them (third research question); and
3. Differences in their impact on behavioural intentions as revealed by empirical results (fourth research question).

In addition, the relative importance of the four performance factors, reliability, service, control and attitude is analysed and differences between the two concepts of audit quality are investigated. The results suggest that, for both service and technical quality perceptions, reliability is the most important factor. As can be expected for a
professional service, performance variables which can be used to assess the technical competence of the auditor are considered important. Service is the second most important factor for both quality constructs, however, for technical quality, the impact is negative. This represents a significant difference between the service and technical quality constructs and can be interpreted to mean that the service or functional dimension of the audit service is inconsistent with the traditional role of the auditor. It would seem that the auditors who are responsive to client needs, meet agreed deadlines, are available and so forth, are perceived to provide lower traditional audit quality. It is not clear why this is the case, unless less competent auditors attempt to make up for their lack of competence by providing better functional quality.

Another difference between the constructs lies in the significant impact the control factor has on technical quality, but not on service quality. Control may be seen as a by-product of the traditional audit function that is unimportant in service quality assessments. This may be, because the entities in the sample have sound systems of internal control in place (although only 43 of the total of 123 entities indicated that they have an internal audit division) and managers, therefore, believe that auditors do not contribute to internal control. It is possible, however, that if the sample had included more non-executive directors the control attribute would have been significant, because directors have a legal responsibility to ensure the adequacy of internal control systems (see section 3.1.2) and non-executive directors do not have the opportunity to assess or monitor the system themselves to the same extent as executive directors and financial accountants. Interestingly, the control factor has a statistically significant negative impact on service quality in respect of respondents from companies which do not have internal auditors. This may indicate that they use
other types of controls to achieve internal control, they have less need for internal control, or that they have a poor attitude towards internal control in general. If it is the latter, it may indicate a need for an education program about the importance of internal control. Such attitudes among top managers can undermine efforts by boards of directors and audit committees in their attempts to achieve corporate governance.

The attitude factor does not have a significant impact on either quality construct and as such, it is the least important factor in the formation of audit quality perceptions.

These results are consistent with the definitions given for both constructs in chapter two. For example, the factors which have a positive impact on technical quality are comprised of variables which can be used to infer the quality of the auditor's traditional work (reliability and control) and the factors which are comprised of variables unrelated to the auditor's traditional role (service and attitude) have a negative impact or no impact. In contrast, while service quality includes factors which can be used to infer technical quality, it also includes a functional component. Thus, the results support the notion that audit service quality goes beyond technical quality.

The results relating to the relative importance of the four performance attributes also indicate that financial accountants are not overly concerned with the service factor, but that directors are. Financial accountants, instead, are more concerned with the technical competence (reliability) of the auditor. This suggests that audit firms can take a difference approach when dealing with different levels of the client's staff.
7.6 Limitations of the Research

As is the case for most survey method research, a number of limitations need to be recognised. The first concerns the generalisability of the findings, for example, the size of an entity has been shown to have an impact on demand for audit services (O'Keefe and Barefield 1986). While a wide range of different sized companies are included in the sample, they are all listed companies and tend to be large. The perceptions and needs of small and/or private clients may differ from those revealed by the sample used here. A limitation associated with all research involving organisations is that the responses obtained may not be representative of the organisational perspective. Phillip (1981) suggested that to minimise the risk that the responses are not representative of the entity, at least two individuals from the same organisation should be asked to complete the survey so that a comparison of their responses be made. While this was attempted in this research, insufficient responses were received from directors and comparisons are, therefore, not possible. Moreover, more than 70 per cent of the respondents were financial accountants, limiting the generalisability of these results to other types of respondents (eg, directors).

The independent variables related to model 5, technical and service quality, are correlated with each other (.506 Spearman rank correlation). Owing to this multicollinearity problem, the individual effects of the two variables is not necessarily that shown by the results. The conclusions made in respect of these results are, therefore, limited. Thus, technical quality may have a greater impact on behavioural intentions than suggested. It is also recognised that model B, affect of performance attributes on technical quality, contains similar variables on both sides of the
equation. Technical quality is the dependent variable and the independent variables, control and reliability contain elements which are similar to those contained in technical quality biasing the results upward. As part of the sensitive analysis (see footnote 13 chapter 6) the elements relating to the control attribute were removed from the dependent variable (technical quality). This analysis revealed that it made no difference to the results. It is however, not possible to carry out a similar analysis in respect of the realibility attribute.

It needs to be recognised that the nature of the auditor/client relationship is highly confidential and sensitive and consequently it is difficult to elicit responses and if the relationship violates legal and professional standards, respondents have an incentive to conceal it. Finally, the use of factor analysis introduces some degree of subjectivity in the research process and, while every effort is made to minimise the effects, they cannot be eliminated.

7.7 Future Research Directions

Apart from this thesis, the work of Dassen (1995) appears to be the only other significant research study to introduce models developed in the services marketing literature to the auditing literature\(^4\). The integration of the services marketing literature with the auditing literature can improve our understanding of the relationship between managers and auditors; a relationship that has far more social significance than most other client/supplier relationships. This research and Dassen (1995) represent only the beginning of the integration of these literatures. Much

\(^4\) As noted above, Dassen (1995) used a different model of services to that used in this thesis, that is, he used the gap model (see chapter 2) while a model, designed specifically for the audit service is used here.
more can be done to continue this direction in audit quality research. For example, the conceptualisation of service quality can be developed further. As noted in chapter two, debate about its exact definition is ongoing in the marketing literature. In this thesis, the attributes assumed to comprise audit service quality are initially based on the auditing literature. This provided a framework for the development of a more detailed set of variables based on qualitative research and secondary data sources including the SERVQUAL instrument. Nevertheless, further development of this scale is possible. Moreover, additional constructs, such as value and prior attitude, can be introduced from the marketing literature to develop a more comprehensive model of the audit service (Bolton and Drew 1991; Patterson 1993; Sweeney, Soutar and Johnson 1997). A particularly worthwhile extension of this research would be to investigate the nature of managers' attitude towards and its impact on their perceptions of technical and service quality.

Another worthwhile extension of this research would be to investigate whether perceptions of service quality have an impact on audit fees. Behn, Carcello, Hermanson and Hermanson (1995) found evidence that individual Big Six firms can earn differential returns from client satisfaction and that the base audit fees vary across these firms. It is argued in this thesis that service quality is the concept of quality which audit firms of similar size can use to differentiate themselves. Investigating whether or not the level of service quality provided is reflected in returns to the auditor would add to our understanding of audit fees and the nature of the competition in the market for audit services.
More evidence should be collected about the role of the traditional audit quality construct (technical quality) in the relationship between managers and auditors. The findings presented here suggest that it does not have an impact on behavioural intentions. They further suggest that the functional dimension of service quality has a negative impact on it. More can be learned about the attitude of managers towards traditional audit quality and how this attitude might affect actual technical audit quality. Finally, the impact on service and technical quality of additional engagement characteristics such as the financial state of the client and the provision of other service can be investigated.

7.8 Implications

This study provides more evidence about the elusive construct, audit quality, as perceived by the audit client, and provides a better understanding of the complex relationship between auditors and managers. Clearly, the relationship between auditors and their clients goes far beyond the traditional audit function. This is not new to audit firms who have, for sometime, spent considerable resources to "service" clients better. The challenge for the profession is to maintain an acceptable balance between the traditional (legal) role and service quality. The results presented in this study support the suggestion made in chapter two that technical audit is an internal concept of quality. Auditors are motivated to provide adequate levels of technical quality by their legal liability, but the provision of adequate service quality is motivated by the desire to retain the client. The competitive edge for audit firms is in providing good service quality, whereby they ensure they are competent in their
dealings with the financial accountant, and responsive and available when dealing with directors.

Technical quality is relatively easily copied and the credibility attribute (brand name) does not allow auditors to differentiate themselves from firms that are of similar size. Technical audit quality, per se, may be of little value to clients who have strong systems of internal control and internal audit divisions. Thus, the only real benefit to the client, apart from credibility, is service quality. It is an important means by which audit firms can differentiate themselves within the market for audit services.

The findings in this thesis provide a better understanding of the dimensions of audit service quality for both practitioners and researchers. Audit firms are encouraged to ensure they address the reliability and service dimensions of the service they provide to financial accountants and directors respectively. Audit researchers are encouraged to recognise the importance of the concept of service quality and consider it in any relevant analyses of audit quality. Studies of audit switches in particular could include a thorough investigation of the possibility that aspects of service quality motivated the switch. Audit researchers in the field of the economics of auditing are encouraged to note that the audit service is not comprised of the credibility attribute alone. While audit firm credibility is an important attribute of the service, it is becoming increasingly difficult to differentiate audit firms on the basis of credibility.

Standard setters, professional accounting bodies and shareholder interest groups should note the lack of support for the notion that audit quality is affected by engagement factors. Only client size is found to have a significant negative effect on two out of seven traditional audit tasks. Moreover, a qualified audit opinion is found
to have a positive impact on service quality. This result suggests that qualifications will not necessarily lead to a deterioration of the relationship between auditors and managers. All those concerned with studying or monitoring the audit profession should recognise the possibility that auditors possess skills which enable them to maintain a satisfied client while issuing a qualified audit opinion. This is one of the most important skills for auditors to develop; it is the challenge of the profession. This skill alone allows auditors to achieve a balance between the traditional/legal and services marketing roles. On average, the auditors in the sample, who issued a qualified opinion, appear to have mastered this skill. Opposing this view, however, is the finding that qualified opinions are negatively related to perceptions of auditor independence suggesting that the qualification may have been far “softer” than perhaps it should have been. If this is the case, it would also explain why there is a positive relationship between qualifications and service quality. In other words, the auditor’s “recovery” tactics involved issuing a “softer” qualification, and therefore not acting in an independent manner.

Finally, as the descriptive statistics show, not all managers in the sample perceive their auditor to be independent (for example, 22% of respondents believed that the probability that the auditor would report a material misstatement to the shareholders is 50% or less). Moreover, as already noted, managers’ perceptions of the level of technical quality achieved by auditors is quite low (see section 7.1) and the larger the client the lower this perception. These results may indicate that, there is a gap between managers’ perceptions and actual auditor performance and, therefore, that there is a need for auditors to educate managers about the actual level of technical quality achieved. This is important, because the reputation of the profession will
suffer if such perceptions are allowed to grow and expand to the views of users of financial statements. This education process would, initially, involve investigating which factors, apart from auditor performance, affect managers’ perceptions of audit quality (for example, prior attitude towards auditors).
Appendix I

Covering Letter and Survey Instrument - Questionnaire

Dear

A Study of Management Perceptions of External Audit Quality

We ask that you contribute your valuable time to participate in important research on Australian management's perceptions about external auditors. The information collected in this research will assist you, because the research findings have the potential to improve the service provided to your organisation by external auditors. If you wish to receive a free copy of executive summary of the research findings in return for your contribution, please tick the box at the end of the enclosed survey. Any information obtained will be used for data analysis only and will be kept strictly confidential.

This work forms part of a PhD thesis, and has been endorsed by the Institute of Chartered Accountants in Australia (ICAA), and funded by the Australian Research Foundation. The aggregate non-confidential data arising from this survey will be used by the ICAA in their ongoing review of external audit quality. Audit firms also will have access to the conclusions of this research.

We ask that you complete the questionnaire and return it within the next 14 days. It will take approximately 25 minutes to complete.

A brief biographical section is included at the end of the questionnaire. The information is necessary for analysing the data collected in the questionnaire. Again, we make the promise to use information obtained for data analysis only and keep it strictly confidential. Your responses will be aggregated with other responses to form an overall picture.

If you have any queries, don't hesitate to contact Anja Morton on (02) 351 6630 or FAX (02) 351 6638.

Yours sincerely,

Anja Morton
Lecturer in Auditing

Anja Morton
Researcher

Professor Allen Craswell, PhD
Supervisor

Enc.
A STUDY OF MANAGEMENT PERCEPTIONS
OF
EXTERNAL AUDIT QUALITY

How to Complete This Questionnaire

Most questions refer to your opinions about your current external auditor. Please use your current auditor as the reference point for completing this questionnaire.

In most cases you are asked to circle a number which best reflects your opinion. In other cases, you are asked to supply short written answers, write a number or tick a box.

If you have any queries, please telephone Anja Morton on (02) 351 6630
**SECTION 1: Expectations**

Q1 The following sets of statements describe several features of external auditors, in random order. For each statement please indicate the extent to which you think your audit firm should possess the feature described by each statement. For example, if you strongly agree that the audit firm should possess the feature, then circle a seven (7). If you strongly disagree that the firm should possess the feature, then circle a one (1).

<table>
<thead>
<tr>
<th>FEATURE</th>
<th>STRONGLY DISAGREE</th>
<th>STRONGLY AGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. The audit firm should give you personal attention.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>b. The external audit should contribute to the accuracy of your organisation's financial reports.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>c. The audit firm should have a good reputation among users of financial reports.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>d. The engagement manager should have a thorough understanding of your organisation's industry.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>e. As part of the external audit process the audit firm should make use of your organisation's internal audit. (Please leave blank if your organisation does not have internal audit.)</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>f. The audit firm should deliver work by an agreed deadline.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>g. They should provide assistance with the interpretation of accounting standards.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>h. The audit firm should provide a detailed account of the audit fee.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>i. You should be able to have a high level of confidence in the engagement partner.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>FEATURE</td>
<td>STRONGLY DISAGREE</td>
<td>STRONGLY AGREE</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>j. The audit team's attitude should be one of sceptic, not one of management advocate.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>k. Without charging an extra fee they should provide relevant advice as part of the audit process.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>l. The external audit should augment your organisation's system of internal control.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>m. The relevant members of the audit firm should be available when you need them.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>n. The audit team members should be trustworthy.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>o. They should identify weaknesses in your organisation's system of internal control.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>p. The audit team should have a co-operative relationship with your organisation's employees.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>q. The audit firm should be responsive your organisation's needs.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>r. The audit firm should have a reputation among users of financial reports as a specialist auditor in your organisation's industry.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>s. They should provide advice about corporate finance.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>t. The audit firm should provide value-for-money.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>u. The engagement partner should have a thorough understanding of your organisation's industry.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>v. The audit firm should make good use of their international contacts to service your needs.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>w. The audit firm's work should be technically accurate.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>FEATURE</td>
<td>STRONGLY DISAGREE</td>
<td>STRONGLY AGREE</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>x. The audit team should be independent.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>y. The audit firm should have other clients in your organisation's industry.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>z. The engagement partner should make frequent visits to the audit site.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>aa. Employees of the audit firm should be pleasant and polite.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>bb. They should promptly communicate all significant audit findings.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>cc. The audit firm should provide staff continuity.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>dd. The auditors should act as a deterrent against fraud by your organisation's employees.</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
</tbody>
</table>
Q2  The following set of statements relate to various aspects of your organisation's external audit firm's performance. For each statement:

IN THE LEFT HAND COLUMN

- Please indicate the extent to which you believe your organisation's audit firm has the feature described by that statement. For example, circling a seven (7) means that you strongly AGREE that your organisation's external auditors have that feature and circling a one (1) means that you strongly DISAGREE.

IN THE RIGHT HAND COLUMN

- Please indicate how close your organisation's audit firm's performance on each feature described comes to the level of performance you expect from them. For example, if their performance far exceeds your expectations then circle a seven (7). If their performance is much worse than you expect, then circle a one (1).

<table>
<thead>
<tr>
<th>Opinion of Performance:</th>
<th>Comparison of performance to expectations:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PERFORMANCE ON THIS FEATURE IS:</td>
</tr>
<tr>
<td></td>
<td>MUCH WORSE THAN EXPECTED</td>
</tr>
<tr>
<td></td>
<td>ABOUT THE SAME THAN EXPECTED</td>
</tr>
<tr>
<td></td>
<td>MUCH BETTER THAN EXPECTED</td>
</tr>
<tr>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>a. The audit firm's work is technically accurate.</td>
<td></td>
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<tr>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>b. Their employees are pleasant and polite.</td>
<td></td>
</tr>
<tr>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>c. The external audit augments your organisation's system of internal control.</td>
<td></td>
</tr>
<tr>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>d. The audit team's attitude is one of sceptic, not one of a management advocate.</td>
<td></td>
</tr>
<tr>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>e. The audit firm provides a sufficient level of staff continuity.</td>
<td></td>
</tr>
<tr>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>STRONGLY DISAGREE</td>
<td>STRONGLY AGREE</td>
</tr>
<tr>
<td>------------------</td>
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<td></td>
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<td>1 2 3 4 5 6 7</td>
<td></td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------</td>
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<tr>
<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
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<td>1 2 3 4 5 6 7</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>
SECTION 3: Technical and Overall Service Quality

Q3 In this question I would like you to indicate your opinion about certain aspects of the technical quality of the service you receive from your external auditor.

(a) Please indicate what you believe are the chances in ten (10) that your external auditor would detect material fraud, if it existed in your organisation.
(Please circle one number)

<table>
<thead>
<tr>
<th>No chance</th>
<th>0 1 2 3 4 5 6 7 8 9 10</th>
<th>Certain</th>
</tr>
</thead>
</table>

(b) Please indicate what you believe are the chances in ten (10) that your external auditor would detect material illegal acts, if any existed in your organisation.
(Please circle one number)

<table>
<thead>
<tr>
<th>No chance</th>
<th>0 1 2 3 4 5 6 7 8 9 10</th>
<th>Certain</th>
</tr>
</thead>
</table>

(c) Please indicate what you believe are the chances in ten (10) that your external auditor would detect material mistakes other than judgement errors, if any existed in your organisation's financial reports.
(Please circle one number)

<table>
<thead>
<tr>
<th>No chance</th>
<th>0 1 2 3 4 5 6 7 8 9 10</th>
<th>Certain</th>
</tr>
</thead>
</table>

(d) Please indicate what you believe are the chances in ten (10) that your external auditor would detect material accounting judgement errors, if any existed in your organisation's financial reports.
(Please circle one number)

<table>
<thead>
<tr>
<th>No chance</th>
<th>0 1 2 3 4 5 6 7 8 9 10</th>
<th>Certain</th>
</tr>
</thead>
</table>

(e) Please indicate what you believe are the chances in ten (10) that your external auditor would detect income smoothing, if it existed in your organisation's financial reports.
(Please circle one number)

<table>
<thead>
<tr>
<th>No chance</th>
<th>0 1 2 3 4 5 6 7 8 9 10</th>
<th>Certain</th>
</tr>
</thead>
</table>
(f) Please indicate what you believe are the chances in ten (10) that your external auditor would detect material internal control deficiencies, if any existed in your organisation's system. (Please circle one number)

<table>
<thead>
<tr>
<th>No chance</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Certain</th>
</tr>
</thead>
</table>

(g) Please indicate what you believe are the chances in ten (10) that your external auditor would provide timely detection of potential going concern problems, if any existed in your organisation. (Please circle one number)

<table>
<thead>
<tr>
<th>No chance</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Certain</th>
</tr>
</thead>
</table>

Q4 Please indicate what you believe are the chances in ten (10) that your auditors would issue a qualified audit report, in situations in which an unresolved disagreement existed between them and your organisation about a material item. (Please circle one number)

<table>
<thead>
<tr>
<th>No chance</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Certain</th>
</tr>
</thead>
</table>

Q5 Please indicate what you believe are the chances in ten (10) that your auditors would bring to the attention of the audit committee material disagreements between them and your organisation's management. If your organisation does not have an audit committee, please replace audit committee with the board of directors. (Please circle one number)

<table>
<thead>
<tr>
<th>No chance</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>Certain</th>
</tr>
</thead>
</table>

Q6 How do you rate the overall quality of the audit services provided by your external auditor? (Please circle one number and provide a brief reason for your response)

<table>
<thead>
<tr>
<th>Poor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Excellent</th>
</tr>
</thead>
</table>

Please provide a brief reason for your response Q6.

Write here: ..................................................................................................................
..................................................................................................................
..................................................................................................................
..................................................................................................................

SECTION 4: Duration of the Audit Firm's Appointment

Q7 For how many years has your current audit firm held the appointment? If your auditor merged with another audit firm and continued to act for you, please treat it as a continuous appointment.
(Please tick the box corresponding to your answer)

☐ Less than one full year
☐ One
☐ Two
☐ Three
☐ Four
☐ Five or more

Q8 For how many years has your current audit engagement partner been responsible for signing your organisation's audit report?
(Please tick the box corresponding to your answer)

☐ Less than one full year
☐ One
☐ Two
☐ Three
☐ Four
☐ Five or more
SECTION 5: Intentions

Q9 Please indicate the chances in ten (10) that at the next review of your external audit firm's appointment you would recommend they be retained? (Please circle one number and answer provide a brief reason for your response.)

| No chance | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Certain |

Please provide a brief reason for your response to Q9.

Write here: ..................................................................................................
..............................................................................................................
..............................................................................................................
..............................................................................................................
..............................................................................................................
..............................................................................................................
..............................................................................................................
..............................................................................................................
..............................................................................................................

Q10 Please indicate what are the chances in ten that you would recommend that your organisation purchase "other services" from other divisions of your audit firm, if your organisation needed such services? (By "other services" we mean, for example, tax, corporate advisory services, human resources etc) (Please circle one number.)

| No chance | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Certain |

Q11 What are the chances in ten (10) that you would you recommend this audit firm to a colleague in another organisation? (Please circle one number)

| No chance | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Certain |
SECTION 6: Background Details

Q12 Concerning your feelings about the level of quality received from your external audit firm, how representative are these generally of the views of other members of your organisation who are in significant contact with the audit. 
If you are not aware of the views of others, leave this question blank, otherwise, please circle one number.

<table>
<thead>
<tr>
<th>Not very Representative</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Very Representative</th>
</tr>
</thead>
</table>

Q13 Overall how would you rate your ability to evaluate external auditors? 
(Please circle one number)

<table>
<thead>
<tr>
<th>Very poor</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Extremely good</th>
</tr>
</thead>
</table>

Q14 Please indicate here the approximate size of your organisation's internal audit team in terms of the total number of staff employed and the total annual salary expense incurred in respect of employees in the internal audit division?

Write total number of internal audit staff here.................................................................

Write dollar amount of total annual salary for internal audit here...........................................

OR tick this box □ if your organisation does not have an internal audit division.

Q15 Are you currently a member of your organisation's audit committee? 
(Please tick the box corresponding to your answer)

□ Yes

□ No

□ Not applicable, this organisation does not have an audit committee.
Personal Details

Your Name: .................................................................

Your Title: .....................................................................

Your Qualifications: ......................................................

Number of years you have held this position: ..................

Name of organisation: ...................................................

Phone No: .................................................................

Date: ...........................................................................

☐ Tick this box if you would like an executive summary of the research findings resulting from this survey.

Please check that you have answered all of the relevant questions and place the questionnaire in the postage-paid envelope provided. The completed questionnaire should be returned to:

Anja Morton
Department of Accounting HO4
University of Sydney NSW 2006

Alternatively, you could FAX the completed questionnaire on 02 351 6638.

Thank you very much for your co-operation.
Anja Morton
### Appendix II - Descriptive Statistics, Expectations, Performance and Disconfirmation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Expectations</th>
<th>Performance</th>
<th>Disconfirmation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Standard Deviation</td>
<td>Mean</td>
</tr>
<tr>
<td>Meets agreed deadline</td>
<td>6.69</td>
<td>0.51</td>
<td>5.66</td>
</tr>
<tr>
<td>Audit team is trustworthy</td>
<td>6.69</td>
<td>0.60</td>
<td>6.25</td>
</tr>
<tr>
<td>Work is technically accurate</td>
<td>6.64</td>
<td>0.63</td>
<td>6.01</td>
</tr>
<tr>
<td>Have confidence in partner</td>
<td>6.61</td>
<td>0.73</td>
<td>5.80</td>
</tr>
<tr>
<td>Audit team is independent</td>
<td>6.61</td>
<td>0.76</td>
<td>5.91</td>
</tr>
<tr>
<td>Promptly communicate findings</td>
<td>6.53</td>
<td>0.73</td>
<td>5.55</td>
</tr>
<tr>
<td>Provide value for money</td>
<td>6.44</td>
<td>0.91</td>
<td>4.85</td>
</tr>
<tr>
<td>Assist interpretation of accounting standards</td>
<td>6.34</td>
<td>0.87</td>
<td>5.79</td>
</tr>
<tr>
<td>Have a high reputation</td>
<td>6.29</td>
<td>0.97</td>
<td>5.72</td>
</tr>
<tr>
<td>Identify internal control weaknesses</td>
<td>6.24</td>
<td>1.10</td>
<td>4.95</td>
</tr>
<tr>
<td>Have a co-operative attitude</td>
<td>6.18</td>
<td>1.03</td>
<td>5.88</td>
</tr>
<tr>
<td>Give personal attention</td>
<td>6.15</td>
<td>1.05</td>
<td>5.45</td>
</tr>
<tr>
<td>Provide detailed specification of audit fees</td>
<td>6.14</td>
<td>1.18</td>
<td>4.87</td>
</tr>
<tr>
<td>Are responsive to needs</td>
<td>6.10</td>
<td>0.97</td>
<td>5.57</td>
</tr>
<tr>
<td>Manager has thorough knowledge of industry</td>
<td>6.01</td>
<td>1.14</td>
<td>5.27</td>
</tr>
<tr>
<td>Make sufficient use of internal audit</td>
<td>5.90</td>
<td>1.13</td>
<td>5.46</td>
</tr>
<tr>
<td>Contribute to the accuracy of accounts</td>
<td>5.88</td>
<td>1.24</td>
<td>5.69</td>
</tr>
<tr>
<td>Are pleasant and polite</td>
<td>5.84</td>
<td>1.14</td>
<td>6.02</td>
</tr>
<tr>
<td>Provide staff continuity</td>
<td>5.84</td>
<td>1.11</td>
<td>5.22</td>
</tr>
<tr>
<td>Partner has thorough industry knowledge</td>
<td>5.71</td>
<td>1.33</td>
<td>5.47</td>
</tr>
<tr>
<td>Provides advice as part of the audit fee</td>
<td>5.71</td>
<td>1.28</td>
<td>4.66</td>
</tr>
<tr>
<td>Are available when needed</td>
<td>5.45</td>
<td>1.16</td>
<td>5.45</td>
</tr>
<tr>
<td>Augment internal control</td>
<td>5.37</td>
<td>1.53</td>
<td>4.98</td>
</tr>
<tr>
<td>Has international contacts</td>
<td>5.29</td>
<td>1.48</td>
<td>4.84</td>
</tr>
<tr>
<td>Act as deterrent against fraud</td>
<td>5.15</td>
<td>1.60</td>
<td>4.38</td>
</tr>
<tr>
<td>Partner makes sufficient audit site visits</td>
<td>4.98</td>
<td>1.27</td>
<td>5.25</td>
</tr>
<tr>
<td>Has sceptical attitude</td>
<td>4.96</td>
<td>1.54</td>
<td>4.58</td>
</tr>
<tr>
<td>Provide quality financial advice</td>
<td>3.65</td>
<td>1.69</td>
<td>3.53</td>
</tr>
<tr>
<td>Mean</td>
<td>5.78</td>
<td>0.51</td>
<td>5.33</td>
</tr>
</tbody>
</table>
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