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**ROLE STRESS, THE TYPE A BEHAVIOUR PATTERN,
AND EXTERNAL AUDITOR JOB SATISFACTION AND PERFORMANCE**

**A thesis
submitted in partial fulfilment
of the requirements for the Degree
of
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**by
R. T. Fisher**

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**Abstract of a thesis submitted in partial fulfilment of the
requirements for the Degree of M.C.M.**

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by R.T. Fisher

There are many potential catalysts to job-related stress in the external auditor's environment. The two principal elements of role stress, role conflict and role ambiguity, represent two sources of stress to which auditors appear to be particularly exposed. The study reported in this thesis sought to validate, in a New Zealand setting, the results of prior studies that have examined the relationship between these two elements of role stress and two important auditor job outcome variables: job performance and job satisfaction. Further, the study extended prior research by examining the moderating influence of the Type A behaviour pattern on these relationships. The need to re-examine the linkages between the elements of role stress and both job satisfaction and job performance using theoretically-based moderators, such as the Type A behaviour pattern, has been highlighted in the role stress literature.

Data for the study was obtained by surveying auditors from three offices in each of two "Big-Six" accounting firms in New Zealand. In total, 119 usable responses were received, representing an effective response rate of 70%.

Analysis of the survey data confirmed that both role conflict and role ambiguity are significantly negatively associated with auditor job performance and job satisfaction. However, the expected moderating role of the Type A behaviour pattern on the relationships between the components of role stress and job satisfaction and auditor job performance was not found. Interestingly, however, a direct positive relationship between the Type A behaviour pattern and both job outcome variables was apparent. The latter result suggests that, among audit professionals, Type A individuals tend to outperform and be more satisfied with their employment than Type Bs.

Key words: auditors; role stress; role conflict; role ambiguity; Type A behaviour pattern; job satisfaction; performance; New Zealand

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Chapter 1

Introduction

1.1 Background

Job-related stress has frequently been associated with the auditing profession [Kelly and Margheim, 1990; Rebele and Michaels, 1990; Choo 1986, 83a, 83b, 82; Weick, 1983; Gaertner and Ruhe, 1981; Friedman and Rosenman, 1974]. Choo [1982, p. 633], for instance, argues that auditors and accountants are constantly exposed to a barrage of potential catalysts of stress:

Time pressure, budget constraints, unscheduled meetings, reporting deadlines, long hours, heavy workload, boring repetition, lack of autonomy, occasional necessity to make judgements on inadequate information and concern about career development are some of the ubiquitous sources of occupational stress relating to the accounting profession.

Job-related stress has been linked to negative psychological, physical, and behavioural consequences. Examples of such adverse outcomes include cardiovascular disease, anxiety, depression, fatigue, inability to make decisions, lower performance and productivity, higher absenteeism and turnover, and alcohol abuse [Choo, 1983b; Weick, 1983; Ivancevich and Matteson, 1980; Friedman and Rosenman, 1974].

One source of stress regularly encountered by most individuals is role stress. Role stress consists of two important constructs, namely, role ambiguity and role conflict [Kahn et al. 1964]. Role ambiguity arises in the work environment when an employee lacks adequate information for effective performance of a given role [Senatra, 1980]. Alternatively, role conflict exists when an employee faces incompatible expectations such that compliance with one expectation would make it difficult or impossible to effectively comply with the other expectations [Kahn et al., 1964]. Rebele and Michaels [1990] suggest that the external auditing profession is particularly exposed to both elements of role stress as a consequence "... of (1) its boundary-spanning nature, (2) the potential for conflicting expectations from clients and the firm, and (3) the complexity of modern-day audits and the derivative consequences of poor role performance" [p. 127]. Also referring to public accounting firms, Senatra [1980, p. 594] suggests that:

The potential effects of conflict and ambiguity are costly, not only to the individual in terms of emotional consequences such as high job-related tension and low job satisfaction, but also to the organization in terms of lower quality of performance and higher turnover.

The possibility of role stress being associated with poor performance and job dissatisfaction should be of significant concern to the auditing profession. Lower levels of audit performance can lead to inefficient and ineffective audits which, in turn, unnecessarily expose audit firms to legal liability, loss of revenue, and diminished credibility. The Commission on Auditor's Responsibilities [AICPA, 1978] has suggested that any factor having the potential to impair auditor performance warrants further research. Job dissatisfaction has been identified in the auditing literature as one of the most significant influences on the formation of an intention to leave current employment [Bullen and Flamholtz, 1985; Kemery et al., 1985; Kemery et al., 1987; Snead and Harrell, 1989]. Staff turnover within public accounting firms has been and continues to be a significant and costly problem for the

accounting profession [Aranya et al., 1982; Bullen and Flamholtz, 1985; Rhode et al., 1977; Senatra, 1980; Snead and Harrell, 1989; Sorenson and Sorenson, 1974].

Notwithstanding the significance of role stress in the external audit setting, relatively few studies have investigated the direct consequences of role stress in this environment. The earliest of these studies was undertaken by Sorenson and Sorenson [1974]. These researchers found that role conflict had an adverse impact on auditors' job satisfaction. In this study, role conflict was operationalised in terms of conflict between an auditor's professional and bureaucratic orientations¹. Somewhat later, Senatra [1980] found that increased role conflict led to greater job-related tension, while increased role ambiguity led to increased job dissatisfaction. Lastly, a study by Rebele and Michaels [1990] confirmed that both role conflict and ambiguity were negatively related to job satisfaction. Like Senatra [1980], the researchers also found role conflict to be positively associated with job-related tension. Rebele and Michaels were the first researchers to also consider the consequences of role stress on auditor performance. While they found that role ambiguity adversely affected job performance, no association was found between role conflict and self-rated job performance.

The study reported in this thesis re-examines the linkages between the two elements of role stress and certain external auditor job outcome variables (job performance and satisfaction), and advances prior research by examining the moderating influence of the Type A behaviour pattern on the relationships between these variables. The Type A behaviour pattern has been described as "... an overt behavioral style of living that is neither a personality trait nor a standard reaction to challenge, but rather is the reaction of a characterologically predisposed person to a situation which is perceived as a threat or a challenge" [Rosenman, 1986, p. 23]. For example, a Type A individual might exhibit characteristic Type A behaviour, such as extreme levels of competitiveness, drive, ambition, anger, hostility, irritability, impatience, and time-urgency, when exposed to an

¹

Professional and bureaucratic orientations refer to the degree to which an individual associates with professional and organisational norms, respectively [Organ and Greene, 1981].

environmental stressor. People who do not respond with this behaviour pattern in the face of threatening or challenging situations are referred to as Type Bs.

1.2 Aims of the Research

The two objectives of this study are as follows:

- 1) To validate, in a New Zealand setting, the results of prior studies that have examined the linkages between perceived role stress and both external auditor job performance and overall job satisfaction. The studies that have previously investigated the consequences of role stress in the external audit environment have all been conducted in the United States. By replicating aspects of these studies in a New Zealand context, the present study seeks to widen the generalisability of prior research findings.
- 2) To extend the results of previous research by considering whether these relationships are moderated by the Type A behaviour pattern.

The adverse consequences of role stress have been examined in numerous studies in a variety of work settings. However, the results of a recent meta-analysis of this literature has highlighted the need for further research [Jackson and Schuler, 1985]. In particular, Jackson and Schuler argue that the relationships between the elements of role stress and both overall job satisfaction and self-rated job performance are most likely influenced by moderator variables. Consequently, the researchers recommend that future role stress studies consider the influence of theoretically-based moderators on these relationships.

Individual-level factors have long been believed to moderate the relationship between antecedents to stress and stress consequences [Ivancevich and Matteson, 1980; Kahn et al., 1964]. One such individual-level factor is the Type A behaviour pattern (TABP). This study investigates the moderating influence of the TABP on the relationships between the components of role stress and both auditor performance and overall job satisfaction. It is argued that, relative to Type B auditors, Type As will perform less effectively and be less satisfied with their jobs in the face of a salient and largely uncontrollable stressor, such as role stress. Although the moderating influence of the TABP on the relationship between role stress and job satisfaction has been investigated in two prior studies [Ivancevich et al., 1982; Keenan and McBain, 1979], no previous study in the psychology, organisation theory, or accounting literatures appears to have investigated the effect of this variable on the role stress/job performance relationship.

1.3 Implications for Audit Firms

Should the results of the study confirm that role conflict and role ambiguity contribute to lower audit performance and overall job satisfaction, audit firms would be justified in taking steps to address role stress in the auditor's work setting. For example, strategies could be implemented that reduce or eliminate sources of role stress. Alternatively, firms may wish to consider the provision of individual-focussed stress intervention plans [Goolsby, 1992]. Further, should the TABP have the hypothesised effects, audit firms may need to reassess aspects of their personnel policies.

1.4 Structure of the Thesis

The remainder of this thesis is structured as follows.

Chapter 2 provides an overview of the role stress literature. The chapter starts with a discussion of stress as a generic concept, and is followed by a discussion of the theoretical underpinnings of role stress. Next, research concerned with the known antecedents and consequences of role stress will be reviewed. This is followed by a review of the literature linking role stress to the external auditing profession. Lastly, various methods of managing role stress are considered.

Chapter 3 describes the two dependent variables of interest to the current study, overall job satisfaction and auditor job performance. This discussion is followed by a review of the literature associating role stress with each these variables.

Chapter 4 is dedicated to the moderator variable of interest to the present study - the TABP. The chapter starts with a discussion of the development of the TABP construct, followed by a review of the various behaviours that characterise the Type A individual. Next, the occupational and physiological consequences of the behaviour pattern are outlined. Following this, the theoretical linkage between the TABP and occupational stress is conceptualised. The chapter concludes with a brief review of the literature dealing with modification of the TABP.

Chapter 5 presents the study's research model. This is followed by the formal derivation and delineation of the study's research hypotheses.

Chapter 6 outlines the research method employed in the study. Details of the study's sample and procedure, research measures, and data analysis techniques are provided.

Chapter 7 presents the descriptive statistics pertaining to the sample data and the results of hypothesis testing. This is followed by a discussion of the study’s results.

Chapter 8 summarises the major findings of the study and their implications. The limitations of the study and opportunities for future research are also outlined in this chapter.

There are three appendices to the thesis. Appendix A contains the covering letter sent with the original survey instrument to the subjects of the study, while Appendix B contains the variable measures that were included in the survey instrument. Lastly, Appendix C includes a table which indicates the item weightings used in conjunction with the measure of auditor job performance.

Chapter 2

Role Stress: An Overview

2.1 Introduction

The effect of occupational stress on the accounting profession has received increasing attention in the literature in recent times [Choo, 1982, 83a, 83b, 86; Gaertner and Ruhe, 1981; Kelly and Margheim, 1990; Weick, 1983]. Stress is such an integral component of the accountant's environment that some researchers claim that "... the stress concept may provide a useful structure for analyzing a wide variety of accounting issues" [Libby, 1983, pp. 373 - 374].

One form of stress to which accountants are particularly susceptible is role stress [Choo, 1982, 83a, 83b; Rebele and Michaels, 1990; Senatra, 1980, 88]. Role conflict and role ambiguity are the two principal elements of role stress [Kahn et al., 1964] and are the two independent variables of interest in the current study. Role conflict may occur when "individuals are confronted ... with situations in which they may be required to play a role which conflicts with their value systems or to play two or more roles which conflict with each other" [Van Sell et al., 1981, p. 44]. Alternatively, role ambiguity may occur when "... the single or multiple roles which confront the individual may not be clearly articulated in terms of behaviors or performance levels expected" [Van Sell et al., 1981, p. 44].

The objective of this chapter is to review the extant literature concerning role stress, particularly as it relates to auditors. The chapter begins by overviewing stress as a generic concept. This is followed by a discussion of the theoretical underpinnings of role stress. Next, the salient correlates of role stress are reviewed, followed by a general review of empirical studies linking the concept of role stress to the auditing profession. Methods of managing role stress are examined in the subsequent section, while the last section provides a summary and conclusion.

2.2 Stress

2.2.1 Definition

It was estimated in 1981 that the annual cost of stress-induced losses in efficiency and effectiveness in the United States was almost US\$150 billion [Gaertner and Ruhe, 1981]. Notwithstanding the apparent significance of stress in contemporary society, many regard it as one of the most imprecisely defined concepts in the scientific dictionary [Ivancevich and Matteson, 1980].

The term *stress* is derived from the Latin word *stringere* - meaning to draw tight. Ivancevich and Matteson [1980] (hereafter I & M) trace the modern usage of the concept, as it relates to humans, to the late 19th century work of a French physiologist, Claude Bernard. He noted that organisms frequently attempt to restore the internal milieu after being disrupted (or *stressed*) by changes in the external environment - a process that was later to be termed *homoeostasis*. More recently, Selye [1950] defined stress as “... an internal condition of the organism that results in response to evocative agents” [I & M, 1980, p. 5]. Selye’s work appeared to spark an avalanche of research into the relationship between stress and human beings resulting in numerous definitions of stress making their

way into the literature. I & M [1980] have classified these definitions into three main categories:

1. Stimulus definitions, i.e., *stress* is the force acting upon the individual that results in a response of *strain*;
2. Response definitions, i.e., *stress* is the physiological or psychological response an individual makes to an environmental *stressor*; and
3. Stimulus-response definitions, i.e., *stress* is the consequence of the interaction between an environmental stimulus and the idiosyncratic response of the individual.

I & M criticise the first category of definitions because, firstly, it ignores the role of the individual in determining a stress response; and secondly, it implies that situations are stress-free when there is an absence of external stimuli. In reality, undemanding situations may well be stressful to some individuals. The researchers also criticise the second category for ignoring the effects of individual differences in the determination of stress responses. The latter criticism does not, however, carry over to the slightly more complex definitions included in the last category. These definitions recognise that potentially stressful stimuli will not evoke the same response in all people, i.e., 'what is one man's meat is another's poison'.

Based on their analysis of definitions in all three categories, I & M [1980, p. 9] developed a useful working definition of stress:

... (stress is) an adaptive response, mediated by individual characteristics and/or psychological processes that is a consequence of any external action, situation or event that places special physical and/or psychological demands upon a person.

This definition suggests that stress producing agents (stressors) are omnipresent, each having the ability to cause a response in the individual. Further, these responses will be dependent upon individual cognitive, affective, demographic, and/or behavioural differences between individuals.

2.2.2 *Consequences of Stress*

The most basic and direct response to stress within the individual is of a physiological nature and includes such reactions as increased heart rate, tensing of muscles, production of glucose, and the release of adrenaline. Each of these physiological reactions is an example of a conditioned response designed to assist humans in coping with stressors. Such responses were ideal for our cave-dwelling ancestors who could employ them to either fight the stressor or avoid the stressor. Unfortunately, in contemporary society, individuals are frequently unable to fight or flee from the everyday stressors that confront them, and, as a consequence, their bodies are forced to endure inappropriate stress coping responses engendered by these stressors.

Viewed from an organisational standpoint, stress responses are clearly not limited to basic physiological reactions. As illustrated by the following taxonomy of stress consequences [Cox, 1978], the effects of stress are wide-ranging:

1. Subjective Effects: Anxiety, aggression, apathy, depression, tension, nervousness, frustration, fatigue, bad temper and irritability;
2. Behavioural Effects: Accident proneness, drug use, emotional outbursts, excitability, excessive eating or loss of appetite, drinking, smoking, impaired speech, nervous laughter;

3. Cognitive Effects: Inability to make decisions and concentrate, frequent forgetfulness, hypersensitivity to criticism, mental blocks;
4. Physiological Effects: Increased blood and urine catecholamines and corticosteroids, increased blood glucose levels, high cholesterol levels, increased heart rate and blood pressure, sweating, dilation of pupils;
5. Organisational Effects: Absenteeism, poor productivity, high accident and turnover rates, poor organisational climate, job dissatisfaction;
6. Health-Related Effects: asthma, coronary heart disease, diarrhoea, headaches and migraines, insomnia, diabetes mellitus.

Consistent with Cox's [1978] analysis, Weick [1983] has outlined behaviours indicative of stress in work situations such as those in which accountants work: (1) working late more than usual; (2) increases in the number of careless mistakes; (3) missing deadlines or forgetting appointments; (4) focusing on mistakes or personal failures; (5) disregard of high-priority tasks; (6) reduced amount of time given each task; (7) changing boundaries to shift or avoid responsibility; (8) blocking out new information; (9) superficial involvement or appearance of giving up; (10) negative or cynical attitude toward customers/clients; (11) going by the book; (12) excessive preciseness and intellectualising; (13) inappropriate humour; and (14) absenteeism.

The effects of stress need not always be bad. Several authors claim that moderate amounts of stress provide the motivation for optimal levels of performance [Anderson, 1976; McGrath, 1976]. However, stress "... becomes maladaptive when it is elicited too frequently, sustained for too long,

followed by recovery that is too slow ..." [Weick, 1983, p. 352].

2.2.3 Sources of Stress

A stressor is defined by Antonovsky [1979] as "... a demand made by the internal or external environment of an organism that upsets its homeostasis, restoration of which depends on a non-automatic and not readily available energy-expending action" [p.72]. Under this definition virtually anything can be classed as a stressor. Clearly, though, some sources of stress will be more common than others. Based on this fact, several writers have attempted to categorise sources of stress for different types of individual [Antonovsky, 1979; Cooper and Marshall, 1978; I & M, 1980]. For instance, Cooper and Marshall [1978] identified the following classes of stressors for managers and white collar workers: (1) factors intrinsic to the job (e.g., poor working conditions), (2) role in the organisation (e.g., role conflict and ambiguity), (3) relationships at work (e.g., poor relations with colleagues), (4) career development (e.g., over-promotion), and (5) extra-organisational sources of stress (e.g., company vs. family demands).

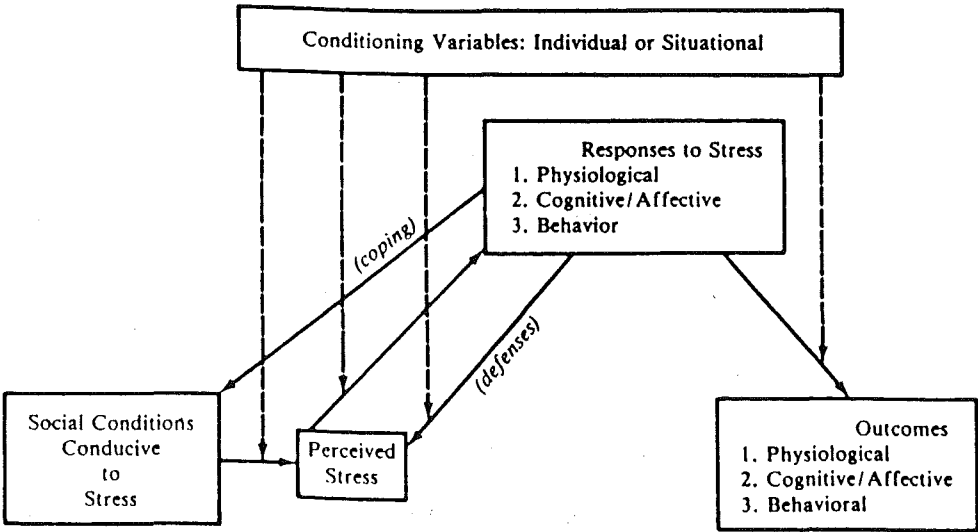
2.2.4 A Paradigm for Stress Research

Much of the stress literature leading up to the early 1970s was, as House [1974] contends, "... fragmentary, scattered, and theoretically unintegrated ... [due to the] nebulous status of stress as a concept or theoretical framework" [p. 12]. With this in mind, House attempted to synthesise the work of leading stress researchers into a single integrated paradigm that would be useful for stress research.

Based on a review of previous literature, House [1974] identified five classes of variables necessary

for a comprehensive model: (1) objective social conditions conducive to stress (i.e., stressors); (2) individual perceptions of stress; (3) individual responses (physiological, affective, and behavioural) to perceived stress; (4) more enduring outcomes of perceived stress and responses thereto; and (5) individual and situational conditioning variables that specify the relationships among the first four sets of factors. House's model, presented in Figure 2.1, suggests that personal characteristics, such as needs, abilities, and values, interact with an individual's perception of their objective environment, to elicit some form of subjective response. According to the model, stress is most likely to occur in situations "... where the demands made exceed existing abilities or where clear obstacles exist to fulfilling strong needs or values" [House, 1974, p. 13]. The arrow, in Figure 2.1, denoted "coping", represents an attempt to eliminate or reduce stress by changing the objective environment in some way. For example, an individual may cope with high work loads by reorganising his/her work schedule or by gaining new skills, etc. The arrow denoted "defenses" represents an attempt to alter an individual's perception of his/her environment, e.g., through denial.

FIGURE 2.1
HOUSE'S [1974] PARADIGM OF STRESS RESEARCH



(Source: House [1974, p. 13])

House's model differed from previous stress models in two important ways. Firstly, House's model

integrated physiological, social, and psychological aspects of the stress concept; and secondly, his model emphasised the importance of individual differences in the determination of stress responses, i.e., responses to stress result from an individual's subjective perception of objective environmental stressors.

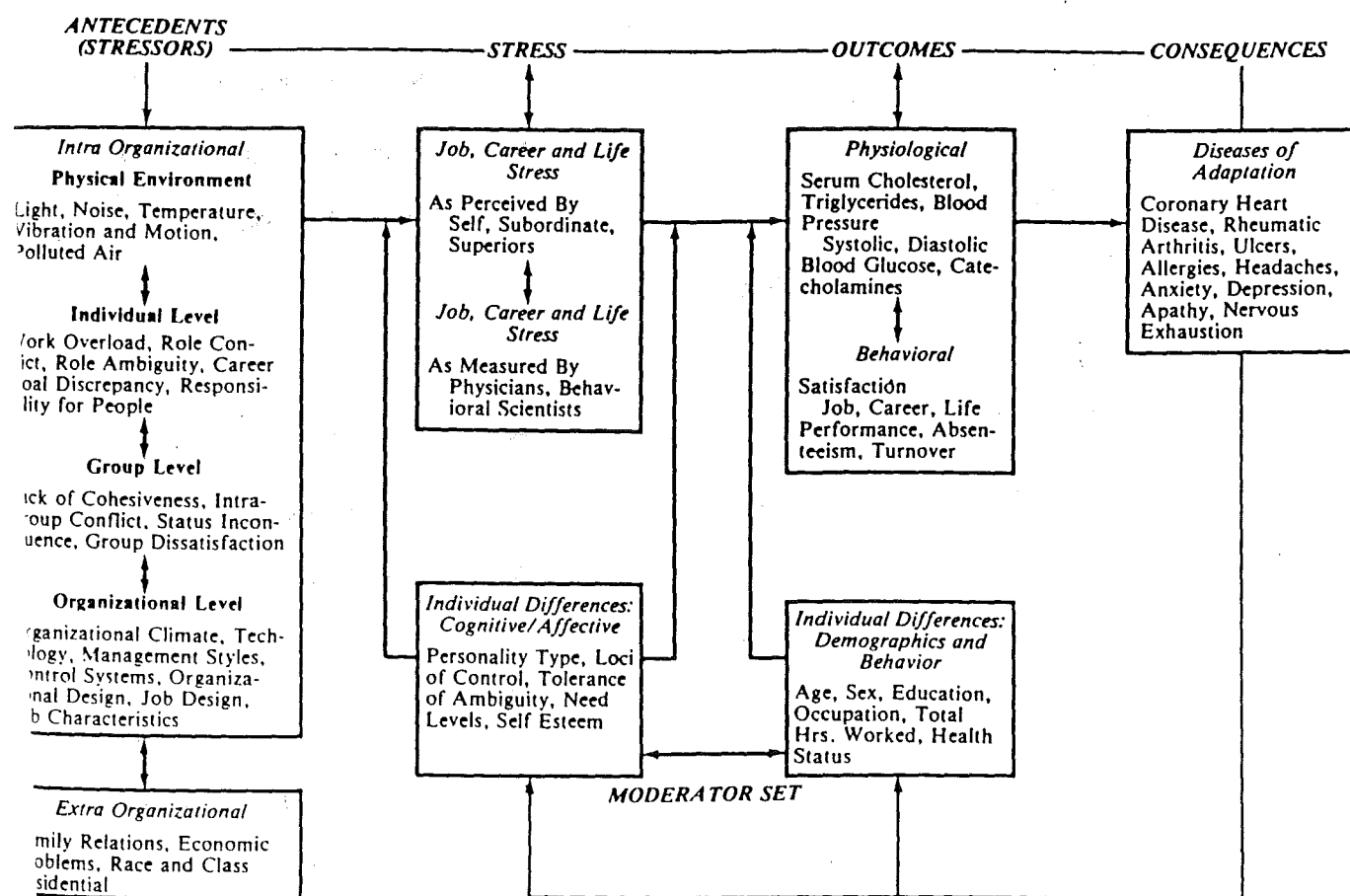
The 'person-environment fit' (P-E fit) formulation of stress used by Caplan et al. [1975], Van Harrison [1978], and others has also proven to be a popular research model. This model posits that work-related stress results from a misfit between aspects of an individual's personality and aspects of his/her working environment. For instance, a misfit between a person's skills and abilities, and the demands and requirements of a person's job could give rise to stress under the P-E fit model. Alternatively, the extent to which the job environment meets the needs of an individual may also determine whether a stressful situation will eventuate. Although the model is widely used, there are some who suggest that it is a simple reformulation of House's [1974] model, and that it "... does not introduce a new and distinct conceptual entity" [McMichael, 1978, p. 144]. For this reason, the P-E fit model will not be discussed further.

I & M [1980] provide one of the more recent attempts at developing an integrative model for organisational stress research. As can be seen from Figure 2.2, I & M's model is, in many respects, similar to the model developed earlier by House [1974]. The main difference appears to be the use of detailed classifications within each of the model's components. The researchers argue that these classifications represent "... intuitively and/or empirically attractive divisions" [p.42], and will therefore facilitate organisational research. For example, physiological and behavioural stress outcomes are distinguished on the grounds that the linkage between physiological outcomes and stress-related disease is relatively well established in the literature, whereas the relationships between (a) behavioural and physiological outcomes, and (b) behavioural outcomes and various health criteria are less clear. Similarly, extraorganisational stressors are separated from intraorganisational stressors in order to emphasise that factors external to the organisation can have an impact on job-related

stress. The non-exhaustive list of example variables provided within each classification is a further feature of I & M's model. For instance, the model indicates that work overload, role stress, career goal discrepancy, and responsibility for people are all examples of intraorganisational variables that have emerged from theoretical or empirical bases as stressors operating at the level of the individual.

FIGURE 2.2

IVANCEVICH & MATTESON'S MODEL FOR ORGANISATIONAL STRESS RESEARCH



(Source: Ivancevich and Matteson [1980, p. 44])

The objective of this section has been to provide an overview of stress as a generic concept, or, more

precisely, as a generic paradigm¹. The following section will overview the independent variables employed in this study: role conflict and role ambiguity. As is evident from Figure 2.2, role conflict and role ambiguity are regarded by I & M [1980] as specific intraorganisational sources of stress that act at the level of the individual.

2.3 Role Stress: Background and Theory

The theory embodying the concept of role stress was initially formulated during the 1950s and 1960s². Since this time, role theory has spawned a significant body of research knowledge. As few of the studies making up this body of knowledge omit reference to Kahn et al.'s [1964] role episode model, this study describes and utilises this paradigm.

Role theory assumes that individuals' lives are spent acting out an assortment of "roles" both within and outside the organisational context. Each of these roles is assumed to be more a function of the social setting rather than of the individual's own personality characteristics [Katz and Kahn, 1966]. Every position (or office) within an organisation can therefore be thought of as a specific role into which an individual is "socialised". Under the role episode model, the process of socialisation occurs through the role senders'³ efforts to influence the role incumbent (focal person). Typically this involves role senders directly or indirectly communicating (sending) to the role incumbent their expectations of the incumbent's responsibilities. Clearly, role pressures created by these sent roles

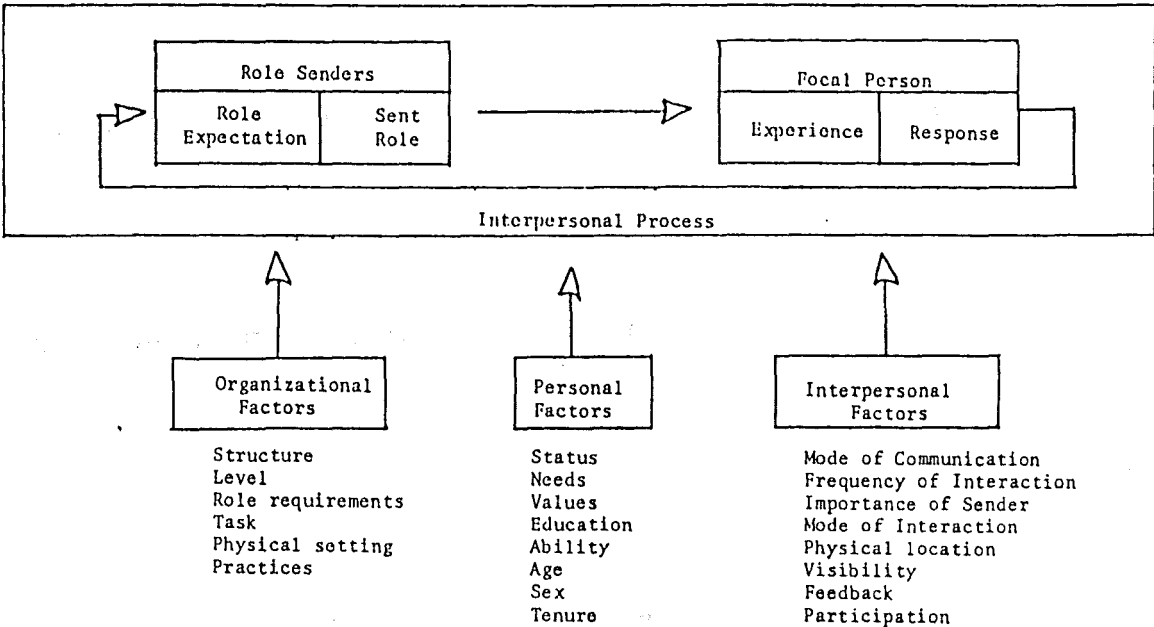
¹ Several researchers, such as House [1974], believe it to "... be more fruitful to talk about 'stress research' as a paradigm rather than 'stress' as a concept" [p. 13].

² See Kahn et al. [1964] or Rizzo et al. [1970] for reviews of this early literature.

³ Role senders represent people within the environment of the role incumbent who have developed expectations about the behavioural requirements or limits associated with a particular role. In a work setting, role senders may include the incumbent's superiors, co-workers, clients, or subordinates.

can vary according to their strength, specificity, and nature (e.g., prescriptive vs. proscriptive). However, it is not the sent role, but the role incumbent's *perception* of the sent role that has the most immediate impact on the determination of the incumbent's response to role pressure. Over time, the incumbent's actual responses to role pressure may, in fact, influence the role sender's role expectations. This relationship is represented by the feedback arrow in the diagram of the role episode model presented in Figure 2.3.

FIGURE 2.3
THE ROLE EPISODE MODEL



(Source: Vans Sell et al. [1981, p.47])

The model presented in Figure 2.3 also suggests that each role episode has the potential to be affected by organisational factors, such as structure and practices; personal factors, such as an individual's age, sex, and tenure in the organisation; and interpersonal factors, such as the frequency of interaction between role sender and role incumbent, and the importance of the role sender.

Under role theory, stress can arise from a particular role episode when sent roles conflict with each other, or, alternatively, information required to effectively carry out a sent role is lacking. These situations are known as role conflict and role ambiguity, respectively.

More specifically, role conflict can occur when compliance with one sent role would make compliance with another difficult [Kahn et al., 1964]. Kahn et al. identify five major forms of role conflict:

1. Intra-sender conflict:- conflicting prescriptions/proscriptions from the same sender.
2. Inter-sender conflict:- conflicting prescriptions/proscriptions from different senders.
3. Inter-role conflict:- conflict between roles in situations where an individual holds more than one role.
4. Person-role conflict:- where an individual's role requirements are incompatible with his/her own beliefs, values, and norms.
5. Role-overload:- reasonable expectations may have been received from role senders, but he/she may not have enough time to address them all.

Role ambiguity occurs when an individual does not possess requisite information to enable effective execution of his/her role. The type of information normally required by the role incumbent includes [Kahn et al., 1964]:

1. relevant expectations relating to the role such as rights, duties, and responsibilities;

2. relevant activities needed to fulfil the incumbent's responsibilities, and the best way to perform the activities;
3. consequences of role performance/non-performance;
4. behaviour that is rewarded/punished, nature of rewards/punishments, behaviour that is satisfying or frustrating; and
5. opportunities for advancement.

Both components of role stress have been linked to negative outcomes, such as increases in perceived job tension, higher job dissatisfaction, greater propensity to leave the firm, and lower performance [Van Sell et al., 1981; Jackson and Schuler, 1985]. Kahn et al. [1964] even argue that “in their extreme form conflict and ambiguity pose for the individual an almost insurmountable problem” [p. 6]. However, despite the potentially negative consequences of role stress, it is possible that certain minimal levels of role conflict and ambiguity could be beneficial to an organisation. As Kahn et al. [1964, p. 54] note:

To regard conflict simply as a disruption of an otherwise harmonious way of life is to overlook the fact that conflict often provides the basis for individual achievement and social progress. The same can be said for ambiguity, for while ambiguity implies disorderliness that is antithetical to the very idea of organization, it also permits a kind of flexibility that can facilitate adaptation to changing circumstances.

It is likely, though, that the perceived stress that arises in situations of role conflict and ambiguity will become maladaptive and harmful when an individual is exposed to it on a regular and sustained

basis, and without sufficient time to recuperate [Weick, 1983].

2.4 Correlates of Role Conflict and Ambiguity

Jackson and Schuler [1985] estimate that around two hundred studies have been conducted using measures of role conflict and role ambiguity. Based on selective interpretations of this body of literature, several papers (e.g., Fisher and Gitelson, 1983; and Van Sell et al., 1981) have found it difficult to draw definitive conclusions due to the number of studies that have produced conflicting and/or unclear results. Jackson and Schuler [1985] sought to overcome this problem by critically analysing the role stress literature using a meta-analysis methodology. The summarised results of their efforts are shown in Table 2.1.

TABLE 2.1

Summary of the Results of Jackson and Schuler’s [1985] Meta-Analysis

Correlate	Role Conflict			Role Ambiguity		
	k	“True r”	% Var.	k	“True r”	% Var.
			Unacc.			Unacc.
Organisational Context						
Task/skill variety	8	0.17*	73	1	-0.11	87
Autonomy	8	0.00	91	1	-0.39*	65
Feedback from others	5	-0.31*	70	8	-0.58*	87
Feedback from task	5	-0.25*	41	8	-0.41*	63
Task identity	5	-0.44*	0	8	-0.47*	0
Leader initiating structure	10	-0.27*	24	3	-0.43*	63
Leader consideration	9	-0.42*	7	2	-0.44*	52
Participation	14	-0.37*	78	1	-0.55*	77
Formalisation	9	-0.11	85	9	-0.49*	82
Level	5	-0.07*	8	5	0.11*	28
Individual characteristics						
Locus of control	5	0.27*	40	8	0.28	44
Tenure	7	0.02	55	8	-0.16*	40
Age	6	-0.06	75	6	-0.23*	0
Education	5	0.19	77	5	0.15*	64
Self-esteem	0	-	-	7	-0.34*	54
Affective reactions						
Job satisfaction						
General	37	-0.48*	51	5	-0.46*	73
Supervision	14	-0.53*	0	1	-0.53*	0
Work itself	22	-0.49*	0	2	-0.52*	25
Co-workers	11	-0.42*	0	1	-0.37*	54
Pay	14	-0.31*	6	1	-0.26*	77
Advancement	14	-0.38*	46	1	-0.40*	31
Tension/anxiety	23	0.43*	61	4	0.47*	81
Commitment	11	-0.36*	73	1	-0.41*	45
Involvement	10	-0.26*	0	1	-0.44*	30
Propensity to leave	13	0.34*	38	2	0.29*	74
Behavioural reactions						
Absence	3	-0.02	50	5	0.13*	8
Performance						
Objective	3	0.02	0	9	-0.10	70
Others' ratings	14	-0.11*	33	1	-0.12*	50
Self-ratings	7	-0.03	54	1	-0.37*	48

Note: k is the number of samples upon which calculations were based; “True r” is the average weighted correlation corrected for artifacts; and % Var. Unacc. is the percentage of unexplained variance in correlations observed across studies. * Indicates the 90% confidence interval does not include the value of 0.00.

The variables shown in Table 2.1 were chosen by the researchers “... because of their frequency of appearance in the literature” [p.19]. The meta-analysis method employed by the researchers allowed for the calculation of overall correlations (labelled “True r ” in Table 2.1) between each of these variables and role conflict and role ambiguity, respectively, based on the reported results of many studies. The overall correlation coefficients were calculated by determining the weighted average correlation coefficient (weighted by sample size) across all relevant studies. The weighted coefficients were then corrected for the effects of several artifacts, such as range restriction of the “predictor” and unreliability of the “predictor” and “criterion”. The “% Var. Unacc.” columns in Table 2.1 represent the percentage of the variance in reported correlation coefficients across studies that is not attributable to statistical artifacts, such as sampling error and imperfect measurement. Consequently, the unaccounted variance is most likely due to the influence of moderator variables or unmeasurable artifacts (e.g., miscalculations and typographical errors). Jackson and Schuler argue that when the “% Var. Unacc.” is more than 25%, “... it is reasonable to conclude that one or more moderators have influenced the correlation coefficients obtained in various samples” [p. 26].

Table 2.1 reveals that, with few exceptions, the direction of the correlation between each variable and role conflict is consistent with the corresponding correlation with role ambiguity. As Jackson and Schuler point out, however, the correlations with role conflict and role ambiguity, respectively, do differ in terms of their strength. In particular, correlations between specific variables and role ambiguity are, on the whole, stronger than those for role conflict. Another interesting overall finding is the fact that all but ten correlates of role conflict and all but 5 correlates of role ambiguity have values of “% Var. Unacc.” in excess of 25. This suggests that “... meaningful moderator variables should be introduced and analyzed for their ability to account for fluctuations in correlation coefficients across samples” [Jackson and Schuler, p. 27]. The remainder of this section will discuss several of the more significant correlates shown in Table 2.1.

Jackson and Schuler identified ten major correlates that relate to the organisational context. Of these

variables, a relatively large number of studies have examined the relationship between *leadership style* and the elements of role stress. According to Ezzamel and Hart [1987], leader initiating style "... reflects the extent to which an individual is likely to define and structure his role and those of his subordinates towards attaining organisational goals" [p.77]. As one would expect, initiating style has been found to have an inverse relationship with both role conflict and ambiguity. On the other hand, leader consideration has been defined as "... the extent to which the leader is likely to display, in his work relationships with subordinates, mutual trust and respect for their feelings" [Ezzamel and Hart, 1987, p. 77]. Given this definition, Jackson and Schuler argue that there should be no relationship between either role stress element and leader consideration. Contrary to these expectations, leader consideration is typically found to reduce role ambiguity and role conflict. Jackson and Schuler suggest that contingent administration of consideration, e.g., only after desired performance, will help clarify the consequences of role behaviour - thus reducing role ambiguity. Once rewarded behaviours are known to the role incumbent, role priorities can be determined, thus reducing role conflict.

Role conflict and role ambiguity have been included in a number of studies that have sought to explain the linkage between *participation in decision making* and various affective reactions (e.g., job satisfaction) and behavioural reactions (e.g., performance) [Chenhall and Brownell, 1988; Schaubroeck et al., 1989; Schuler, 1980]. These studies have generally hypothesised that role stress intervenes in the relationship between participation and these variables. Empirical findings are generally supportive of this hypothesis. In particular, they have revealed that role stress is reduced when more participation in decision making is permitted.

Formalisation, the degree to which policies, procedures, position responsibilities, and performance standards are explicitly formalised [Senatra, 1980], has also been included in a number of role stress studies. In particular, a relatively consistent negative association between formalisation and role ambiguity has been found in the literature. This is reflected by the "True r " of -0.49 between these two variables. The association between formalisation and role conflict, on the other hand, is not so

clear (as reflected by a non-significant “True r ” of -0.11). One reason suggested by Jackson and Schuler for this lack of significance, is that the effect of formalisation on role stress largely depends on whether or not the employees in question have professional orientations. For instance, a move towards formalisation within a firm may be viewed as legitimate and, therefore, conflict reducing by someone possessing an essentially organisational/bureaucratic orientation. However, professionals, whose norms are likely to conflict with organisational norms [Organ and Greene, 1981; Sorenson and Sorenson, 1974], may consider that increasing formalisation limits their professional autonomy. For professionals, then, formalisation may increase perceived role conflict.

According to Jackson and Schuler [1985], *organisational level* would be expected to be associated with role stress because, as employees progress through the organisational hierarchy, they are more likely to be “... directly connected to the environment and its associated uncertainties and dependencies” [p. 33]. The results of the meta-analysis, however, reveal no major relationship between organisational level and elements of role stress. This result probably reflects the fact that Jackson and Schuler’s proposition is overly simplistic. The level of role stress faced by employees at different levels in the organisation is likely to depend on the nature of the organisation. For example, one would expect perceived role ambiguity to be highest at lower levels in the organisational hierarchy of audit firms due to the fact that auditors face a relatively steep learning curve when entering the profession [Rhode, 1978] and, at the same time, must spend a significant proportion of their work time interacting with individuals external to the audit firm [Rebele and Michaels, 1990]. On the other hand, perceived role conflict might be expected to be greatest for auditors in the middle of the hierarchy due to the fact that auditors in these positions frequently face “...conflicting needs and demands of superiors and subordinates” [Gaertner and Ruhe, 1981, p. 70]. In fact, in a descriptive study of public accountants, Gaertner and Ruhe [1981] obtained results that were consistent with these propositions.

Kahn et al. [1964] argue that personality factors play an important role in determining the differential

perceptions of and reactions to role stressors. Table 2.1 indicates that there are five frequently studied personality-related variables: locus of control, tenure, age, education, and self-esteem. The results of Jackson and Schuler's [1985] meta-analysis suggest that *locus of control* has, at best, a moderate positive association with role conflict and role ambiguity (i.e., higher levels of role stress are associated with an external locus of control). Persons having an internal locus of control tend to perceive themselves as having some influence on the determination of events and outcomes "... through the exercise of imagination, knowledge, skill, and choice" [Choo, 1986, p. 19], whereas persons having an external locus of control believe that they have very little control over events and outcomes. An internal is likely to be more informed about their occupation than externals, therefore one might expect them to perceive relatively less role ambiguity. Further, Jackson and Schuler hypothesise that internals are more likely than externals to rely on self-generated roles in situations where there are conflicting role expectations, thereby "... bringing clarity and consistency to the situation" [p. 35]. Hence, one might expect internals to perceive less role conflict. It should be noted that several of the studies analysed by Jackson and Schuler hypothesised that locus of control also moderates the relationship between role stress and the negative consequences of role stress.

Based on the results reported in Table 2.1, *job tenure* seems only to have a small negative correlation with role ambiguity. This relationship may be due to persons with relatively long tenure having gained a significant amount of information about others' role expectations. Jackson and Schuler's alternative explanation is that failure to gain adequate information concerning one's role expectations will lead an individual to eventually leave the job.

Although there have been correlations between the elements of role stress and *age* and *education*, respectively, these are typically weak or not significant. Further, Jackson and Schuler claim that there is little theoretical reason to expect any relationship between role stress and either of these variables.

Of the studies that examine the linkage between role stress and affective reactions, a significant

number have investigated the consequences of role stress on various measures of *job satisfaction*. Table 2.1 shows a consistently strong negative association between job satisfaction and both role conflict and role ambiguity. The causal ordering between these variables has also been empirically established in a number of studies cited by Jackson and Schuler.

Another well documented outcome of role stress is *job-related tension*. Not surprisingly, Table 2.1 shows a positive association between role stress elements and tension/anxiety. Jackson and Schuler do note, however, that one commonly used measure of tension includes items that directly parallel those in the most frequently used measure of role stress - Rizzo et al.'s [1970] role conflict and role ambiguity scales. Hence, the observed correlations between the components of role stress and tension may be somewhat overstated.

Like tension, *propensity to leave* can be seen to be positively correlated with both role conflict and role ambiguity. However, the latter correlations appear to be weaker than those relating to job related tension. The possibility that the path between role stress and propensity to leave is an indirect one may explain these weaker correlations. Using a structural model, Schaubroeck et al. [1989] found, for example, that role conflict and role ambiguity affect turnover intentions through their impact on job satisfaction.

Finally, a significant number of studies have examined the linkage between role stress and individual *performance* - a behavioural reaction (e.g., Ivancevich [1980], Miles [1976], Schuler et al. [1977], and others). Despite strong arguments for a negative relationship between performance and role stress components based on both cognitive and motivational grounds, studies have generally found weak negative associations between these variables. Because all but one of the performance-related “% Var. Unacc.” values in Table 2.1 are in excess of 25 for both role conflict and ambiguity, it is likely that moderator variables influence the role stress-performance relationship. This fact may account for the lower than expected negative correlations between role stress elements and

performance that have been found in the literature.

This section has overviewed the major correlates of role stress, based on the findings of studies in the general role stress literature. The following section will adopt a narrower focus by reviewing literature linking role stress to the auditing profession.

2.5 Auditors and Role Stress

2.5.1 Overview of the Auditing Profession

In most western countries financial statement audits are carried out by members of one or more professional accounting bodies. For instance, to be able to conduct an audit of a company in New Zealand an auditor must be a member of the New Zealand Society of Accountants. Membership of a professional accounting body will generally require the auditor to comply with that body's rules, promulgations (e.g., auditing standards), and ethical provisions. Chartered accounting firms, which range from one- or two-person offices to international firms employing thousands of professional members, are generally the primary providers of audit services. The typical organisational hierarchy in such firms has been described by Sorenson and Sorenson [1974, p. 98]:

The main positions in such bureaucracies in descending order of rank are partner, manager, supervisor or senior accountant, and junior or staff accountant. Partners assume the final responsibility for all work performed and also share most directly in the financial profits or losses. ... Managers are part of the executive management; they are responsible for a number of audits in progress simultaneously. They also direct the activities of senior accountants in charge of these various audits. Supervisor

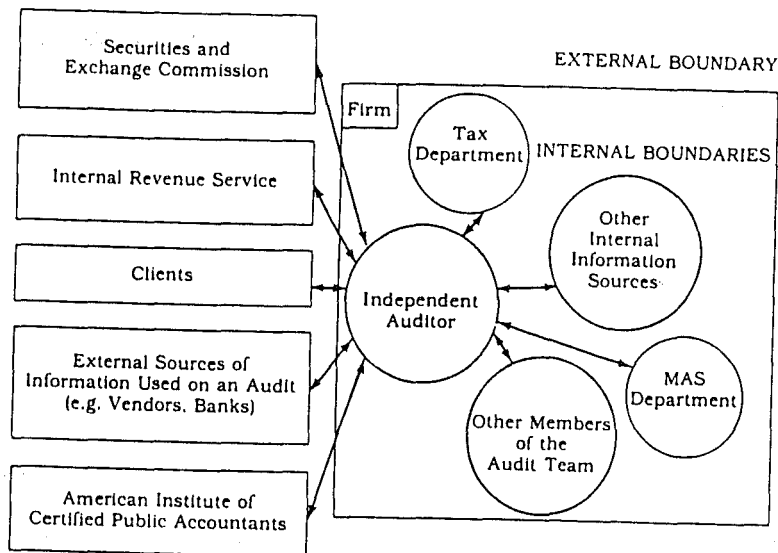
accountants are generally in charge of specific audits and supervise the senior and junior accountants assigned with them to each audit. Promotion to supervisor accountant normally occurs within four years and promotion to senior accountant occurs within two to three years. Junior (or staff) accountants generally are the new recruits who have just graduated from [university]. After undergoing an orientation and training program, they are assigned to work on assignments under the direct guidance of a senior accountant. Much of the work of a junior accountant includes routine activity, such as verifying inventories, reconciling bank statements, and so forth.

2.5.2 *The Susceptibility of Auditors to Role Stress*

As boundary spanners, auditors are exposed to a significant number of role stressors. Boundary spanners represent people who occupy organisational positions that require extensive "... interactions with many people, both inside and outside the organization, with diverse needs and expectations" [Goolsby, 1992, p. 156]. People in boundary spanning roles are exposed to particularly high levels of role stress due to the need to understand and satisfy the expectations of the many role senders within the role set [Goolsby, 1992; Kahn et al., 1964; Van Sell et al., 1981]. Rebele and Michaels [1990] claim that "... the independent auditor's role is particularly susceptible to both components of role stress because of ... its boundary-spanning nature" [p. 127]. This fact is evident when one examines the auditor's environment. For example, Figure 2.4 illustrates the complex pattern of interactions that exist within the auditor's internal and external environment.

FIGURE 2.4

COMMON INTERACTIONS ENGAGED IN BY THE INDEPENDENT AUDITOR



(Source: Rebele and Michaels, 1990, p. 128)

There are numerous work-related situations that could result in auditors experiencing role stress.

Listed below are a number of role stress scenarios that are peculiar to the auditing profession.

Examples of situations in which *role conflict* could arise:

1. Staff (or junior) auditors can often face incompatible demands from seniors, managers, and/or partners. For example, Lightner, Leisenring, and Winters [1983] found that staff auditors are sometimes put under pressure by audit seniors to underreport chargeable time.
2. Auditors are often caught between demands of a client and demands of the profession [Weick, 1983; Wilcox and Smith, 1977].
3. Staff (or junior) and senior auditors frequently work on several jobs simultaneously

exposing these staff to the risk of conflicting requirements of two or more partners (or managers) [Choo, 1982].

4. Common balance dates frequently cause heavy concentrations of audits at certain times during the year. This, coupled with tight reporting deadlines, can lead to role overload [Choo, 1982].

Examples of situations in which *role ambiguity* could arise:

1. New graduates typically face a steep learning curve in their initial years with an audit firm. Their formal education frequently fails to equip them with the practical requirements of every day auditing [Rhode, 1978]. This problem is not assisted by the complex and technical nature of the profession [Figler, 1980; Rebele and Michaels, 1990].
2. There is a continual need to utilise new and inexperienced auditors due to high levels of voluntary and involuntary turnover [Rhode et al., 1977]. Turnover is perpetuated, to some extent, by the employment policies of many of the large accounting firms. These firms encourage non-performing auditors to seek alternative employment relatively early in their professional careers [Rhode et al., 1977]. As Gaertner and Ruhe [1981] succinctly state, "...accounting is essentially an up-or-out proposition" [p.68].
3. The unrelenting pace of change in relation to technology, legislation, and professional promulgations [Figler, 1980; Choo, 1982], provides further sources of ambiguity.

2.5.3 Empirical Evidence of Role Stress in the Auditing Profession

In a largely descriptive study of regional and national public accounting firms in the US, Gaertner and Ruhe [1981] attempted to identify the specific employee groups experiencing role stress. A comparison between regional and national accounting firms revealed that staff in regional firms perceived comparatively more role ambiguity and less role conflict than staff in national firms. The former result would most likely be attributable to the smaller, more decentralised, and less departmentalised nature of regional firms. When divisions within regional firms were compared, it was found that staff in audit divisions experienced greater mean levels of role stress than staff in other divisions. However, this result was not statistically significant. Lastly, when staff levels were compared, it was revealed that staff accountants (from all divisions) perceived more role ambiguity than more senior members of the firm, while non-manager senior accountants experienced higher levels of role conflict than any other level within the firm. The latter result is not surprising given that the supervisor/senior accountant is the “middleman” within such firms.

Senatra [1980] was the first study in the auditing literature to examine the sources of role stress within public accounting firms. Senatra identified ten specific elements of the organisational climate of public accounting firms which he hypothesised would affect perceptions of role conflict and role ambiguity. These included (1) violations in the chain of command; (2) formalization of firm rules and procedures; (3) emphasis on subordinate personnel development; (4) tolerance of error; (5) top-management receptiveness to ideas and suggestions; (6) adequacy of work coordination; (7) timeliness of superiors' responses to problems; (8) information suppression by superiors and subordinates; (9) adequacy of authority; and (10) adequacy of professional autonomy. To test these hypotheses, Senatra surveyed 88 senior accountants. Seniors were chosen due to their susceptibility to role stress and their relatively high propensity to seek alternative employment. Senatra found that violations in the chain of command tended to increase both role ambiguity and role conflict. Further, role conflict was negatively associated with formalisation of rules and procedures, while positively

related to information suppression. On the other hand, role ambiguity was found to be negatively influenced by decision timeliness, top management receptiveness, and adequacy of authority.

Bamber et al. [1989] extended Senatra's [1980] study by examining whether or not the degree of audit firm structure influences elements of the firm's organisational climate, task-technology, and role stress. The perceptions of role stress of 121 audit seniors from four Big Eight accounting firms were examined. Two of the sample firms were categorised as structured (in both an organisational and technological sense), and two were determined to be unstructured. Auditors in structured firms were found to experience significantly less role conflict and only marginally less role ambiguity relative to those in unstructured firms. Of the eight organisational climate and task-technology variables chosen for the study, five were significantly different between structured and unstructured firms, and four of these five were in the hypothesised direction. Contrary to expectations, audit seniors in structured firms perceived their firms as being more adaptable to atypical audit situations than did auditors in unstructured firms.

The results of Senatra's [1980] study suggest that inappropriate organisational design may lead to role stress. This thesis was investigated by Pei and Davis [1989] using internal auditors as subjects. Internal auditors differ from external auditors in that they are usually members of "... a professional department in a larger non-professional organization" [Pei and Davis, 1989, p.102]. Using perceived misalignment of an internal audit department's organisational status as a surrogate for its organisational structure, Pei and Davis found that organisational structure could act as a direct source of role stress and an indirect source as a consequence of its negative association with perceived professional autonomy.

The most recent study in the audit literature to examine antecedents of role stress was conducted by Rebele and Michaels [1990]. These researchers sent questionnaires to 211 auditors in four international audit firms. In total, 155 usable responses were obtained. Using path analysis, the

researchers found that there was no direct relationship between the extent of boundary spanning activities, such as information gathering, and either component of role stress. However, boundary spanning activities were found to be negatively associated with perceived environmental uncertainty, which, in turn, was positively associated with both role conflict and role ambiguity. Analysis of the mean scores for these four variables by firm, level of education, position tenure, public accounting experience, and audit experience failed to reveal any statistically significant differences.

The consequences of role stress for auditors were first considered by Sorenson and Sorenson [1974]. Their study examined the relationship between role conflict, operationalised as the conflict between professional and bureaucratic orientations, and two job outcome variables, namely, job satisfaction and turnover intentions. The researchers' contention was that, as an auditor is essentially a professional who is employed in a bureaucratic organisation, "... the orientation and behavior of a CPA in a large organization are likely to be affected by the contrast in these two types of orientations" [p. 105]. Based on the results of a survey of 264 auditors from branch offices of four national accounting firms, the researchers concluded that such conflict could result in both job dissatisfaction and job migration.

The effects of role stress on job outcome variables were also investigated in the previously mentioned study by Senatra [1980]. He hypothesised that both elements of role stress would be positively correlated with job-related tension and propensity to leave, and negatively correlated with job satisfaction. Although the results of the study were in the hypothesised direction, only the role conflict-job-related tension and role ambiguity-job satisfaction relationships were statistically significant. Accordingly, Senatra recommended that future studies investigate variables that might intervene between perceptions of role stress and its consequences.

Rebele and Michaels [1990] argue that jobs, such as auditing, "... in which performance is dependent upon personal interaction and cultivating and maintaining mutually beneficial relationships may be

more affected by role conflict and ambiguity than other types of jobs” [p. 135]. Consequently, the researchers hypothesised a negative relationship between self-rated performance and both components of role stress. Job satisfaction and job-related tension were also expected to be associated with role stress. In addition, Rebele and Michaels investigated whether these relationships were moderated by the auditor’s need for achievement and his/her organisational level. As expected, a negative association was found between job satisfaction and both role conflict and role ambiguity. However, job-related tension was only positively related to role conflict, while performance was only negatively related to role ambiguity. Neither moderator variable had any significant effect on the reported relationships.

Lastly, Senatra [1988] investigated whether male and female senior auditors differ in their perceptions of sources and consequences of role stress. He concluded that “no significant differences exist between men and women audit seniors in their perceptions of the organisational climate of their firm, the degree of role stress, or the measures of job-related tension, job satisfaction, or propensity to leave” [p. 15].

2.6 Managing Role Stress

The role stress literature suggests two principal means by which organisations may address the deleterious effects of role stress: modification of the task environment and individual-focussed stress intervention programmes [Goolsby, 1992].

The primary objective in modifying the task environment is to eliminate or minimise one or more role stressor. In order to achieve this objective, it will be necessary for staff members who have responsibility for others to be able to make a timely diagnosis of role stress and the relevant role

stressor(s) based only on the observable stress symptoms. These symptoms *may* include an increase in the number of careless mistakes, working significantly more or less hours than usual, increased lateness or absenteeism, low staff morale, difficulty in making decisions, etc. [I & M, 1980]. Management education programmes may facilitate this process by raising awareness of role stress, and its sources and consequences.

Once role stressors have been identified, steps can be taken to eliminate or minimise those stressors that are controllable by the organisation. A variety of approaches are available for this purpose. *Alteration of the organisational climate* is one method that may be appropriate. For example, the work of Senatra [1980] and Bamber et al. [1989] suggest that factors such as reducing violations in the chain of command, improving work flow coordination, and formalizing rules and procedures, may, under the appropriate circumstances, reduce the role stress experienced by subordinates.

Another technique that is often used to modify the task environment is *role analysis and clarification* [I & M, 1980]. This procedure involves questioning staff directly concerning their perceptions of what is expected of them by their superiors; their expectations of their superiors; the information they require to do their jobs well; and the degree to which areas of the nature and scope of their job bothers them. I & M believe that the information yielded from such questioning "... may help to better inform employees of their jobs, and aid in reducing conflict and ambiguity. Or, in some cases, changes may need to be made in job descriptions, divisions of labor, structural reporting relationships, or similar aspects of the job and its environment" [p. 210]. I & M also recommend the use of an appropriately implemented *Management by Objectives* (MBO) system. They argue that having managers and subordinates jointly determining the subordinate's areas of responsibility and objectives may lead to lower perceptions of role stress by the subordinate.

Where modification of role stimuli is not possible or not feasible, organisations may need to pay more consideration to the selection and placement of employees based on both their susceptibility to role

conflict and role ambiguity and also their ability to cope with such stress. Clearly, consideration of personality variables would be an essential component of this activity.

As mentioned earlier, the main organisational alternative to modification of the task environment involves the implementation of individual-focused stress intervention programmes. In fact, Goolsby [1992] has classified these into three types of programme. The first category relates to stress management training programmes aimed at enhancing the individual's ability to cope with role stress. These programmes may involve instruction in meditation; biofeedback (i.e., self-monitoring of physiological and emotional states); muscle relaxation; exercise; etc. The second category of programme involves the organisation providing "... staffing, funding and training for social support groups, counselors, and managers" [Goolsby, p. 158]. The third and last category involves the use of "reality seminars". Goolsby describes these as "... instruction designed to detail the exact nature of a position and its associated stressors prior to entering a job. ... By adjusting expectations, reality seminars moderate stress by preparing and equipping the individual early in his/her career to control the stress when it arises" [p. 158].

In summary, it is clear that many alternatives are available to organisations for dealing with role stress. It is unlikely, though, that any one strategy alone will be sufficient to fully deal with role stress across the whole organisation. In general, a combination of specific strategies would seem to be the most effective approach. Regardless of the actual strategies chosen, organisations should be wary of strategies themselves becoming stressors. I & M [1980], for example, indicate that inappropriate use of MBO systems and role analysis and clarification have frequently increased rather than decreased stress levels. The same researchers argue that a major step towards avoiding this problem is for organisational programmes to treat employees as individuals. Although none of the methods of managing role stress mentioned in this section relate specifically to audit firms, there does not appear to be an obvious reason why they could not be adapted for use in such an environment.

2.7 Summary

The purpose of this chapter has been to review the existing role stress literature, particularly as it relates to auditors.

Stress, in general, was seen to be a ubiquitous concept having the potential to manifest itself in many aspects of an individual's life. From an organisational point of view, the potentially deleterious effects of stress include such outcomes as poor performance, high turnover, absenteeism, and job dissatisfaction; while, from the individual's standpoint, stress can lead to undesirable health, cognitive, affective, and behavioural outcomes. However, these effects would not be expected to occur consistently across all individuals; rather, individual differences would be expected to moderate the relationship between stress and stress outcomes.

This chapter has shown role stress to be a specific form of stress, arising principally from role conflict and role ambiguity. A review of the general role stress literature highlighted the fact that (a) in general, the consequences of role stress are negative; (b) role conflict and role ambiguity are separate constructs; and (c) moderating variables potentially play an important role in explaining the relationship between role stress and stress consequences. In fact, several researchers have explicitly indicated that further role stress studies should be conducted using appropriate moderator variables [Jackson and Schuler, 1985; Van Sell et al., 1981].

Several of the studies reviewed in this chapter claim that, due to the nature of their work, auditors are particularly prone to role stress. In general, this contention appears to be supported by those studies that have used audit professionals as subjects.

This concludes the discussion of the two independent variables of interest to the current study. The next chapter will overview both of the relevant dependent variables: job satisfaction and performance.

Chapter 3

The Effects of Role Stress on Job Satisfaction and Performance

3.1 Introduction

It has been argued that stress results in considerable loss to organisations, such as audit firms, due to its effects on "... important organizationally valued outcomes, such as job satisfaction and job performance" [Sullivan and Bhagat, 1992, p. 353]. Job dissatisfaction amongst auditors has been linked to the formation of intentions to leave current employment [Bullen and Flamholtz, 1985; Kemery et al., 1985; Kemery et al., 1987; Snead and Harrell, 1989], while poor auditor performance may expose audit firms to loss of revenue and legal liability. Further, poor auditor performance may also undermine the public's confidence in the accounting profession, in general [AICPA, 1978].

The current study examines the impact of role ambiguity and role conflict on both the job satisfaction and job performance of external auditors. To this end, the principal purpose of this chapter is to describe these two dependent variables and overview the literature associating role stress with job satisfaction and performance.

3.2 Job Satisfaction

3.2.1 *Job Satisfaction: An Overview*

Staff turnover in public accounting firms, particularly among junior, senior, and supervisor positions, has been and continues to be a significant problem in the accounting profession [Aranya et al., 1982; Bullen and Flamholtz, 1985; Rhode et al., 1977; Senatra, 1980; Snead and Harrell, 1991; Sorenson and Sorenson, 1974]. According to Bullen and Flamholtz [1985, p. 288]:

The costs associated with turnover include the specific direct costs of selection and training, as well as the more general investments involving lower productivity and greater supervision requirements. ... [Also,] there are possible costs resulting from negative goodwill of dissatisfied migrating employees who move to client or prospective client positions.

The level of job dissatisfaction experienced by an individual has been identified in the literature as being one of the most significant influences on the formation of an intention to leave current employment [Bullen and Flamholtz, 1985; Kemery et al., 1985; Kemery et al., 1987; Mobley, 1977; Schaubroeck et al., 1989; Snead and Harrell, 1989]. Job satisfaction (or dissatisfaction) has been defined as the positive (or negative) emotion that results from a conscious or subconscious value appraisal of one's job [Locke, 1976]. An appraisal which reveals that an individual's job fulfills, or permits fulfilment of that individual's job values is likely to lead to the experience of job satisfaction. Conversely, an appraisal that suggests that an individual's job ignores, frustrates, or negates that individual's job values is likely to lead to negative emotions consistent with job dissatisfaction [Locke, 1984].

An earlier conceptualisation of job satisfaction by Herzberg [1966] had assumed that specific aspects of an individual's job (called 'hygiene' factors), such as pay and working conditions, could reduce or eliminate job *dissatisfaction* yet leave overall job *satisfaction* unaffected. Further, Herzberg believed that certain other factors (motivators) could influence job *satisfaction* independent of job *dissatisfaction*, such as the intrinsic value of work itself. Subsequent empirical research, however, is not supportive of Herzberg's theory¹. A later theory by Locke [1976] appears to be more plausible in that the attainment of *any* job-related value will lead to job satisfaction, while the frustration, loss, or destruction of *any* job-related value will lead to job dissatisfaction [Locke, 1984]. Further, Locke's theory argues that the relative importance of a particular value will influence the magnitude of the resulting job satisfaction or dissatisfaction experienced by the individual.

Job satisfaction (or dissatisfaction), like all emotions, leads to tendencies to act [Arnold, 1960; Locke, 1984]. Whether these tendencies are, in fact, acted upon will usually be determined by one or more mediating or moderating factors. For instance, Locke [1984] suggests that job dissatisfaction can lead to behavioural and/or psychological withdrawal from a job situation. Common manifestations of behavioural withdrawal include lateness, absenteeism, or employee turnover. Whether or not a staff member actually leaves his or her current employment, however, will not be the direct result of job dissatisfaction. Instead, significant levels of job dissatisfaction will most likely lead to the formation of an intention to leave. Whether this intention is acted upon will depend on many factors, e.g., availability of suitable alternative jobs, the cost of searching for alternative employment, etc. [Mobley, 1977; Mobley et al., 1979]. Similar reasoning can be used to explain why researchers have failed to find a consistent linkage between job satisfaction and performance. For instance, Iaffaldano & Muchinsky's [1985] meta-analysis revealed that the underlying correlation between these two variables is relatively low ($r = 0.17$). As Locke [1984] points out, individual performance depends on factors other than job satisfaction (dissatisfaction) alone, such as task knowledge and ability, work

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See Locke [1976] for a critique of Herzberg's theory of job satisfaction.

load, reward/punishment systems, technology, the work environment, competence of supervisors, etc.

Naturally, the valued aspects of an employee’s job are going to vary considerably from person to person. However, several studies have found “... broad similarities among employees in what they want. These broad similarities are presumably the result of people having the same underlying needs” [Locke, 1984, p. 103]. A summary of the major job values identified in Locke’s [1984] review of the job satisfaction literature is presented in Table 3.1.

TABLE 3.1

MAJOR DETERMINANTS OF JOB SATISFACTION

Job Aspect	Job Value	Wider Value or Need
Work Content	Consistent with personal interests Importance of work/task Chance to use skills Responsibility Autonomy Variety Achievement, progress Feedback Clarity Harmony Participation Pressure Fatigue avoidance	Pleasure Growth Self-esteem Efficacy Physical well being
Pay and Benefits	Fairness Job security	Justice, need satisfaction
Promotions	Fairness	Justice, visibility, growth
Recognition	Recognition	Justice, visibility
Working Conditions	Resources Hours Shift work (-) Safe physical conditions Privacy	Helps to get work done Helps get off-the-job values Interferes with home life, health Health, well being Facilitates concentration; privacy
Coworkers/subordinates	Similarity Competence, cooperation	Friendship Helps get work done
Management/supervision	Respect Trust Two-way communication Provide above values	Self-esteem See above
Unions	Pay	See above

(Source: adapted from Locke [1984, p.110 - 111])

Although job performance is not included in Table 3.1, a number of studies have attempted to demonstrate that this variable is also a potential determinant of job satisfaction. As mentioned earlier

in this chapter, however, Iaffaldano & Muchinsky's [1985] meta-analysis found that the correlation between these two variables is relatively low. Locke and Latham [1990] suggest that it is not performance, per se, that leads to job satisfaction, rather it is likely to be the degree to which an individual's performance exceeds or falls short of his or her personal goals. The authors were able to cite 26 studies in support of their contention.

Several studies in the accounting literature have sought to identify the determinants of auditor job satisfaction. Ferris [1977], for example, hypothesised and found a strong negative relationship between perceived environmental uncertainty and auditor job satisfaction, based on a survey of auditors from two accounting firms. More recently, Bullen and Flamholtz's [1985] study revealed that intrinsic aspects of the work itself and the extent to which auditors perceived their jobs as preparing them for future career goals were positively associated with overall auditor job satisfaction, whereas work pressures reduced job satisfaction. Interestingly, in this study financial rewards were not significant predictors of job satisfaction. Lastly, Snead and Harrell [1991] determined that job satisfaction was negatively influenced by undesirable work stress and positively associated with the auditor's influence orientation, i.e., the strength of an individual's need for power relative to the individual's need for affiliation.

3.2.2 *The Effects of Role Stress on Job Satisfaction*

According to Locke and Latham [1990] most individuals value role clarity and harmony - the antitheses of role ambiguity and role conflict, respectively - in their work environment. Consequently, one would expect both elements of role stress to be negatively associated with job satisfaction. Indeed, empirical evidence appears to bear out these relationships [Jackson and Schuler, 1985; Van Sell et al., 1981]. For instance, Jackson and Schuler's [1985] meta-analysis, discussed in the

preceding chapter, revealed strong negative correlations between both role stress components and a variety of job satisfaction measures. The existence of these relationships among audit professionals has been confirmed in studies by Collins and Killough [1992]; Kemery et al. [1985]; Kemery et al. [1987]; Rebele and Michaels [1990]; Senatra [1980]; and Sorenson and Sorenson [1974].

Despite the relatively unambiguous findings in this area, Jackson and Schuler's meta-analysis suggests that moderator variables may play an important role in determining the impact of role stress on job satisfaction, particularly general job satisfaction. As a result, these researchers recommend conducting moderator studies in this area. Some work has already taken place towards this end. For example, the Type A behaviour pattern (TABP), which will be discussed in depth in the following chapter, has been used as a moderator variable in two studies that were excluded from Jackson and Schuler's meta-analysis. A study by Keenan and McBain [1979] found that the relationship between role ambiguity and job satisfaction was dependent on the TABP, while Ivancevich et al. [1982] found that the TABP moderated the relationship between role conflict and intrinsic job satisfaction among both managerial and nursing subjects.

3.3 Job Performance

3.3.1 Job Performance: An Overview

Poor job performance continues to be a significant concern for the auditing profession [AICPA, 1978; Senatra, 1980]. The Cohen Commission Report [AICPA, 1978] suggests that "substandard

performance by auditors may affect large segments of the public as well as the client who engages and pays the auditor” and that such “performance failures in professions are ultimately traceable to human failure ...” [p. 141]. Further, inefficient and/or ineffective audits that result from substandard performance unnecessarily expose audit firms to legal liability, loss of revenue, and diminished credibility. It is axiomatic, then, that research designed to establish determinants of auditor job performance is warranted.

According to Ferris [1981], the identification of the determinants of employee performance is one of the primary objectives of behavioural research in industry. There appears to be general agreement in this literature that the main determinants of work-related behaviour are employee motivation, job-related ability, and organisational commitment [Lawler, 1971; Porter and Lawler, 1968; Vroom, 1964]². All three of these variables have been found to influence employee performance in the audit setting [Ferris, 1981; Ferris and Larcker, 1983]. For instance, Ferris and Larcker [1983] surveyed 123 auditors from a single office of a large accounting firm in order to assess the relationship between these three variables and several measures of overall auditor job performance. Motivation, in that study, was conceptualised using Vroom’s [1964] Expectancy Theory paradigm. Expectancy theory argues that the level of an employee’s performance motivation (M) depends on the employee’s assessment of the:

... likelihood that effort (E) toward a performance objective (P) will lead to the successful attainment of that objective (i.e., $E \rightarrow P$), the likelihood that the successful attainment of the performance objective will result in securing certain outcomes (O) or rewards (i.e., $P \rightarrow O$), and the value (V) or desirability of those rewards to the individual. These factors are thought to interact multiplicatively, yielding the following

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However, it should also be noted that employee performance has also been demonstrated to have a weak association with occupational commitment and certain demographic variables [Ferris and Larcker, 1983].

conceptualization of motivation [Lawler and Suttle, 1973]:

$$M = (E \rightarrow P) \sum [(P \rightarrow O)(V)]. \quad [\text{Ferris and Larcker, 1983, p. 2}]$$

Questionnaire responses from the 90 respondents were analysed using canonical correlation analysis. The results revealed that motivation and organisational commitment were positively related to both the most recent year-end overall performance rating and current superior-rated performance, while task-related ability was positively related to salary (a performance proxy).

3.3.2 *The Effects of Role Stress on Job Performance*

In many instances researchers have automatically assumed that role stress adversely affects job-related performance (e.g., Hamner and Tosi, 1974; Ivancevich et al. [1982]; Rizzo et al.[1970]; and Senatra [1980]). Jackson and Schuler [1985] provide theoretical support for this belief based on two different perspectives. Firstly, from a motivational standpoint, they argue that one would expect a negative association between performance and both role stress elements because role conflict and role ambiguity "... are negatively associated with effort-to-performance and performance-to-reward expectancies" [p. 43]. Secondly, from a cognitive perspective, Jackson and Schuler [p. 43] suggest that:

... performance should be hindered by role ambiguity and role conflict because with them the individual faces either a lack of knowledge about the most effective behaviors to engage in or an almost impossible situation for doing everything expected. Therefore, regardless of the amount of effort expended, behaviors are most likely to be inefficient, misdirected, or insufficient.

It is somewhat surprising, then, to find that empirical studies have generally found only weak negative associations between role stress and performance³, regardless of whether objective or self-report measures of performance were used. Only one study in the auditing literature has investigated the role stress-performance linkage. Using a self-report measure of general auditor performance, Rebele and Michaels [1990] found that role ambiguity was strongly negatively correlated with job performance, while no association was found between role conflict and job performance. Further, neither organisational level nor auditor need for achievement were found to moderate these relationships.

With a view to closing the gap between empirical findings and theory, two of the most recent reviews of the role stress literature encourage further investigation of the role stress-performance relationship using theoretically-based moderator variables [Jackson and Schuler, 1985; Van Sell et al., 1981]. In particular, Jackson and Schuler's meta-analysis provides strong statistical support for the proposition that moderator variables do play an important conditioning role in the relationship between role stress and self-rated performance.

The assumed nature of the relationship between role stress and performance may be another factor contributing to the inconsistent research findings in this area. Most role stress studies that have examined the role stress-performance linkage have implicitly assumed that a (negative) linear function provides the best approximation of the relationship between these variables. There is scant mention of the possibility of a non-linear relationship between role stress and job performance in the literature generally. Van Sell et al. [1981] provide one exception when they suggest that there could be "... threshold effects at both ends of the continuum, i.e., certain minimal levels of role conflict and

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See Jackson and Schuler [1985] and Van Sell et al. [1981] for reviews of this literature.

ambiguity provide some stimulation for performance, and beyond certain higher levels of role conflict and ambiguity additional conflict and ambiguity are not more stressful" [p. 63]. Given that a curvilinear relationship between *job-related* stress and performance has been found both within and outside the accounting literature (e.g., Choo [1986] and Weick [1983]) it would seem appropriate for future studies to at least examine the validity of the linearity assumption.

3.4 Summary

The aim of this chapter was to outline the two dependent variables of interest to the current study and discuss the literature associating role stress with these variables.

It was demonstrated that job satisfaction (or dissatisfaction) is an emotional response resulting from an appraisal of the extent to which an individual's job fulfills (or does not fulfill) his or her job-related values. Depending on the individual, these job-related values range from intrinsic aspects of the work environment, such as the work itself, to more extrinsic values, such as financial rewards. In relation to the consequences of job satisfaction, it was argued that job satisfaction gives rise to felt desires to act, as opposed to action itself. In the case of job dissatisfaction, the desire to act could lead to behavioural or psychological withdrawal, or even aggressive acts. As role clarity and harmony are valued by most employees, it is to be expected that role stress will adversely affect job satisfaction. This appears to have significant implications for accounting firms wishing to reduce employee turnover.

Like job satisfaction, job performance was seen to be a significant organisational outcome variable

for audit firms. Arguments supporting a negative association between both elements of role stress and job performance were provided, based on cognitive and motivational grounds. It was posited that a lack of consistent empirical support for these relationships was due, in part, to a failure to account for theoretically-based moderator variables, and, possibly, a failure to question the assumption that linear relationships exist between components of role stress and job performance.

It is hypothesised in this study that the Type A behaviour pattern will moderate the relationship between elements of role stress and both job satisfaction and job performance. The next chapter provides a detailed review of the Type A construct.

Chapter 4

The Type A Behaviour Pattern

4.1 Introduction

The significance of individual differences in behavioural research was usefully summarised by Ivancevich and Matteson [1980, p. 165]:

Who among us has not observed - and at different times both praised and cursed - the wide range of variation in behavior and abilities between people? One of the truisms in behavioral science is that in some ways we are all like everyone else; in some ways we are like some others; and in some ways we are like no one else. The triteness of the observation does not reduce its validity. It would be difficult to make a more insightful and accurate statement than was made by the Vermont farmhand who observed that "people is mostly alike, but what differences they is can be powerful important".

The importance of individual differences in determining the consequences of stress is well established in the literature. Both generic occupational stress models (e.g., Ivancevich and Matteson [1980]) and specific stress models (e.g., Kahn et al.s' [1964] role episode model) emphasise the importance of personality in moderating the relationship between stressor and strain. Such models suggest that two people placed in similar positions and exposed to identical stressors will react differently according

to cognitive, affective, demographic, and/or behavioural differences.

The Type A behavior pattern (TABP) is a personality variable representing a consistent syndrome of behaviours [Caffrey, 1978] which has, among other things, been associated with coronary heart disease. Individuals exhibiting Type A behaviour tend to possess a strong need to master their environment. Competitiveness, drive, ambition, anger, hostility, irritability, impatience, and time-urgency are all examples of behaviour typical of Type A individuals. The TABP is central to the current study because the susceptible Type A individual is said to be “hyperreactive” to environmental stressors. Environmental stressors appear to threaten the Type A's sense of control over his/her environment. This, in turn, elicits both functional and dysfunctional behaviours from the individual directed towards regaining and maintaining control [Glass, 1977a, 77b]. As a consequence, the TABP may be considered “... a potent conditioning variable, likely to render work environment stressors into obvious stressful experience with severe disease enhancing consequences” [McMichael, 1978, p.134].

The purpose of this chapter is to review what is currently known about the TABP, with particular emphasis on the TABP in occupational settings and its relationship with job-related stress. In pursuit of this objective, a brief review will first be presented of the development of the Type A construct. Next, the general characteristics of the susceptible Type A individual will be delineated. This will be followed by a summary of research findings related to both physiological and job consequences of this behaviour pattern. The theoretical linkage between the TABP and occupational stress will then be conceptualised, followed by consideration of how the behaviour pattern may be altered. Lastly, a summary and conclusion will be presented.

4.2 Background to the Type A Behaviour Pattern

Friedman and Rosenman [1974, p. 67] describe the TABP as:

... an action-emotion complex that can be observed in any person who is *aggressively* involved in a *chronic, incessant* struggle to achieve more and more in less and less time, and if required to do so, against the opposing efforts of other things or other persons.

[emphasis in original]

Cumulative research evidence suggests that people exhibiting behaviours characteristic of Type As (competitiveness, drive, ambition, anger, hostility, irritability, impatience, and time-urgency) will be more likely to develop coronary heart disease (CHD) and be highly sensitive to environmental stressors than people who do not exhibit these behaviours [Chesney and Rosenman, 1980; Choo, 1982, 83a; Friedman and Rosenman, 1974; Glass, 1977a, 77b; Matthews, 1982; Rosenman, 1986, Sparacino, 1979]. Friedman and Rosenman denoted individuals not exhibiting these behaviours as Type Bs.

The research of Friedman and Rosenman during the 1950s and 1960s culminated in the initial identification and subsequent refinement of the set of behaviours that became known as the TABP. Their work was spurred by persistent evidence that traditional risk factors, such as lack of aerobic exercise, smoking, alcohol consumption, and diet, were not sufficient to explain the observable increase in the incidence of CHD in industrialised societies throughout the twentieth century. A growing body of research literature raised the question of whether there existed as yet unknown and important independent contributory factors to CHD. For instance, a study by Trulson [1959]¹ found that the increased coronary morbidity of middle-aged American males over the last fifty years had not

¹ As cited by Rosenman [1986].

been matched by noticeable changes in diet. Further, Friedman and Rosenman [1959] found that high dietary fat ingestion groups frequently had a significantly lower incidence of CHD than low fat groups. Advancing the view that unknown contributory factors to CHD existed, Rosenman [1986] estimated that the traditional risk factors only accounted for one-third of the numerical incidence of CHD. In the light of such evidence, Friedman and Rosenman began to look for alternative explanations of the growing incidence of CHD in industrialised societies. In particular, the two researchers began to move away from the study of purely physiological variables, towards the study of socioeconomic and other psychosocial factors. This represented a significant change in focus because extant epidemiological studies² had never seriously contemplated such variables contributing to the incidence of CHD. In the words of Rosenman [1986, p. 18]:

We wondered whether the rising incidence of CHD in western societies might stem from some emotional interplay induced by new stresses imposed by our industrialized civilization, acting in conjunction with the diet, physical inactivity, and the risk factors.

Rosenman [1986, p. 18] observed that:

Our most noted historians were pointing out that western societies were fraught with stresses that were not only restricted to their industrialized populations but also were uniquely new having never been witnessed in any prior historical period. A prominent new factor was the more rapid pace of life.

This line of thinking led the researchers to conduct extensive surveys of their own patients who had developed CHD. The researchers observed that younger, middle-aged patients with CHD tended to

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Epidemiological studies concern the "... distribution and determinants of states of health in human populations" [Kasl, 1978, p. 6].

exhibit a characteristic syndrome of behaviours. These behaviours included:

- (1) an intense, sustained drive to achieve self-selected, but usually poorly defined goals;
- (2) profound inclination and eagerness to compete; (3) persistent desire for recognition and advancement; (4) continuous involvement in multiple and diverse functions constantly subject to time restrictions or deadlines; (5) habitual propensity to accelerate the rate of execution of many physical or mental functions; and (6) extraordinary mental and physical alertness. [Rosenman, 1986, p. 19].

These behaviours were later labelled the Type A behaviour pattern (TABP). People with a relative absence of these behaviours were considered to be Type Bs. The researchers believed that all individuals lay on a normally distributed continuum, ranging from extreme Type A behaviour through to extreme Type B behaviour. Friedman and Rosenman validated their findings in a major 8.5 year prospective study known as the Western Collaborative Group Study (WCGS). According to Rosenman et al. [1975], of the 3,500 male subjects included in the study, those that were identified at the outset of the study as being Type A were twice as likely as Type Bs on follow-up to develop clinical coronary disease; were five times as likely to have a second myocardial infarction; and were twice as likely to have a fatal heart attack.

Interestingly, Friedman and Rosenman were not the first to observe an association between particular work-related behaviours and CHD. Chesney and Rosenman [1980] noted, for example, that in 1868 a German physician, Von Dusch, had observed "... that excessive work involvement and other behavioural characteristics seemed typical of people who develop CHD" [p. 188]. Further, Sparacino [1979, p. 38] reported that, in an address to the Royal College of Physicians of London in 1910, Sir William Osler proclaimed that:

... it is not the delicate neurotic person who is prone to angina, but the robust, the

vigorous in mind and body, the keen and ambitious man, the indicator of whose engines is always at “full speed ahead”.

Rosenman [1986] believes that there are two principal reasons why scant attention was paid to early observations such as these. Firstly, they were written in psychiatric parlance and published in journals that were inaccessible to most cardiologists; and secondly, the observers “... failed to consider the role of the environmental milieu in the genesis of the personality façade that they found to be characteristic of patients with CHD, despite the dramatic and uniquely new aspects of the milieu associated with the rapid increase of CHD” [p. 21]. When one adopts the more general conceptualisation of the TABP implicit in the second reason, the increasing prevalence of CHD may be seen as a consequence of the interaction between the individual and elements of his/her environment. Thus, rapid industrialisation, urbanisation, population densification, and the entrenchment of the Western work ethic during the twentieth century may all have contributed towards a greater prevalence of CHD through their psychophysiological interaction with certain vulnerable individuals.

A number of researchers have been careful to point out that the TABP is not a personality trait per se [Matthews, 1982; Sparacino, 1979; Rosenman, 1986]. Rather, the TABP, as conceptualised by Friedman and Rosenman, is a consistent syndrome of behaviours which is elicited by conditions that are perceived to be a threat or challenge by certain characterologically predisposed individuals.

4.3 General Characteristics of Type A Individuals

4.3.1 *Susceptible Type A Individuals*

There appear to be two most likely explanations for how individuals come to be susceptible to the

TABP. Firstly, predisposition to Type A behaviour could be hereditary, and secondly, the TABP could be learned behaviour. Studies by Glass [1977a] and Rosenman et al. [1974]³ provide little support for the notion that the TABP is a biological predisposition. Glass [1977a], for example, examined the differences in correlations between monozygotic and dizygotic sets of twins based on each twin's Type A score. Monozygotic twins are genetically identical, while dizygotic twins have only half of their genes in common. Glass hypothesised that if there was a significant difference between monozygotic and dizygotic correlations, respectively, then it is possible that the TABP is hereditary. His results, however, failed to support this theory. In general, research evidence appears more supportive of the second explanation, i.e., that the TABP is likely to be learned behaviour. For instance, Glass [1977a] found that mothers of Type A children engage in achievement training, and that Type A mothers frequently encourage Type A behaviour in their children, particularly if those children exhibit Type B tendencies. Glass, citing a study by Biller [1977], also suggested that Type A and B behaviour will often be passed from father to son because after the age of five a boy tends to model the behaviour of his father. Despite the weight of research evidence favouring developmental rather than genetic antecedents of the TABP, several researchers do not discount the possibility of an interaction between the learned behaviour and genetic make-up [Glass, 1977a; Rosenman, 1986]. Rosenman [1986], for example, asserts that "... it is likely that [the TABP] is superimposed on a substrate that is partly influenced by genetically determined factors" [p. 31].

Regardless of how people come to possess the TABP, Taylor and Cooper [1989] suggest that this pattern is "... recognisable early in life and remains a relatively stable construct over time" [p. 18]. However, several researchers claim that Type A behaviour is moderated in later life, particularly when the Type A worker nears retirement [Howard et al., 1977; Waldron et al., 1977].

Several major studies have found an association between the prevalence of the TABP and

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As cited by Glass [1977a].

occupational status. The Western Collaborative Group Study [Rosenman et al., 1964, 66] revealed that, among the diverse occupations included in the study, the TABP tended to be more prevalent among white-collar and professional workers than among workers in blue-collar occupational groups. This association was confirmed in a later study by Caplan et al., [1975]. From 23 occupational groups, Caplan et al. found that administrators and physicians provided the highest Type A scores, while blue-collar unskilled labourers were most likely to be Type B in comparison. Similarly, Chesney and Rosenman [1980] summarise a study by Mettlin [1976] in which an association was found between the TABP and occupational status as measured by rank, level of occupational prestige, and income. Davidson and Cooper [1980] try to explain the association between the TABP and occupational status by arguing that even though many blue-collar workers, particularly machine-paced workers, are likely to face time pressures, work in worse conditions, and take fewer holidays than white-collar workers, they are more likely to be Type B because a large proportion of such workers view work as a means to an end rather than an end in itself. Davidson and Cooper assert that intense "... job involvement is not inherent in blue-collar workers, and that, for the majority, the needs of their family and home have far more emotional significance than those from their job" [p. 377]. Chesney and Rosenman [1980] and McMichael [1978] have offered an alternative explanation for the apparent association between the TABP and occupational status. They argue that, due to their inherent traits (e.g., hard-driving, competitive, achievement-orientated, work-orientated, etc.), Type As are likely to self-select themselves into positions involving significant exposures to stressors, "... rather like the proverbial warhorse, relishing the smell of battle" [McMichael, 1978, p. 135]. Unfortunately, due to a dearth of research in the area, whether or not Type As actually self-select themselves into higher-status positions remains to be empirically confirmed.

The TABP has also been found to be more prevalent among middle-class families compared with working-class families, and middle-class urban families compared with rural working-class families [Davidson and Cooper, 1980]. The former relationship appears to result from the fact that middle-

class parents tend to "... present themselves as Type A models to their children and encourage a high need for achievement, especially in sons" [p. 377]. Davidson and Cooper attribute the latter relationship to the fact that an urban environment appears to be more conducive to the elicitation of Type A behaviour than a rural environment.

Education appears to be another variable associated with the TABP. For instance, the Western Collaborative Group Study found that within high occupational status groups, Type A individuals were likely to be less educated than their Type B counterparts. Davidson and Cooper [1980] believe that this may reflect a belief among less educated employees that Type A behaviour will enhance their chances of promotion.

Finally, gender appears to be associated with the TABP. Females are considerably less likely to be Type A than males, although working females are significantly more likely to be Type A than housewives [Chesney and Rosenman, 1980].

4.3.2 Core Behaviours of the Type A Behaviour Pattern

Achievement striving appears to be an important ingredient in the overall make-up of a Type A individual. Glass [1977a, 77b] found, for instance, that Type A college students earned significantly more academic honours and had higher aspirations on leaving college relative to Type B students. Type As tend to back up this achievement orientation with a competitive and hard-driving style. Type As tend to work "hard" regardless of time pressures. For example, Glass [1977a, 77b] reported a study which found that Type A student subjects tended to perform at the same elevated level regardless of whether or not there was a time limit on the experimental task. Type Bs, on the other hand, only performed at the level of Type As when a task deadline was present. Chesney and Rosenman [1980] summarise several studies which show Type As to have greater physiological

reactivity relative to Type Bs in completing tasks which are perceived as “challenging or salient” [p. 199]. Lastly, Snow [1978]⁴ found Type As to have consistently higher aspirations prior to performing experimental tasks, despite their actual task performance being similar to that of Type Bs.

The Type A's uncompromising approach apparently leaves no room for feelings of fatigue, which might otherwise interfere with their achievement orientation and hard-driving approach to work. Research suggests Type As have a tendency to suppress feelings of fatigue. For example, using a treadmill test, Glass [1977a, 77b] found that Type As worked at levels closer to their endurance limits than did Type Bs, yet reported lower levels of fatigue.

Time urgency is another salient feature of the TABP. Glass [1977a, 77b] found that Type As reliably underestimate the passage of time. Further, when faced with delays, it appears that the Type A individual becomes very impatient. Often this impatience has an adverse effect on performance, particularly when good performance requires a non-immediate and measured response. In the same study, Glass conducted an experiment in which good performance required a delayed response. Not surprisingly, Type As were consistently unable to wait long enough before responding to stimuli. Glass also observed that 48% of Type As and only 12% of Type Bs showed tense and hyperactive movements during the experimental session.

Lastly, Type As have been associated with hostility and aggressiveness. However, the former is generally kept under deep cover [Glass 1977a, 77b]. In a further experiment, Glass noted that Type As were more likely than Type Bs to react with enhanced hostility towards someone who interfered with or blocked their attempts to perform a difficult task. Hostility in this study was measured by the strength of an electrical shock administered to the harassing individual.

⁴ As cited by Chesney and Rosenman [1980].

4.4 Consequences of the Type A Behaviour Pattern

4.4.1 *Physiological Consequences of Type A Behaviour*

The link between the TABP and CHD established by the Western Collaborative Group Study and subsequent studies (e.g., Caplan et al. [1975]) gained formal recognition in 1978 when a panel of the National Heart, Lung and Blood Institute⁵ accepted:

the available body of scientific evidence as demonstrating that Type A behavior ... is associated with an increased risk of clinically apparent CHD in employed, middle-aged U.S. citizens. This risk is over and above that imposed by [traditional risk factors] and appears to be of the same order of magnitude as the relative risk associated with any of these factors.

However, the actual physiological mechanisms by which the TABP causes CHD remains unclear. Many studies have found associations between the TABP and traditional risk factors such as high levels of serum cholesterol [Glass, 1977a, 77b; Howard et al., 1977; Rosenman, 1986] and systolic blood pressure [Glass, 1977a, 77b; Howard et al., 1977; Matthews, 1982]. Some researchers believe, however, that discharge from the sympathetic nervous system and the release of hormones such as adrenalin and noradrenaline in response to aversive external stimuli play a crucial pathogenic role in Type As' coronary risk [Glass, 1977a, 77b; Matthews, 1982; Rosenman, 1986]. Both adrenalin and noradrenaline are hormonal substances called catecholamines that can "... accelerate the rate of arterial damage and, indeed, induce myocardial lesions" [Glass, 1977b, p. 178].

Interestingly, physiological reactions such as these have not been found among Type As in all

⁵ As cited by Chesney and Rosenman [1980, p. 191]

experimental studies. This has led to speculation that these reactions only occur in certain situations, in particular, those which are perceived by Type As as frustrating, difficult, and/or moderately challenging [Davidson and Cooper, 1980; Matthews, 1982]. This is consistent with the notion that the external environment plays a key role in eliciting the TABP. Support for this view is provided by Cohen [1978] who found that, having undergone cultural change, Type A Japanese men now resident in Hawaii were considerably more likely to develop CHD than Type B Japanese men resident in Hawaii, and both Type A and B Japanese men living in Japan. Interpreting this study, Rosenman [1986] claims that Japanese society differs from most Western societies in that individual competitiveness is replaced with "... an emphasis on group cooperation and social network support" [p. 16].

Suppression of fatigue may also contribute to the association of the TABP and CHD, particularly if early symptoms of CHD are ignored. Fatigue suppression by Type A individuals may also explain why Type As are more prone to illnesses, such as respiratory, acute gastrointestinal, and non-specific viral illnesses, when working in high stress occupations relative to Type Bs [Rose et al., 1978]. Although Type A air traffic controllers were more prone to illness than Type Bs in this study, Rose et al. found Type Bs more prone to hypertension.

4.4.2 Occupational Consequences of Type A Behaviour

Early Type A researchers were of the opinion that the Type A's high achievement motivation and job involvement, together with their hard-driving and competitive approach to work, would not necessarily lead them to consistently outperform Type Bs in the workplace. For example, Friedman and Rosenman [1974, pp. 85 - 86] believe that:

- (1) a sense of job or position *responsibility* is not synonymous with the Type A's sense

of time *urgency*; (2) excessive drive or competitive enthusiasm may only too frequently be expended upon economic trivia rather than affairs of importance; and (3) promotion and elevation, particularly in corporate and professional organizations, usually goes to those who are wise rather than to those who are merely hasty, to those who are tactful rather than to those who are hostile, and to those who are creative rather than to those who are merely agile in competitive strife.

Empirical studies have, however, yielded inconsistent results with respect to the TABP-vocational performance linkage. Several studies using students, university lecturers and sales people have found significant positive correlations between Type A scores and relevant measures of performance, such as grade point average, number of publications/citations, and number of listings/sales, respectively [Herried et al., 1985; Matthews et al., 1980; Waldron et al., 1980]. However, in general “results from studies in organizational settings consistently show insignificant or weak relationships between Type A behavior and job performance” [Bluen et al., 1990, p. 213].

Several researchers have sought to explain these indifferent results. A contingency argument has been advanced by a number of writers. Herried et al. [1985], for instance, argue that although they had hypothesised and found a positive correlation between Type A scores and real estate agent performance, the results may not be generalisable to work positions for which “... commitment to a particular company, ability to cooperate with other organization members; or willingness to accept control from within the organization are necessary” [p. 65]. Matthews [1982] analysed the extant Type A-performance literature and concluded that, consistent with the achievement-striving aspect of the TABP, Type As would be expected to outperform Type Bs “... in difficult situations that call for [reasonable levels of] persistence or endurance” [p. 301]. Matthews considers difficult situations to be those involving fatigue, external distractions, and/or continued performance after a brief salient failure. In contrast, consistent with the time urgency and impatience aspects of the TABP, Type Bs would be expected to outperform Type As on tasks requiring slow careful responses, a broad focus

of attention, or continued performance after prolonged salient failure⁶. Lastly, some researchers argue that inconsistent findings are the result of researchers not considering the multidimensional nature of the Type A construct. These researchers believe that subdimensions of the Type A construct may have differential effects on job performance and should therefore be considered separately. This issue will be discussed further in the following section.

Job performance is not the only work-related variable affected by the TABP. Using a sample of managers, Howard et al. [1977] conducted a study to determine how various work habits and other job-related variables were associated with the TABP. Their findings revealed that the Type A managers sampled tended to work longer hours, travel more, and be more likely to be employed in high growth companies than Type B managers. Also, relative to Type Bs, Type As were not significantly less satisfied with their jobs, had greater self-confidence in that they did not feel “locked-in” to their jobs, and felt lower job contentment (as measured by supervisory responsibility for others, a feeling of competition in work, conflicting demands, and heavy workloads). The relationship between Type As and perceived work overload has been confirmed by several other studies [Caplan and Jones, 1975; Chesney and Rosenman, 1980], however, the extent to which Type As self-impose workload is still unclear [Davidson and Cooper, 1980]. Also, Chesney and Rosenman [1980] are not surprised by the finding that Type As are not significantly less satisfied with their jobs than Type Bs despite relatively high perceived workloads, responsibilities, conflicting demands, and competition. They argue that this is precisely the environment that Type As thrive on.

Other work-related studies suggest that Type As perceive their employers to have greater “... expectations for the quantity and quality of work performed” [Chesney and Rosenman, 1980, p. 192] relative to Type Bs; and that Type As are more involved in their jobs [Davidson and Cooper, 1980], and experience more role stress, job stress, and turnover cognition [Jamal and Baba, 1992] compared

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The significance of the prolonged salient failure will become apparent when the controllability conceptualisation of the Type A construct is discussed in a subsequent section.

with Type Bs. A recent study has also found that Type As possess characteristics that make them more prone to escalating commitment than Type Bs [Schaubroeck and Williams, 1993].

4.4.3 *Multidimensionality of the Type A/B Construct*

The multidimensional nature of the Type A/B construct has been a source of concern for some researchers. Sparacino [1979] discusses this problem in terms of “entitativity” - the degree to which something has the nature of an entity. Quoting Campbell [1972], Sparacino [p. 39] argues that, in terms of relative entitativity, theoretical constructs can lie anywhere on a continuum between a “... ball of adamant - unbreakable, immutable, homogenous as to substance and color” and a “... crumbling clod of dirt”. According to Sparacino, the clod of dirt represents a construct very low on entitativity - one which “... lacks a clearly defined boundary, completeness, and good figure” [p. 39], and it is this end of the continuum that Sparacino believes that one would most likely find the Type A/B construct. Some argue that certain anomalous results in Type A research are, in fact, manifestations of this concern. For instance, it is evident from several reviews of the Type A literature [Booth-Kewley and Friedman, 1987; Chesney and Rosenman, 1980] that, as with other risk factors, not all Type As will develop CHD. Chesney and Rosenman [1980] contend that it is likely that only certain components of the TABP are likely to be responsible for the eventual onset of CHD. A similar argument has been advanced by Spence et al. [1987], Helmreich et al. [1988], and Bluen et al. [1990], to explain why not all Type As outperform Type Bs.

Spence et al. [1987] undertook psychometric analyses of student responses to the Jenkins Activity Survey (JAS), the most frequently used self-report measure of the TABP, and identified two key dimensions of the TABP. These dimensions are achievement striving (AS) and impatience and irritability (I/I). These two dimensions appear to have differential effects on performance and aspects of an individual's health and, therefore, may have important practical implications. For example,

Spence et al. found that AS was positively associated with students' grade point averages, but unrelated to measures of their health, such as sleep quality, headaches, digestion, and respiratory problems. On the other hand, I/I was negatively associated with measures of health, and unrelated to student performance. In the same study the global Type A scale was positively associated with performance, while negatively related to only some of the health measures.

Using two seven item scales to represent AS and I/I, respectively, Helmreich et al. [1988], extended the work of Spence et al. to a non-student sample. The researchers found that AS was significantly correlated with both the number of citations and publications for a sample of members of the Society for Experimental Social Psychology, while I/I was unrelated to these two performance indicators. The AS and I/I scales developed by Helmreich et al. [1988] were also used in a later study by Bluen et al., [1990] in which work performance (number of insurance policies sold), job satisfaction, and depression measures were correlated with AS and I/I. As hypothesised, AS was positively related to performance and job satisfaction, and unrelated to depression. I/I was unrelated to performance and positively related to depression. The researchers had expected that the work-related component of the TABP (i.e., AS) rather than the negative emotional component (i.e., I/I) to be associated with work-related attitudes, such as job satisfaction, however, I/I was found to be negatively correlated with job satisfaction. With the exception of the inclusion of a proof-reading performance test, Barling and Charbonneau [1992] replicated Spence et al.'s [1987] study. The researchers found AS positively related to grade point average, but not related to performance in the proof-reading exercise. I/I was unrelated to performance, but associated with sleeping habits and headaches. However, unlike Spence et al., no link was found between I/I and both respiratory infections and digestion problems. Lastly, Lee et al. [1993] confirmed the AS-academic performance link, as well as finding a positive association between AS and problem-focused stress coping strategies; and problem-focused coping strategies and both academic performance and job satisfaction. I/I was significantly negatively associated with problem-focused strategies.

Although many of the previously mentioned researchers argue that AS and I/I are independent constructs - which would cast serious doubt on the usefulness of a global Type A/B construct - closer examination of their results indicates a consistently significant correlation between the two dimensions. For example, Helmreich et al. [1988], Bluen et al. [1990], Barling and Charbonneau [1992], and Lee et al. [1993] report significant correlations between AS and I/I of 0.37, 0.33, 0.31, and 0.32, respectively. It should be noted, however, that all of the studies cited measure performance relative to activities/occupations to which prior research identifies Type As as being well suited⁷. Interestingly, the only study in the AS-I/I stream of literature to use a generic superior-rated measure of performance across a diverse range of occupations found that the relationship between AS and performance was not statistically significant [Lee, 1992].

4.5 The Interplay of Job Stress and Type A Behaviour

As previously discussed, researchers became aware of the critical role of the external environment in eliciting the TABP in susceptible individuals at a relatively early stage in the development of the Type A construct. Recent research suggests that conditions found in the work environment are most responsible for elicitation of the TABP [Davidson and Cooper, 1980]. Howard et al. [1977], for example, found that job conditions such as supervisory responsibility for others, a feeling of competition in work, heavy work loads, and conflicting demands, all facilitated the TABP in vulnerable individuals. It should be apparent from this discussion that the TABP can be related to prevalent theories of job stress. For instance, the person-environment fit theory [Caplan et al., 1975; Harrison, 1978] suggests that job stress is the result of the interaction of the environment and the individual. Where there is "... a lack of fit between the demands of the job and the worker's skills and

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Herried et al. [1985] considered Type As to be suited to positions that provided significant latitude for initiative, were autonomous, and did not require extensive cooperation with other organisational members.

abilities, and/or a lack of fit in the degree to which the job supplies the worker's personal needs” [Chesney and Rosenman, 1980, p. 203] occupational stress will arise, manifesting itself in the form of psychological distress, impaired job performance, and/or pathophysiological problems. Relating the TABP to this model, Ivancevich et al. [1982, p. 376] argue that:

For an individual with a Type A pattern, characterized by competitiveness, a constant struggle against time, an achievement-orientation, and an intense sense of urgency, a discrepancy might arise when the work environment is not matched by these behaviors. An environment that is ambiguous, hinders achievement because of excessive role conflict, and includes supervisors who discourage competitiveness would not fit well with the Type A pattern individual. Thus, the discrepancies between the environment and the person would be found in an increase of peculiar signs and symptoms at the psychological level (e.g., lower job satisfaction), at the physiological level (e.g., increase in blood pressure), and an increase at the organizational level (e.g., increased absenteeism).

In this context, the TABP can be seen as a means of coping with environmental stressors. Several researchers have tried to conceptualise the TABP in order to explain why Type As cope with stressors via Pattern A and not other patterns of behaviour. It appears that Glass [1977a] provides “the most systematic and comprehensive effort to conceptualize Pattern A” [Matthews, 1982, p. 308]. Glass [1977b] asserts that Type As respond with their characteristic behaviour in an effort to assert “... control over environmental demands and requirements” [p. 181]. Glass developed the controllability conceptualisation based on the results of a series of laboratory studies. The first of Glass's studies revealed that exposure to an uncontrollable, but moderate, stressor (loud noise) in a pretreatment was sufficient to motivate Type As to significantly improve their performance on a subsequent experimental task in the “test phase” of the study relative to (1) Type Bs who participated in the same pretreatment; and (2) Type As who participated in a pretreatment in which subjects were

able to control the stressor (i.e., escape the noise). Type Bs who were exposed to the uncontrollable stressor in the pretest, performed significantly worse than those Type Bs who participated in the pretest that allowed subjects to escape from the stressor. The “test phase” in this study had required subjects to react quickly to a delayed stimulus (i.e., a reaction time task). These relationships were replicated by a second study whose “test phase” required completion of a DRL (differential reinforcement of low rates of responding) task in which an appropriately delayed response was correct. Perceived lack of control in this study was manipulated “... by random positive and negative reinforcements (i.e. 'correct' or 'incorrect' evaluations) for attempts to solve two cognitive tasks” [Glass, 1977b, p. 182]. Based on these results, Glass claimed that the TABP is merely a strategy for coping with uncontrollable stressors.

A different pattern of results emerged in a related laboratory study conducted by Krantz et al. [1974]. In this study it became apparent that the relationship between the degree of control Type As have over environmental stressors and their performance was more complex than first thought. This study established that uncontrollable environmental stressors would not motivate Type As to perform at enhanced levels if (1) Type A individuals are exposed to an uncontrollable stressor for extended periods of time and (2) the stressor is a highly salient feature of their environment [Glass, 1977b]. In these situations, Type As tend to give up efforts to regain control of their environment, instead resigning themselves to the fact that efforts to regain control will be ineffective in the long run. Glass [1977a, 77b] believes this to be an illustration of Seligman's [1975] learned-helplessness paradigm. Interestingly, Chesney and Rosenman [1980] propose an alternative explanation to the Type A's learned-helplessness. They argue that:

by intentionally reducing the salience or importance of the task, and electing not to perceive it as a challenge, they make their failure less important - a version of the sour grapes fable. [p. 201]

Glass's [1977a, 77b] conceptualisation of the TABP has been confirmed in several later studies. For example, Pittner et al. [1983], using a similar research method to that employed by Glass, investigated whether Type A and B subjects differed in terms of physiological responses and their use of denial and/or projection cognitive coping strategies in the face of conditions that varied according to their controllability and consistency. Results indicated that the main physiological differences between Type As and Bs arose in situations where subjects had consistent control over the environmental stressor (electric shock) as opposed to intermittent or no control. The researchers argue that this finding is consistent with Glass [1977a, 77b] because:

Type A individuals are more threatened by potential loss of control over stressful events than are Type B individuals, and the potential loss of control over a stressful event (viz., shock) was threatened in the consistent control condition by virtue of the controlling response (successively repeating digits backward) being very difficult. [p. 636]

The researchers also found that Type As used reliably more denial and projection than Type Bs as a means of cognitively coping with stress.

Dembroski et al. [1978] describe an earlier study in which it was found that Type As, more so than Type Bs, prefer to wait in the company of others while waiting to perform a difficult task. However, during execution of the task, a higher proportion of Type As than Type Bs prefer to work alone. The authors argue that prior to the task, the Type A uses contact with others to glean as much information about the task as possible, in order that they may regain control of the situation. A desire to work alone may also reflect an attempt to gain maximum control over their work.

Also consistent with the controllability argument were the results of a study conducted by Cooney and Zeichner [1985]. These researchers hypothesised that more Type As than Type Bs would pay selective attention to negative feedback concerning threatening personal information because of the

latter's obsession with maintaining control over their respective environments. To test their hypothesis, 380 student subjects were each left in a room by themselves and told that the first pile of cards in front of them represented positive assets (e.g., sincerity, good natured, etc.) while the second pile represented negative liabilities (e.g., overcautious, self-centred, etc.). Subjects were told before being left alone that these assets and liabilities were based on a personality questionnaire completed by the subject earlier in the day. This was, however, untrue - the cards in each pile were the same for each subject. Each card was numbered, and subjects needed to refer to a code book on the desk in front of them to find the positive or negative trait. As expected more Type As (62.5%) initially chose the pile of negative personal liabilities to study than Type Bs (25%). Further, Type As spent significantly more time examining the negative liabilities pile than Type Bs.

Sanders and Malkis [1982] investigated the implications of Glass's [1977a, 77b] controllability argument for group participation and decision making. Consistent with the Type A's need for control motivation, the investigators found that Type As were more likely than Type Bs to be seen as leaders in group problem-solving sessions. The researchers argued that Type As would be motivated to become leaders because situations in which group discussions encourage multiple inputs concerning issues at hand are likely to threaten their sense of being in control. Contrary to expectations, Type As who were not perceived as leaders were less likely to be seen as the least helpful group members than Type Bs. This was an interesting finding as one might have expected these Type As to give up and withdraw from the group. Lastly, problem solutions developed by Type A leaders were rated as lower in quality relative to those developed by Type B leaders. This most likely reflects the fact that a Type A's attempt to gain control of a group will usually occur through monopolising group discussions or by acting as an organiser. Neither of these are considered by Sanders and Malkis to be conducive to the development of quality problem solutions based on free and frank discussions within the group.

Lee et al. [1990] provide one of the few controllability studies to be performed outside the laboratory.

In this study the researchers surveyed four diverse groups of individuals, including industrial hygienists, internal auditors, nurses, and 18 full-time employees attending the classes of one of the researchers. In their study, Lee et al. found that perceived control was a significant moderator of the Type A-job performance, Type A-job satisfaction, and Type A-somatic complaints relationships. In particular, when Type A individuals perceived they had significant control over their environment, they performed better and were more satisfied with their jobs than Type Bs. The positive interaction effect of perceived control and the TABP on somatic complaints may reflect the fact that, in situations in which Type As feel in control, they no longer experience the need to suppress feelings of fatigue and symptoms of potential health problems.

4.6 Changing Type A Behaviour

The fact that the TABP has been associated with adverse cognitive, physiological, and behavioural consequences under certain conditions has created a fear, particularly among Type As, that attempts will be made to change Type As into Type Bs [Davidson and Cooper, 1980]. However, there are several reasons why this fear is unwarranted. Firstly, the TABP is a general life-style, as opposed to being a specific behaviour. Therefore, as Roskies [1980] points out, behaviour change techniques are unlikely to be of use in modifying the behaviour of Type As in the long term. In fact, these techniques have had only moderate success in modifying specific behaviours, such as eating, smoking, and drinking. Secondly, there are aspects of the Type A's behaviour that are congruent with social values, such as ambition, achievement striving, goal-directedness, and time-urgency. Indeed, these behaviours are frequently encouraged and rewarded in our society, making any successful permanent and comprehensive change in the TABP unlikely, particularly when this change is not accompanied by a major change in the Type A's environment [Roskies, 1980]. Thirdly, as discussed earlier, Type As may outperform Type Bs in certain work situations, albeit at the expense of their health. Any modification in Type A behaviour may, as a result, have a significant impact on the quantitative and

qualitative output of many organisations. Lastly, it would be difficult to implement such a comprehensive change in the Type A's lifestyle without having the effect of stripping the Type A of his/her habitual coping strategies, which, in turn may "... render the person passive and helpless, and hence [is] likely to arouse the very anxiety the individual is seeking to avoid" [Roskies, 1980, p. 317].

Other less ambitious approaches to moderating the TABP include pharmacological modification, which has been found to reduce coronary-prone Type A behaviour [Rosenman, 1986]; suppression of environmental stressors, such as role ambiguity and role conflict [Roskies, 1980]; directly changing "... the individual's perceptions of and emotional responses to potentially threatening situations with the aim of making it less necessary for him or her to mobilize" [Roskies, 1980, p. 316] by attacking the Type A's underlying beliefs; or teach the Type A new and less harmful stress coping strategies, such as muscle relaxation, meditation, yoga, biofeedback, anxiety management, stress inoculation, autogenic training, etc. Roskies [1980] reports some success in using the latter approach to mitigate the adverse features of the TABP. The researcher taught a sample of Type A subjects a particular series of muscle relaxation techniques, which subjects were required to employ after experiencing certain cues, such as the telephone ringing at work, or a disagreement with co-workers. After the 14 week program was completed, subjects reported significant feelings of increased control and increased well-being. Also, subjects reported that their newly learnt techniques increased their efficiency at work.

Although still at an early stage, the current trend in the Type A literature towards determining specific subdimensions of the Type A construct (e.g., the work of Spence et al. [1987] and others) may well lead to a considerable refinement of techniques designed to modify the TABP in future years.

4.7 Summary

This chapter has attempted to bring together the diverse literature concerning the Type A behaviour pattern (TABP) with particular emphasis being given to the relationship between the TABP and both the work environment and work-related stress.

A review of the literature determined that the initial identification of the TABP was the product of research conducted in the 1950s and 1960s aimed at discovering new and independent risk factors of coronary heart disease. This research differed from traditional epidemiological studies in that it examined socioeconomic and psychosocial factors, rather than physiological factors alone. This stream of research established the TABP to be a consistent syndrome of behaviours representing a stress coping strategy employed by certain susceptible individuals in response to challenging environmental stimuli. Examples of environmental factors contributing to the elicitation of the behaviour pattern include excessive role ambiguity and conflict, work overload, superiors who do not encourage competition and/or participation, and poor relationships at work. Achievement striving, competitiveness, time-urgency, hostility, aggressiveness, irritability, and impatience have all been confirmed by research as typical coping behaviours of Type A individuals under stress. In the sense that these overt behaviours only manifest themselves in stressful situations, Type As can be described as “hyperreactive” to environmental stressors.

Although Type As have been found to work longer hours, travel more, and be more confident about their own abilities than Type B individuals in occupational settings, the research surveyed in this chapter did not conclusively support the notion that Type As consistently outperform their Type B counterparts. A contingency argument was put forward by several researchers to explain these inconclusive results. They suggested that Type As are likely to outperform Type Bs on difficult tasks requiring endurance, or in situations following a brief yet salient failure. However, Type As may be outperformed by Type Bs when a slow, measured response is required, or after prolonged exposure

to a salient failure.

A comprehensive, and now widely accepted, conceptualisation of the Type A construct was also identified in this chapter. It suggests that Type As are motivated by a strong desire to control their environment [Glass, 1977a, 77b]. People, events, and/or situations that are perceived to threaten the Type A's sense of control are likely to rouse the Type A behaviour characteristic of these individuals. However, in the face of prolonged exposure to a salient and uncontrollable stressor, Type As have been found to demonstrate a propensity to suspend all efforts directed towards regaining control. This, Glass [1977a, 77b] claims, is an example of learned helplessness, or "hyporeactivity" in the face of an uncontrollable stressor.

Lastly, several promising new threads in the Type A literature were identified. For example, much recent research effort has been expended on trying to determine whether specific subdimensions of the TABP can be clearly identified, and be differentially associated with various Type A outcome variables ranging from job performance to health and somatic complaints. Also, ongoing research in the area of Type A behaviour modification and moderation was discussed.

Chapter 5

The Research Model

5.1 Introduction

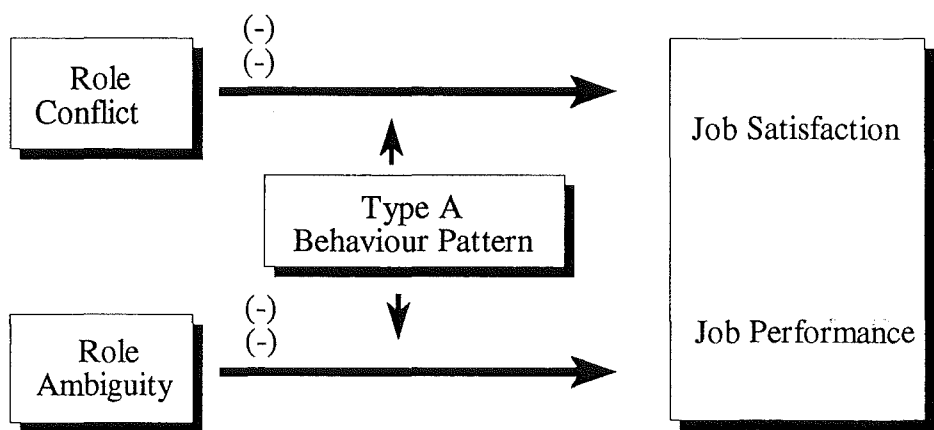
The preceding chapters provided a detailed review of the variables subject to investigation in this study, i.e., role conflict, role ambiguity, job satisfaction and performance, and the Type A behaviour pattern. The purpose of this chapter is to specify the hypothesised relationships among these variables. This will be achieved through a diagrammatic representation of the research model, together with formal delineation of the research study's hypotheses.

5.2 Theoretical Framework

The role episode model [Kahn et al., 1964] provides the underlying theoretical framework for the proposed study. The vast majority of role stress studies subsequent to the seminal work of Kahn et al. [1964] have been based on their theoretical foundations [Van Sell et al., 1981]. The precise nature of the relationships to be investigated in this study are presented in Figure 5.1.

FIGURE 5.1

RESEARCH MODEL DEPICTING HYPOTHESISED RELATIONSHIPS



Each of the model's variables have been discussed in detail in prior chapters. Following Jackson and Schuler's [1985] recommendation, the consequences of role conflict will be investigated separately from role ambiguity. These researchers suggest that, as the two elements of role stress have been shown to be distinct constructs, separate hypotheses should be stated for each. This view is consistent with the earlier findings of Rizzo et al.[1970].

5.3 Hypotheses

5.3.1 Role Stress and Job Performance

Strong arguments have been presented in the literature in support of a negative relationship between

job performance and both role conflict and role ambiguity. For instance, Jackson and Schuler [1985, pp. 42 - 43] argue as follows:

From a cognitive perspective, performance should be hindered by role ambiguity and role conflict because with them the individual faces either a lack of knowledge about the most effective behaviors to engage in or an almost impossible situation for doing everything expected. Therefore, regardless of the amount of effort expended behaviors are most likely to be inefficient, misdirected, or insufficient.

Further, based on expectancy theory [Vroom, 1964], the researchers suggest that:

... a motivational perspective would predict that performance should be negatively correlated with role ambiguity and role conflict because they are negatively associated with effort-to-performance and performance-to-reward expectancies. [p. 42]

With respect to the latter viewpoint, Jackson and Schuler's conclusion is not dependent on the use of expectancy theory [Vroom, 1964]. For example, Locke and Latham [1990] provide an alternative theory of human motivation which "... assumes that goals (ideas of future, desired end states) play a causal role in action" [p. 2]. Goal theory argues that performance is positively and directly influenced by personal goals and self-efficacy. Self-efficacy is described as an "... individual's *overall* or total judgement of performance capability, considering all relevant information (e.g., self-assessment of ability, planned effort, attributions, beliefs about one's capacity to coordinate skills, find ingenious solutions, cope with stress, etc.)" [Locke and Latham, 1990, p. 115, emphasis in original]. The extent to which personal goals influence performance, however, depends on an individual's ability and goal commitment, the amount of feedback received, task complexity, and situational constraints. Lock and Latham [1990] show that expectancy theory can be readily reconciled with goal theory. For instance, lower effort-to-performance expectancies are likely to be

associated with lower self-efficacy, which, in turn, will both directly and indirectly reduce performance. The indirect effect results from a positive association between self-efficacy and personal goals. Lower performance-to-reward expectancies are likely to lead to the setting of less demanding personal goals and lower goal commitment - both of which may impair performance. Hence, the effects of role stress on performance are likely to be similar regardless of whether expectancy theory or goal theory is used.

The following hypotheses, stated in alternative form, are proposed concerning the relationship between role stress elements and performance:

H_A1: Perceived role ambiguity is significantly negatively associated with auditor job performance.

H_A2: Perceived role conflict is significantly negatively associated with auditor job performance.

5.3.2 *Role Stress and Job Satisfaction*

Job satisfaction arises when an individual perceives his or her job as fulfilling values that are considered important to that individual [Locke, 1976, 84]. Alternatively, job dissatisfaction results when a job, for whatever reason, fails to fulfill job-related values. As role clarity and harmony (the opposites of role ambiguity and role conflict, respectively) are generally valued [Locke and Latham, 1990], one would expect them to be associated with job satisfaction when found in the work environment. Conversely, one would expect the existence of perceived role ambiguity and role conflict to be associated with job dissatisfaction (lower job satisfaction).

Consequently, the following hypotheses, stated in alternative form, are proposed concerning the relationship between role stress elements and job satisfaction:

H_{A3}: Perceived role ambiguity is significantly negatively associated with auditor job satisfaction.

H_{A4}: Perceived role conflict is significantly negatively associated with auditor job satisfaction.

5.3.3 *Type A Behaviour Pattern as a Moderating Variable*

According to the role episode model [Kahn et al., 1964], two individuals holding identical positions and exposed to the same degree of (objective) role stress may each perceive role stress quite differently. The model posits that differences in each person's age, needs, values, education, etc., will lead to different perceptions and responses to role stress. The Type A personality was not established in the literature until several years after the seminal work of Kahn et al. [1964], but, ironically, has subsequently been found to be one of the few personality-related variables to consistently moderate the relationship between role stress and role stress outcomes [Jackson and Schuler, 1985].

It will be recalled that Glass's [1977a, 77b] controllability conceptualisation of the Type A behaviour pattern suggests that Type As are strongly motivated to maintain control over their environment. Although this may lead to enhanced performance in situations where Type As face moderate levels of stress, prolonged exposure to a salient and uncontrollable stressor is likely to lead to decrements in task performance as Type As exhibit learned helplessness. Lee et al. [1990] confirmed this relationship in a number of diverse occupational settings. The researchers found that perceived control over one's environment significantly and positively interacted with the Type A behaviour pattern to facilitate both job performance and job satisfaction. These findings led Lee et al. [1990, p. 877] to recommend that:

in order to motivate highly competitive, achievement-orientated Type A individuals, organizations and supervisors should consider taking steps to increase their perceived control. Such steps might include reducing *role ambiguity* and *role conflict*, participatively setting goals with these individuals, placing them in relatively autonomous jobs, and providing them with tasks in which they have a high degree of control over work scheduling and work methods. [emphasis added]

The significance of role stress elements in influencing an individual's perceived sense of control over his/her environment has also been emphasised by other writers. For instance, Davidson and Cooper [1980] claim that role conflict and role ambiguity are among the sources that contribute most to stress in the work situation, and "... may lead to decreased levels of perceived control" [p. 378]. It seems reasonable, then, to expect that the Type A behaviour pattern will intensify the negative relationship between role stress elements and job performance.

A similar intensification of the negative relationship between role stress elements and job satisfaction is also expected for the following reason. Brunson and Matthews [1981] conducted a laboratory study which investigated how the coping strategies of Type As and Bs, respectively, change over a period of time when a salient uncontrollable stressor gradually becomes part of their immediate environment. The researchers found that unlike Type Bs, Type As tended to move away from useful problem solving strategies (i.e., ones that will eventually lead to problem solutions) towards ineffective strategies (i.e., ones that will never lead to problem solutions). In addition, Type As blamed their continued failure on their stupidity and lack of ability. Throughout the study Type As became increasingly annoyed and frustrated. According to the researchers, these factors combined to lead Type As to learned helplessness, i.e., giving up and acting helpless. The significance of these findings for the current study lies in the fact that they indicate that the dynamic process that occurs in Type As when faced with salient and uncontrollable stressors involves a shift from effective problem-focussed strategies to other less effective strategies. As problem-focussed strategies have

been positively associated with job satisfaction [Latack, 1986], it would be expected that the Type A behaviour pattern will intensify the negative relationship between the uncontrollable stressors (role conflict and role ambiguity) and job satisfaction.

Accordingly, the following hypotheses, stated in alternative form, will be investigated:

H_{A5}: Type A personality significantly moderates the relationship between role ambiguity and auditor job performance.

H_{A6}: Type A personality significantly moderates the relationship between role conflict and auditor job performance.

H_{A7}: Type A personality significantly moderates the relationship between role ambiguity and auditor job satisfaction.

H_{A8}: Type A personality significantly moderates the relationship between role conflict and auditor job satisfaction.

5.4 Summary

The objective of this chapter was to specify the hypothesised relationships among the variables of interest to the current study.

In summary, both elements of role stress are expected to be negatively associated with both job

satisfaction and auditor job performance. Further, these relationships are expected to be intensified for individuals exhibiting the Type A behaviour pattern.

The next chapter will outline the research method employed by this study.

Chapter 6

Research Method

6.1 Introduction

This chapter outlines the research method employed in the study to test the hypotheses established in the previous chapter. The chapter begins with a description of the way in which the study's sample data were obtained. Next, a detailed and critical discussion is presented concerning each of the specific measurement instruments used in the study. The chapter concludes by describing the inferential statistical techniques used to investigate the study's hypotheses.

6.2 Sample and Procedure

Data for the study were collected by way of a survey questionnaire administered to auditors in two of the "Big-Six" public accounting firms in New Zealand. The anonymity of the two participating firms was guaranteed due to the potentially sensitive nature of the research findings. Consequently, these two firms will be referred to as Firm A and Firm B, respectively.

Given the personal and possibly sensitive nature of several of the study's variables, it was deemed

important to consider various means of maximising the survey's response rate. To this end, a number of specific strategies were implemented as part of the survey procedure.

Firstly, a modified version of Dillman's [1978] Total Design Method (TDM) was followed. This method specifies various procedures and methods that should be followed in order to maximise the quantity and quality of survey responses, and is based on a "... theoretically based [(social exchange)] view of why people do and do not respond to questionnaires and a well-confirmed belief that attention to administrative details is essential to conducting successful surveys" [Dillman, 1978, p. viii]. The TDM addresses the writing, construction, and implementation of mail surveys, and goes into specific details concerning such issues as the design and layout of the research instrument, the appropriate way to assemble the mailout package, the contents of the covering letter, and the timing of follow-ups. Dillman [1978] reports that the average response rate in the 22 studies that had implemented modified versions of the TDM prior to his book being written was 71%.

Secondly, the covering letter included in each mailout package emphasised the fact that the results of the survey were to be completely confidential, and that anonymity was guaranteed. Both the covering letter and the questionnaire explicitly asked the subjects not to place their names on completed questionnaires.

Thirdly, a letter was obtained from the sponsoring partner of each of the participating firms, which expressed their support for the research project and encouraged the subjects to respond. A copy of the appropriate partner's letter was sent with every mailed survey instrument.

Lastly, an inducement was used to encourage prompt completion and return of the research instrument. Subjects were told that if they wished to enter a prize draw for a book, then they had to write their names on the back of the enclosed prepaid return envelope (and not the research instrument itself) and return the survey instrument within two weeks. One prize draw was held for

each participating firm.

Pilot testing was performed prior to the mailing of the survey instruments. This involved the distribution of a draft survey instrument to eight academic colleagues, together with partners from Firm A, Firm B, and one other accounting firm. This process resulted in several minor wording changes to the questionnaire.

The final version of the research instrument was mailed in late April and early May of 1995. Given that 30 March is a common balance date for many accounting entities in New Zealand, most auditors would have been engaged in at least one audit at this time¹. The mailout package included a covering letter (see Appendix A), a copy of the sponsoring partner's letter of support, the research instrument, and a prepaid return envelope.

Two weeks after the original mailing, a follow-up letter was sent to all subjects. This letter thanked subjects if they had already returned their questionnaires, and encouraged the prompt completion and return of survey instruments for those that had not already done so. Consistent with Dillman's TDM, the letter made an appeal to non-respondents on the grounds that it was important that all questionnaires be completed and returned in order for the results of the study to accurately represent the perceptions of external auditors. The vast majority of completed questionnaires were returned by the first week of June.

In total, 122 survey instruments were sent to all auditors with at least twelve months auditing experience in the three largest New Zealand offices of Firm A. The subjects were determined from staff lists that had previously been sent to the researcher by each of the three participating offices.

¹ Had the survey been administered at a time when many auditors were not working on audit engagements, a bias could have been introduced as a consequence of those auditors not being able to accurately remember the degree to which they had experienced role stress on prior audit assignments.

In all, 88 questionnaires were returned, representing an overall response rate of 72% for Firm A. Of these, four were not usable due to incomplete responses. This led to an effective response rate for Firm A of 69%. In total, 47 survey instruments were sent to auditors in Firm B who also met the twelve month criterion. The participating offices of Firm B were in the same three cities as those of Firm A. Firm B, however, did not provide access to all qualifying auditors in these three offices. Two of the three participating offices agreed to supply a representative sample of 20 auditors only. This meant that 20 auditors were surveyed from each of two offices, while seven were surveyed from the remaining office. In all, 35 completed questionnaires were returned, representing an effective response rate for Firm B of 74%.

In summary, then, 169 survey instruments were mailed to selected offices in Firm A and Firm B. In total, 123 completed instruments were returned, yielding an overall response rate for the study of 73%. After four unusable responses were taken into account, the survey procedure resulted in an effective response rate of 70%. This result is reasonably consistent with similar studies in the auditing literature. For example, Senatra [1980, 88], Bamber et al. [1989], and Rebele and Michaels [1990] had effective sample sizes (response rates) of 88 (82%), 91 (60%), 121 (91%), and 155 (73.5%), respectively. Given the satisfactory effective response rate, non-response bias was unlikely to be a significant problem. To confirm this, however, a comparison of early and late responses was undertaken [Oppenheim, 1966]. No significant differences were found on any of the study's variables.

Table 6.1 summarises the characteristics of the respondents from the two firms. Of the total sample, 50% of auditors were 26 years of age or younger, had been in their current position less than or equal to six months, and had worked for their current firm for 3.4 years or less. The majority of respondents were male (72.3%), possessed bachelors degrees (80.7%), were supervisors or below (53.8%), and were employed in Firm A (70.6%). A combination of chi-square tests and *t* tests revealed no significant differences between any of the demographic characteristics in Table 6.1

relating to respondents of Firm A and Firm B.

TABLE 6.1
CHARACTERISTICS OF THE SAMPLE

(n = 119)			
Characteristic:	Mean	Median	Range
Age	28.5	26.0	21 - 54
Position tenure (years)	2.1	0.5	0 - 25
Firm tenure (years)	6.0	3.4	0 - 30
Years in auditing	6.4	3.6	1 - 30
Percent of Total Sample:			
Sex:			
Male	72.3		
Female	27.7		
Education:			
Bachelor's Degree	80.7		
Post Graduate Diploma/Honours	6.7		
Master's Degree	3.4		
Other	9.2		
Position:			
Partner	13.4		
Manager	32.8		
Supervisor	15.1		
Senior	15.2		
Staff	23.5		
Firm:			
A	70.6		
B	29.4		

6.3 Measures

The survey instrument included measures for five distinct variables: role conflict, role ambiguity, the Type A behaviour pattern (TABP), overall job satisfaction, and auditor job performance. With one

exception, all of the measures employed in the study are included in Appendix B. The supplier of one of the instruments (the Jenkins Activity Survey measure of the TABP) used in this study does not permit reproduction of their test instruments in theses or dissertations. Consequently, this measure is excluded from Appendix B.

Role conflict and *role ambiguity* were measured using the instrument developed by Rizzo et al. [1970]. This measure consists of 14 items - 8 related to role conflict, and 6 related to role ambiguity. Role conflict and ambiguity items were randomised and several were reverse scored for the final questionnaire. Respondents were required to indicate the extent to which various conditions were true for them on a seven-point semantic differential scale ranging from *very false* to *very true*. It has been estimated that these scales have been used in 85% of all role stress-related studies [Jackson and Schuler, 1985; Van Sell et al., 1981]. According to Jackson and Schuler [1985, p. 17]:

... the Rizzo et al. scales have come under close scrutiny for their psychometric properties [Schuler, Aldag, and Brief, 1977] and their item response characteristics, namely their self vs other items wording and their positive vs negative item wording [House, Schuler, and Levanoni, 1983; Tracy & Johnson, 1981]. Based upon the results of Schuler et al. and House et al. it appears as if the Rizzo et al. role ambiguity and role conflict scales have been and are satisfactory measures of two role constructs.

A similar conclusion is reached in a more recent study by Smith et al. [1993]. In the current study, the Cronbach's alpha internal reliability scores for the role conflict and role ambiguity measures were 0.76 and 0.77, respectively [Cronbach, 1951]. Generally, researchers only need be concerned with the internal reliability of an instrument if it yields a Cronbach's alpha score below 0.60 [Nunnally, 1967].

Overall Job Satisfaction was measured using the 20 item short version of the Minnesota Satisfaction

Questionnaire (MSQ) [Weiss et al., 1967]. This measure has been used extensively in the accounting literature (e.g., Brownell [1982a, 82b], Chenhall [1986], Chenhall and Brownell [1988], and Frucot and Shearon [1991]). Responses were required on a seven-point semantic differential scale with endpoints of *very dissatisfied* - *very satisfied*. The instrument is capable of providing three job satisfaction scales: intrinsic, extrinsic, and overall job satisfaction. The overall measure of job satisfaction is found by summing the scores on each of the 20 individual scale items. Dunham et al. [1977] have provided favourable empirical evidence concerning the MSQ's convergent and discriminant validity. For this study, the MSQ had a Cronbach's alpha of 0.87, which is consistent with other studies in which the MSQ has been used.

No standard measure of *auditor job performance* has emerged in the literature to date. This study employs a general twelve item measure of auditor performance originally developed by Choo [1986]. This self-rated instrument uses a five-point Likert scale with: 1 = unsatisfactory; 2 = improvement required; 3 = satisfactory; 4 = good; and 5 = outstanding. The scale point descriptors for 2 and 4 were changed slightly from Choo's original version in order to be consistent with performance instruments used internally by Firm A². In the current study, Choo's measure had a Cronbach's alpha of 0.80. Choo's measure was used in preference to that used by Rebele and Michaels [1990] because the former appears to have been subjected to more rigorous development and testing. Choo's instrument was devised in consultation with five personnel partners from five national accounting firms. Testing of the instrument revealed a strong positive correlation (0.86) between self-rated scores and superior-rated scores. Further, Choo found no significant difference between the mean self-rated performance score and the mean superior-rated score. Choo's instrument may also be more relevant to a New Zealand setting than Rebele and Michaels' measure, given that it was developed in Australasia, rather than in the United States.

Choo [1986] determined the overall performance rating for self and superior-rated performance by calculating the simple arithmetic average of the scores on each of the twelve performance dimensions. Several criticisms can be made concerning this approach. Firstly, it assumes that each dimension is of equal importance, and secondly, it fails to account for the fact that the relative importance of each dimension will differ according to organisational level. To overcome both of these problems in the present study, a weighting system was developed with the assistance of eight partners from Firm A and Firm B. This system takes into account differences in the importance of each item, both within and across auditor positions (see Appendix C).

The use of a multi-dimensional performance measure employing Likert scales is consistent with the performance appraisal methods of the subject firms. There is also evidence that this is the dominant method of performance appraisal in the public accounting profession. For example, Jiambalvo et al. [1980, p. 14 - 15] found that:

Large CPA firms are among the most active appraisers of performance. At fixed intervals (e.g., every four weeks), or on the completion of an assignment, an individual working in a CPA firm will be rated on a number of categories (e.g., planning work assignments, gaining client confidence, knowledge of job procedures). This is quite frequent by standards in other industries. ... Most CPA firms use multiple dimension graphic rating scales with anchor words placed along the scales. ... These ratings are used to identify specific strengths and weaknesses and so provide input for coaching and helping staff improve their performance (formative evaluation). They are also used in promotion and salary decisions (summative evaluation) and for this purpose must be combined into an overall evaluation.

Self-rating performance measures have been used in prior research to avoid the problem of “halo-error” associated with superior’s ratings [Brownell, 1982a; Nealy and Owen, 1970; Thornton, 1968].

Brownell [1982a, p. 17] describes “halo-error” as “... the tendency to evaluate ‘globally’ or, in other words, to evaluate on only one cognitive dimension”. Nonetheless, self-rating performance measures have, themselves, been criticised because they may lead to leniency bias in responses [Heneman, 1974]. However, so long as such bias is not systematic with the independent variables, a study’s results should be unaffected [Brownell and McInnes, 1986]. In this study, it is unlikely that self-reported performance will be a significant problem because (a) the anonymity of subjects was guaranteed, (b) superior- and self-ratings of Choo’s [1986] auditor performance measure have not been found to differ significantly, and (c) the study’s subjects are used to making similar self-assessments using multi-dimensional performance measures.

The *Type A behaviour pattern* (TABP) was measured using two separate instruments: the Vickers Scale [Vickers, 1975] and the Jenkins Activity Survey overall Type A-B measure (JAS) [Jenkins, et al., 1979].

In their seminal work, Kahn et al. [1964] stressed the importance of using reliable standardised measures of personality type in role stress research. The most reliable approach to the measurement of the TABP appears to be the Structured Interview (SI) developed by Friedman and Rosenman [Byrne et al., 1985]. When using the SI, the interviewer is interested in both the subject’s non-verbal responses to questions (e.g., does the subject appear irritated if there is a long pause between questions, etc.) and the content of the subject’s verbal responses. The SI appears to have “...statistically and clinically significant associations with coronary heart disease, both retrospective and prospective” [Jenkins et al., 1979, p. 4]. Because of the impracticality of administering the SI on large samples, various attempts have been made to develop self-report measures of the TABP. Although many such measures exist, no one particular measure has emerged as the universally accepted standard. In fact, there are claims that each of these self-report instruments measure slightly different aspects of the TABP construct [Matthews, 1982; Edwards et al., 1990]. Evidence of this is reflected by the moderate correlations between these measures [Byrne et al., 1985;

Edwards et al., 1990].

One of the most frequently used self-report measures of the TABP is the JAS. The JAS (Form C) consists of 52 multiple-choice items which provide scores on four scales: "... the Type A scale, which assesses the multifactorial clinical construct of the 'coronary-prone behavior pattern, Type A' [i.e., a global Type A-B measure]; and three factorially independent components of this broader construct: Speed and Impatience, Job Involvement, and Hard-Driving and Competitive" [Jenkins et al., 1979, p. 8]. The 52 items included in the JAS are similar to those included in the SI. Scoring the JAS involves applying weights, derived from optimal scaling and discriminant function analysis, to each possible item response. These weights were originally calculated to minimise the classification errors of the JAS relative to those derived using the SI for subjects included in the Western Collaborative Group Study (WCGS). To determine a subject's raw score on any one of the four JAS scales, the researcher must first determine the item weight corresponding to each of the subject's item responses and then sum these weights. The raw score is then linearly transformed into a standard score, with a positive score suggesting Type A behaviour, and a negative score indicating the absence of Type A behaviour (i.e., Type B behaviour). The resulting standard score will generally be within the range of +30 and -30 [Jenkins et al., 1979]. The standard score for any subject/sample may then be compared with the benchmark scores obtained in the WCGS (the mean score and standard deviation of the entire WCGS population were 0 and 10, respectively). The validity of the JAS was established by Jenkins, et al. in a number of ways, including confirming the agreement between JAS scores and the SI, and finding significant associations between people classified as Type A by the JAS and coronary heart disease. Matthews [1982] reports that, in general, classifications made by the JAS agree with the SI in about 60% - 70% of cases. Although Jenkins et al. [1979] indicate that the JAS scales are reliable, based on internal consistency and extensive test-retest procedures, some researchers have suggested otherwise (e.g., Edwards et al.

[1990]). For this study, the JAS had an adjusted Cronbach's alpha score of 0.73³. Jenkins et al. [1979] claim that the JAS can be used in organisational research, and is most appropriate for full-time salaried workers (both male and female) who are not older than 65 years of age.

With a view to keeping the overall survey instrument to a manageable length, this study includes only the 21 item global Type A-B scale from the JAS. The supplier of the JAS was extremely difficult to locate. Eventually, the 31 page Jenkins Activity Survey Manual, copies of the 52 JAS items, and the instructions for scoring (including item weights) were obtained from an Australian branch of The Psychological Corporation at a cost of approximately NZ\$200. The instrument was supplied with the proviso that the results of the study pertaining to this measure would be reviewed by an appropriately qualified psychologist. This review was performed by a psychologist from Lincoln University, New Zealand.

The other TABP instrument employed in the current study, the Vickers Scale, was originally developed by Sales in 1969. The measure was subsequently refined by Caplan in 1971 and then reduced to a nine-item scale by Vickers [1975]. The instrument uses a seven-point semantic differential scale ranging from *Very true of me* to *Not at all true of me*. An individual's overall Type A score is determined by summing his/her response to each of the nine items making up the Vickers instrument. A high score indicates a predisposition towards Type A behaviour, whereas a low score indicates a Type B orientation. Subsequent studies have found this measure to consistently yield internal reliability coefficients in excess of 0.75 [Choo, 1986]. The Cronbach's alpha score for this measure in this study was 0.82. The scale has been criticised by one researcher who suggests that it does not reflect the entire range of the TABP [Caffrey, 1978].

Given the lack of consensus among researchers as to which self-report measure of the TABP is the

³

The use of an adjusted Cronbach's alpha formula was recommended by Jenkins et al. [1979] because of the specific weighting method used in determining the JAS scores. A detailed discussion of the adjusted formula is presented in Nunnally [1967], Chapter 7.

most appropriate for use in organisational research, it was considered desirable to conduct the analysis separately using two measures of the TABP, and report the results of both.

6.4 Data Analysis

Zero-order correlations and a specific form of multiple regression analysis known as moderated multiple regression (MMR) analysis [Sharma et al., 1981; Jaccard et al., 1990] are the primary inferential statistical techniques used in testing the hypotheses.

MMR is a relatively straightforward extension of multiple regression analysis that permits the researcher to investigate interaction effects. Under MMR, two basic regression equations of the following form are examined:

$$Y = b_0 + b_1X_1 + b_2X_2 + e \tag{1}$$

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_1X_2 + e \tag{2}$$

where

- Y = the dependent variable
- X₁ = the independent variable
- X₂ = the moderator variable
- e = the residual term

If the *R*² of equation (2) is significantly greater than the *R*² of equation (1) then there is likely to be

an interaction effect between, X_1 , the independent variable, and X_2 , the moderator variable⁴. That is, the effect of X_1 on Y depends on X_2 . In this case, we would also expect the slope (b_3) of the multiplicative term, X_1X_2 , in equation (2), to be significantly different from zero. The strength of the interaction effect can be ascertained by calculating the difference between the R^2 of equation (2) and the R^2 of equation (1) [Jaccard et al., 1990].

Moderated multiple regression analysis has been used in many studies in the accounting literature (e.g., Brownell [1982a, 82b], Rebele and Michaels [1990], and others). The technique is most appropriate when the standard assumptions of multiple regression analysis are met, such as linearity between the dependent variable and each of the independent variables; constant variance and independence of the error terms; and normality of the error term distribution [Hair et al., 1995].

6.5 Summary

Data for the study were obtained through the use of a survey instrument sent to a sample of 169 external auditors employed by two “Big Six” public accounting firms. In total, the survey procedure yielded a usable sample of 119 auditors. This represents an effective response rate of 70%.

The research instrument used in the survey included measures relating to the five variables of interest in the current study, namely, role ambiguity, role conflict, the Type A behaviour pattern, overall job

4

The following equation can be used to determine whether or not the increase in R^2 between two regression equations is statistically significant:

$$F = \frac{(R^2_2 - R^2_1) / (k_2 - k_1)}{(1 - R^2_2) / (N - k_2 - 1)}$$

where R^2_2 is the R^2 for equation (2), R^2_1 is the R^2 for equation (1), k_2 is the number of predictors in equation (2), k_1 is the number of predictors in equation (1), and N is the total sample size. The resulting F is distributed with $k_2 - k_1$ and $N - k_2 - 1$ degrees of freedom [Jaccard et al., 1990].

satisfaction, and external auditor job performance. Each of the measures employed had been used in prior research, and appeared to exhibit adequate levels of validity and reliability.

The primary inferential statistical techniques used in the study are zero-order correlation analysis and moderated multiple regression analysis (MMR). MMR is capable of identifying statistically significant main effects between independent variables and a single dependent variable, in addition to significant dependencies between independent variables and moderator variables.

The following chapter presents the results of the study, together with a discussion of the study's findings.

Chapter 7

Results and Discussion

7.1 Introduction

This chapter is divided into two main sections: a results section and a discussion section. In the former, descriptive statistics concerning the variables of interest to the study are presented, followed by the results of hypothesis testing and a brief interpretation thereof. The discussion section considers the implications of the results and includes some suggestions as to why some of the study's hypotheses were not supported. A brief summary then concludes the chapter.

7.2 Results

7.2.1 *Descriptive Statistics*

Table 7.1 provides descriptive information concerning the variables of interest in the current study. As reported in this table, the mean role conflict and role ambiguity scores were 32.7 and 22.2, respectively.

The Jenkins Activity Survey (JAS) instrument has a theoretical range of -30 to +30. The mean standard score of 3.4 for this measure indicates that the auditors sampled are, on average, somewhat more orientated towards the Type A behaviour pattern (TABP) than were the subjects of the Western Collaborative Group Study¹.

TABLE 7.1

DESCRIPTIVE STATISTICS PERTAINING TO THE STUDY VARIABLES^a

Variable	Number of Items	Mean	Possible Range	Actual Range	Median	Standard Deviation
Role Conflict	8	32.7	8 - 56	11 - 50	33.0	7.74
Role Ambiguity	6	22.2	6 - 42	8 - 38	22.0	6.06
TABP ^b (JAS)	21	3.4	-30 - 30	-16 - 21	4.5	8.93
TABP ^b (Vickers)	9	44.8	9 - 63	25 - 62	46.0	7.57
Satisfaction	20	91.8	20 - 140	55 - 129	91.0	15.11
Performance	12	45.1	12 - 60	31 - 55	45.2	4.83

^a n=119
^b TABP = Type A behaviour pattern

Both the mean and median scores for the Vickers measure of the TABP confirm that the sample auditors are, on the whole, more Type A orientated than Type B. The mean and median Type A scores of 44.8 and 46, respectively, are both somewhat higher than the midpoint of 36 on the Vickers Scale. The bias towards the Type A end of the spectrum among external auditors is consistent with the proposition that, due to their hard-driving, competitive, and achievement-orientated characteristics, Type As tend to self-select themselves into professions and positions that are

¹ The subjects in the WCGS make up the JAS normative population. The mean standard score of the entire WCGS population is zero, while the standard deviation is ten [Jenkins et al., 1979]. See Chapter 6 for further details on the JAS instrument and interpretation of its scores.

challenging and associated with many disparate stressors [Chesney and Rosenman, 1980; Davidson and Cooper, 1980; McMichael, 1978].

The figures reported in Table 7.1 also suggest that the sample auditors are, on average, moderately satisfied with general aspects of their jobs, and rate their job performance as being somewhat more than satisfactory.

The distribution associated with each of the variables in Table 7.1 was tested for normality. Two types of test were performed. Firstly, a visual comparison was made of the normal curve and a histogram of each distribution; and, secondly, the Kolmogorov-Smirnov normality test was performed on each variable. Both tests suggested that the underlying distribution of each study variable was normal.

Further analysis of the study data indicated that there were some significant differences in mean scores across certain demographic variables. Table 7.2 presents the mean variable scores across auditor positions, audit firms, and sexes. Pair-wise tests of differences in mean scores revealed that audit partners perceive significantly lower levels of role conflict and role ambiguity, have higher Type A orientations, are more satisfied with their jobs, and rate their own performance higher than auditors lower in the firm hierarchy. These findings are consistent with those of Gaertner and Ruhe [1981]. The lower levels of role stress perceived by partners most likely reflects the greater control that they have over sources of role stress in their environment. Unlike Gaertner and Ruhe [1981], however, managers and supervisors did not feel more role conflict than auditors in other positions. Partners' relatively high Type A scores may indicate that Type As have what it takes to be promoted to this level, or, alternatively, it could reflect their self-selection into such positions. That is, talented Type As self-select themselves into partner positions, whereas equally talented Type Bs may seek alternative employment opportunities because they find the work environment associated with partnership incompatible with their own value sets. Whether Type As do, in fact, self-select

themselves in this manner has not been proven in the literature, and therefore provides an opportunity for future research.

TABLE 7.2
DIFFERENCES IN VARIABLE MEANS
ACROSS AUDITOR POSITIONS, AUDIT FIRMS, AND SEXES

	N [‡]	Role Conflict	Role Ambiguity	TABP [†] (JAS)	TABP [†] (Vickers)	Satisfaction	Performance
Auditor Position:							
Staff Accountant	28	34.4	24.8	4.1	43.4	86.1	43.1
Senior	18	34.3	23.0	4.4	44.3	81.8	44.5
Supervisor	18	34.0	23.4	1.7	42.3	92.5 ^e	44.8
Manager	39	33.6	22.8	1.8	45.5	91.2 ^d	45.3 ^g
Partner	16	24.0 ^a	14.3 ^a	6.7 ^b	49.1 ^c	113.6 ^a	49.2 ^f
Audit Firm:							
Firm A	84	33.2	23.0 ^{**}	3.0	44.0 ^{**}	90.2 [*]	44.4 ^{**}
Firm B	35	31.3	20.3	4.3	46.9	95.6	46.4
Sex:							
Male	86	32.3	21.4 ^{**}	2.5 [*]	44.5	93.0	45.0
Female	33	33.5	24.2	5.7	45.7	88.5	45.1

† TABP = Type A behaviour pattern
‡ N = Number of auditors
^a Partners' mean score is significantly different to that of staff accountants, seniors, supervisors, and managers ($p \leq 0.01$).
^b Partners' mean score is significantly different to that of managers ($p \leq 0.10$).
^c Partners' mean score is significantly different to that of staff accountants, seniors, and managers ($p \leq 0.10$), and that of supervisors ($p \leq 0.05$).
^d Managers' mean score is significantly different to that of staff accountants and seniors ($p \leq 0.10$).
^e Supervisors' mean score is significantly different to that of seniors ($p \leq 0.05$).
^f Partners' mean score is significantly different to that of supervisors, seniors, and staff accountants ($p \leq 0.01$), and that of managers ($p \leq 0.05$).
^g Managers' mean score is significantly different to that of staff accountants ($p \leq 0.10$).
^{*} Significant difference in mean scores between groups ($p \leq 0.10$).
^{**} Significant difference in mean scores between groups ($p \leq 0.05$).

Table 7.2 also reveals several significant differences in mean scores between audit firms. In particular, auditors in Firm A generally perceived more role ambiguity, were less satisfied, and assessed their own performance as moderately lower than auditors in Firm B. Lastly, Table 7.2 indicates two statistically significant differences between the mean variable scores of male and female auditors. Female auditors perceived more role ambiguity and, based on JAS scores, were more Type A orientated than their male counterparts.

TABLE 7.3

DIFFERENCES IN VARIABLE MEANS

BETWEEN TYPE A AND TYPE B AUDITORS

Behaviour Pattern	N ^a	Role Conflict	Role Ambiguity	Satisfaction	Performance
Type A (Top third JAS score)	40	31.9	21.2	95.2*	47.0**
Type B (Bottom third JAS score)	40	32.6	22.5	89.2	43.4

^a N = Number of auditors

* Type As' mean score is significantly different to that of Type Bs ($p \leq 0.10$).

** Type As' mean score is significantly different to that of Type Bs ($p \leq 0.001$).

Table 7.3 presents the differences in variable mean scores between Type A and Type B auditors. For the purposes of this table, the sample of auditors was trichotomised based on auditors' JAS scores. The mean variable scores for the top and bottom third were then compared. The top third group was classified as Type A auditors, while the bottom third was classified as Type B auditors. This procedure was used because research has shown that classifications based on the JAS correspond

more closely with those of Friedman and Rosenman’s Structured Interview (SI)² when JAS scores become more extreme in the positive or negative direction [Jenkins et al., 1979]. Table 7.3 indicates that the differences in mean scores for role conflict and role ambiguity between Type A and B auditors are not statistically significant. However, on average, Type A auditors do appear to be significantly more satisfied with their jobs and perform significantly better than their Type B counterparts.

TABLE 7.4

PEARSON CORRELATION COEFFICIENTS BETWEEN STUDY VARIABLES^a

	Role Conflict	Role Ambiguity	TABP ^b (JAS)	TABP ^b (Vickers)	Satisfaction	Performance
Role Conflict	1.00					
Role Ambiguity	.63***	1.00				
TABP ^b (JAS)	-.01	-.08	1.00			
TABP ^b (Vickers)	-.12	-.24**	.66***	1.00		
Satisfaction	-.54***	-.63***	.17*	.32***	1.00	
Performance	-.33***	-.50***	.31***	.45***	.49***	1.00

^a n=119
^b TABP = Type A behaviour pattern
* p≤0.05 (one-tailed test)
** p≤0.01 (one-tailed test)
*** p≤0.001 (one-tailed test)

Intercorrelations between study variables are provided in Table 7.4. Both independent variables, role conflict and role ambiguity, are negatively associated with job satisfaction and performance. Further, positive correlations are evident between both measures of the TABP and both dependent variables

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The SI is generally regarded as one of the most valid measures of the TABP and is often used as the benchmark against which self-report scales are evaluated [Byrne et al., 1985; Sparacino, 1979].

(job satisfaction and performance). Table 7.4 also indicates that the JAS TABP measure was strongly positively correlated with the Vickers TABP measure ($r = 0.66$), indicating, as one would hope, some degree of convergent validity between measures. Lastly, the significant positive correlation between role conflict and role ambiguity ($r = 0.63$) is consistent with prior studies. For instance, Jackson and Schuler's [1985] meta-analysis found a correlation ("True r ") of 0.42 between these two variables, while more recently, Rebele and Michaels [1990] found a correlation of 0.60 between the same variables. Van Sell et al. [1981] suggest that the positive association is to be expected due to the reciprocal causal relationship that may exist between dimensions of these variables. Therefore, "...even though role conflict and role ambiguity are conceptually distinguishable types of role stress, one should not expect their empirical indices necessarily to be unrelated" [Van Sell et al., 1981, p. 44].

Underlying the methods of analysis in this study is the assumption that the relationships between the dependent and independent variables are linear. As noted in Chapter 3, however, there is a possibility that non-linear relationships exist between the elements of role stress and job performance. Consequently, it was considered prudent to examine the linearity of the relationships between the study's dependent and independent variables prior to hypothesis testing. Linearity was initially tested through an analysis of scatter plot diagrams. This procedure suggested that negative linear functions would adequately approximate the relationships between both role stress elements and job satisfaction and auditor performance. This was confirmed using non-linear regression analysis. For each combination of dependent and independent variables, quadratic and cubic equations (generated by the curve estimation function in SPSS) were unable to significantly improve the R^2 s associated with the corresponding linear regression model.

7.2.2 Hypothesis Testing

Hypotheses 1 - 4

Hypotheses 1 - 4 were developed in Chapter 5 and are reproduced below (in alternative form):

H_{A1}: Perceived role ambiguity is significantly negatively associated with auditor job performance.

H_{A2}: Perceived role conflict is significantly negatively associated with auditor job performance.

H_{A3}: Perceived role ambiguity is significantly negatively associated with auditor job satisfaction.

H_{A4}: Perceived role conflict is significantly negatively associated with auditor job satisfaction.

The bivariate relationships specified in these hypotheses were examined using zero-order correlation analysis. Consistent with expectations, both role ambiguity and role conflict were significantly related to auditor job performance and job satisfaction in the predicted directions. As shown in Table 7.4, role ambiguity was significantly negatively related (at the 0.001 level) to both auditor job performance ($r = -0.50$) and job satisfaction ($r = -0.63$). Role conflict was also significantly negatively associated (at the 0.001 level) with job performance ($r = -0.33$) and job satisfaction ($r = -0.54$). Thus, the relationships specified in the alternative hypotheses 1 - 4 were supported by the sample data.

Hypotheses 5 - 8

Hypotheses 5 - 8, from Chapter 5, are shown below (in alternative form):

H_{A5}: Type A personality significantly moderates the relationship between role ambiguity and auditor job performance.

H_{A6}: Type A personality significantly moderates the relationship between role conflict and auditor job performance.

H_{A7}: Type A personality significantly moderates the relationship between role ambiguity and auditor job satisfaction.

H_{A8}: Type A personality significantly moderates the relationship between role conflict and auditor job satisfaction.

The following moderated multiple regression models were used to test hypotheses 5 - 8:

Hypothesis 5

$$JP = b_0 + b_1RA + b_2TABP + e$$

(1)

$$JP = b_0 + b_1RA + b_2TABP + b_3(RA \times TABP) + e$$

(2)

Hypothesis 6

$$JP = b_0 + b_1RC + b_2TABP + e$$

(3)

$$JP = b_0 + b_1RC + b_2TABP + b_3(RC \times TABP) + e$$

(4)

Hypothesis 7

$$JS = b_0 + b_1RA + b_2TABP + e$$

(5)

$$JS = b_0 + b_1RA + b_2TABP + b_3(RA \times TABP) + e$$

(6)

Hypothesis 8

$$JS = b_0 + b_1RC + b_2TABP + e$$

(7)

$$JS = b_0 + b_1RC + b_2TABP + b_3(RC \times TABP) + e$$

(8)

where

JP = Job performance

JS = Job satisfaction

RC = Role conflict

RA = Role ambiguity

TABP = Type A behaviour pattern measured *either* by the Vickers Scale *or* the Jenkins Activity Survey instrument

e = Residual term

To test whether the TABP significantly moderates the relationship between the elements of role stress and the two auditor job outcome variables, each main-effects-only model (models 1, 3, 5, and 7) is compared with the corresponding full three-term interaction model (models 2, 4, 6, and 8) in order to determine whether the latter model explains significantly more variation in the dependent variable than the former. Where this is found to be the case, one would also expect the interaction term

coefficient (b_3) in the interaction model to be significantly different from zero. The strength of any interaction effect can then be determined by calculating the difference in the R^2 of each model.

As two alternative measures of the TABP were used in the analysis, each of the models 1 - 8 were regressed twice, once using the Vickers measure of the TABP and once using the Jenkins Activity Survey (JAS) Type A measure. As mentioned earlier in this chapter, classifications based on the JAS correspond more closely with those of Friedman and Rosenman's Structured Interview (SI) when JAS scores become more extreme in the positive or negative direction [Jenkins et al., 1979]. Consequently, the sample was trichotomised on the basis of JAS scores. Only the top and bottom thirds of the sample were used in subsequent regression analyses. Auditors scoring in the top third were classified as Type A, whereas those in the bottom third were considered to be Type B³. The JAS-based TABP variable was therefore dichotomous, taking on a value of 1 if the auditor was Type A, or 0 if the auditor was Type B. In contrast, the regression models using the Vickers measure of the TABP were run on the full sample ($n = 119$). When based on this scale, the TABP variable was treated as continuous with a theoretical range of 9 - 63.

The basic assumptions underlying regression models 1 - 8 were tested in the following ways. A review of the plot of studentized residuals versus predicted values of the dependent variable for each of the models suggested that the assumptions of linearity, and independence and constant variance of the error term had been met. Linearity was also confirmed through a review of partial regression plots. Lastly, inspection of the normal probability plots for each model found little evidence of non-normality of the error term distribution.

Multicollinearity was identified as a potential problem early in the analysis. Initial regression analyses involving the interaction models (models 2, 4, 6, and 8) suggested that none of the independent

³ Similar classification procedures have been used in prior studies that have employed the JAS measure of the TABP (e.g., Brunson and Matthews [1981] and Cooney and Zeichner [1985]).

variables in these models were significant. Further investigation isolated the problem to multicollinearity between the interaction terms (i.e., RC x TABP or RA x TABP) and the remaining independent variables. Multicollinearity appears to be a relatively common phenomenon in multiple moderated regression (MMR) analysis [Cronbach, 1987; Jaccard et al., 1990]. Fortunately, Cronbach [1987] provides a relatively simple solution to the multicollinearity problem when it relates to MMR interaction terms. Cronbach suggests “centring”⁴ independent variables, including the components of the interaction term, prior to regression analysis being performed. According to Cronbach, this will result in a model that is “... almost certain not to be multicollinear” [p. 415]. This procedure does not affect the relationships between the dependent variable and the (non-interaction) independent variables or the interrelationships among these independent variables. For instance, the same regression statistics would be obtained for models 1, 3, 5 and 7 regardless of whether or not the independent variables are centred. Note, however, that variables should not be centred if they are dichotomous in nature, such as the TABP(JAS) variable [Jaccard et al., 1990]. Cronbach’s “centring” procedure was employed in this study and was found to eliminate multicollinearity.

Hypothesis 5

Models 1 and 2 were used to test hypothesis 5. The results of these regressions are shown in Table 7.5.

TABLE 7.5

MODERATED REGRESSION RESULTS OF JOB PERFORMANCE
REGRESSED ON ROLE AMBIGUITY AND TYPE A BEHAVIOUR

Independent Variable ^{ab}	Coefficient	Model 1	Model 2	Model 1	Model 2
		(Vickers)	(Vickers)	(JAS)	(JAS)
		Value	Value	Value	Value
Intercept	b_0	45.145**	45.176**	43.479**	43.479**
RA	b_1	-0.330**	-0.337**	-0.416**	-0.412**
TABP(Vickers)	b_2	0.224**	0.221**		
RA x TABP(Vickers)	b_3		0.003		
TABP(JAS)	b_2			3.085*	3.083*
RA x TABP(JAS)	b_3				-0.006
<i>F</i> -value		32.909**	21.803**	24.209**	15.930**
Adjusted R^2		0.351	0.346	0.370	0.362

^a RA = Role ambiguity, TABP(Vickers) = Type A behaviour pattern measured by the Vickers measure, TABP(JAS) = Type A behaviour pattern measured by the Jenkins Activity Survey

^b All variables, with the exception of JAS, were centred prior to regression analyses

* $p \leq 0.01$

** $p \leq 0.001$

The *F*-values reported in Table 7.5 indicate that models 1 and 2, regardless of whether they were

based on the Vickers or JAS measures of the Type A behaviour pattern, were significant at the 0.001 level. The Vickers and JAS versions of the main-effects-only model (model 1) explained 35.1% and 37.0% of the variation in external auditor job performance, respectively. However, irrespective of Type A measure, the interaction model (model 2) failed to explain significantly more variation in the dependent variable than did model 1. Consequently, the null hypothesis that the TABP does not significantly moderate the relationship between role ambiguity and auditor job performance could not be rejected at the 0.10 level.

Hypothesis 6

Hypothesis 6 was tested using regression models 3 and 4. The results of these regressions are shown in Table 7.6.

TABLE 7.6

MODERATED REGRESSION RESULTS OF JOB PERFORMANCE
REGRESSED ON ROLE CONFLICT AND TYPE A BEHAVIOUR

Independent Variable ^{ab}	Coefficient	Model 3	Model 4	Model 3	Model 4
		(Vickers)	(Vickers)	(JAS)	(JAS)
		Value	Value	Value	Value
Intercept	b_0	45.146**	45.160**	43.362**	43.358**
RC	b_1	-0.176**	-0.180**	-0.252**	-0.322*
TABP(Vickers)	b_2	0.265**	0.264**		
RC x TABP(Vickers)	b_3		0.002		
TABP(JAS)	b_2			3.426**	3.465**
RC x TABP(JAS)	b_3				-0.112
<i>F</i> -value		22.431**	14.866**	14.915**	10.160**
Adjusted R^2		0.266	0.261	0.261	0.258

^a RC = Role conflict, TABP(Vickers) = Type A behaviour pattern measured by the Vickers measure, TABP(JAS) = Type A behaviour pattern measured by the Jenkins Activity Survey
^b All variables, with the exception of JAS, were centred prior to regression analyses
* $p \leq 0.01$
** $p \leq 0.001$

All models reported in Table 7.6 are significant at the 0.001 level. The Vickers and JAS versions of

model 3 explained 26.6% and 26.1% of the variation in auditor job performance, respectively. Regression model 4 was unable to significantly improve upon either of these two figures. This is confirmed by the fact that the b_3 coefficient, corresponding to the RC x TABP interaction term, is not significantly different from zero at the 0.10 level for both versions of model 4. Therefore, the null hypothesis that the TABP does not condition the relationship between role conflict and auditor job performance could not be rejected at the 0.10 level.

Hypothesis 7

The multiple regression models 5 and 6 were the basis for testing hypothesis 7. The results of these regressions are shown in Table 7.7.

TABLE 7.7

MODERATED REGRESSION RESULTS OF JOB SATISFACTION
REGRESSED ON ROLE AMBIGUITY AND TYPE A BEHAVIOUR

Independent Variable ^{ab}	Coefficient	Model 5	Model 6	Model 5	Model 6
		(Vickers)	(Vickers)	(JAS)	(JAS)
		Value	Value	Value	Value
Intercept	b_0	91.786**	91.855**	89.600**	89.593**
RA	b_1	-1.450**	-1.466*	-1.535**	-1.510**
TABP(Vickers)	b_2	0.368*	0.363**		
RA x TABP(Vickers)	b_3		0.006		
TABP(JAS)	b_2			3.967	3.955
RA x TABP(JAS)	b_3				-0.043
<i>F</i> -value		42.510**	28.130**	31.463**	20.709**
Adjusted R^2		0.413	0.408	0.435	0.428

^a RA = Role ambiguity, TABP(Vickers) = Type A behaviour pattern measured by the Vickers measure, TABP(JAS) = Type A behaviour pattern measured by the Jenkins Activity Survey

^b All variables, with the exception of JAS, were centred prior to regression analyses

* $p \leq 0.05$

** $p \leq 0.001$

The *F*-values of all models reported in Table 7.7 were significant at the 0.001 level. The R^2 values relating to the Vickers and JAS versions of model 5 were 41.3% and 43.5%, respectively. Once

again, the interaction model (model 6) was unable to explain significantly more variation in the dependent variable (job satisfaction) than the main-effects-only model. The corresponding R^2 values for both versions of the interaction model were 40.8% and 42.8%, respectively. As a result, the null hypothesis that the TABP has no influence on the relationship between role ambiguity and job satisfaction could not be rejected at the 0.10 level.

Hypothesis 8

Regression models 7 and 8 were the basis for testing hypothesis 8. Both of these regression models are reported in Table 7.8.

TABLE 7.8

MODERATED REGRESSION RESULTS OF JOB SATISFACTION

REGRESSED ON ROLE CONFLICT AND TYPE A BEHAVIOUR

Independent Variable ^{ab}	Coefficient	Model 7	Model 8	Model 7	Model 8
		(Vickers)	(Vickers)	(JAS)	(JAS)
		Value	Value	Value	Value
Intercept	b_0	91.786**	91.844**	89.161**	89.152**
RC	b_1	-0.997**	-1.011**	-0.998**	-1.139**
TABP(Vickers)	b_2	0.523**	0.520**		
RC x TABP(Vickers)	b_3		0.009		
TABP(JAS)	b_2			5.177*	5.256*
RC x TABP(JAS)	b_3				0.228
<i>F</i> -value		32.668**	21.683**	17.746**	11.862**
Adjusted R^2		0.349	0.345	0.298	0.292

^a RC = Role conflict, TABP(Vickers) = Type A behaviour pattern measured by the Vickers measure, TABP(JAS) = Type A behaviour pattern measured by the Jenkins Activity Survey

^b All variables, with the exception of JAS, were centred prior to regression analyses

* $p \leq 0.10$

** $p \leq 0.001$

All models reported in Table 7.8 were significant at the 0.001 level. The Vickers and JAS versions

of the main-effects-only model (model 7) explained 34.9% and 29.8% of the variation in the job satisfaction, respectively. The interaction model (model 8) was unable to significantly improve on the explanatory power of the main-effects-only model, irrespective of Type A measure. This is confirmed by the lack of significance of the b_3 coefficient associated with the interaction term. The hypothesised moderating influence of the TABP on the linkage between role conflict and job satisfaction failed to be supported.

Given that several significant differences in mean variable scores were noted in Table 7.2 across auditor positions and audit firms, in particular, it was considered prudent to investigate whether these variables were playing a confounding role in the analysis. One dummy variable representing audit firm, and four representing auditor positions⁵ were added to models 1 - 8. Although not reported, the resulting regressions indicated that the previously reported results are insensitive to both auditor position and audit firm.

The results of hypothesis testing suggest that there is no simple bilinear interaction between the elements of role stress and the TABP. However, the method of analysis employed does not rule out the possibility that more complex interactions between these variables may exist. For example, for Type A individuals, a quadratic or cubic function might best describe the relationship between role conflict and job performance (due to the adverse effects of learned helplessness at high levels of role conflict), whereas a linear function may be the best descriptor of this relationship for Type Bs. In the current study, the relationships between role stress elements and both job outcome variables were investigated for the existence of such interaction effects using the procedure described by Jaccard et

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When a categorical variable, such as auditor position, consists of more than two possible categories, we should use $j - 1$ dummy variables in the regression model (where j is the number of possible categories) [Hardy, 1993]. In the current study, audit senior, supervisor, manager, and partner were all represented by dummy variables. The staff accountant category, the arbitrary reference group, is represented in the model when all four auditor position dummy variables take on a value of 0.

al. [1990]⁶. Using the TABP(JAS) dummy moderator variable, the analysis did not suggest that the shape of the relationship between role stress elements and job outcome variables depended on the auditors' Type A-B orientation (i.e., linear for Type B auditors versus quadratic or cubic for Type A auditors).

In summary, then, the data obtained in this study failed to support hypotheses 5, 6, 7, and 8. Although none of the hypothesised moderating effects of the TABP were found, it is apparent from the main-effects-only models (models 1, 3, 5, and 7 in Tables 7.5 - 7.8) that the TABP has a direct and positive effect on auditor job performance and job satisfaction. In all but one instance, the TABP was significantly positively related to the dependent variable, regardless of the Type A measure employed. The results reported in Table 7.3 are also consistent with these findings. Table 7.3 revealed that, although, on average, Type A and B auditors perceive similar levels of role stress, Type A auditors are significantly more satisfied with their jobs and tend to outperform their Type B counterparts.

⁶ Under Jaccard et al.'s [1990, pp. 59 - 61] procedure, for example, the presence of a conditional linear versus quadratic relationship between a dependent and independent variable could be determined by comparing the R^2 of the following main-effects-only model:

$$Y = b_0 + b_1X_1 + b_2X_1^2 + b_3X_2 + e$$

(where Y is the dependent variable, X_1 is the independent variable, X_2 is the dummy moderator variable, and e is the error term)

with that of the full five-term model below:

$$Y = b_0 + b_1X_1 + b_2X_1^2 + b_3X_2 + b_4X_1X_2 + b_5X_1^2X_2 + e$$

If the full five-term model's R^2 is significantly greater than that of the main-effects-only model, then the complex interaction effect is likely to be present.

7.3 Discussion

The results of this study suggest that both elements of role stress adversely impact on auditors' assessments of overall job satisfaction. Further, the results are consistent with those of prior studies both within and outside the auditing literature [Jackson and Schuler, 1985; Rebele and Michaels, 1990; Senatra, 1980; Sorenson and Sorenson, 1974]. Both role conflict ($r = -0.54$) and role ambiguity ($r = -0.63$) were significantly negatively correlated with job satisfaction at the 0.001 level, thereby substantiating the hypothesis that clarity and harmony are valued aspects of the auditor's work environment. These findings should be of considerable interest to auditing firms experiencing staff retention problems, given the empirically established association between job dissatisfaction and the formation of turnover intentions [Bullen and Flamholtz, 1985; Kemery et al., 1985; Kemery et al., 1987; Mobley, 1977; Schaubroeck et al., 1989; Snead and Harrell, 1989].

Also of interest to audit firms is the fact that both role conflict and role ambiguity were significantly negatively associated with auditor job performance. The correlation between role conflict and job performance was -0.33 ($p \leq 0.001$), while the correlation between role ambiguity and job performance was -0.50 ($p \leq 0.001$). As discussed in Chapter 2, the results of studies that have previously investigated the linkages between elements of role stress and job performance have been equivocal. The only audit-related study to investigate these relationships found a significant negative association between role ambiguity and job performance, but failed to find a significant association between role conflict and job performance [Rebele and Michaels, 1990]. With respect to the latter relationship, future research could attempt to determine whether the inconsistent results between the current study and those of Rebele and Michaels are a consequence of differences in geographical location, research model, or measure of auditor job performance.

It was noted in Chapter 3 that some researchers (e.g., Van Sell et al. [1981]) have speculated as to the linearity of the relationships between the components of role stress and job performance. This

study found no evidence of a non-linear relationship between these variables.

An unexpected result in this study was the lack of interaction between role stress and the Type A behaviour pattern. It was hypothesised that the adverse effects of high levels of role stress, such as lower job performance and overall job satisfaction, would be more severe for Type A individuals relative to Type Bs. This proposition was founded on Glass's [1977a, 77b] controllability theory. Glass argued that Type As are strongly motivated to maintain control over their environment. This motivation was expected to enhance the performance and job satisfaction of Type As relative to Type Bs in situations of moderate stress, whereas prolonged exposure to a salient and uncontrollable stressor was expected to cause the Type A to give up, i.e., exhibit learned helplessness. In turn, learned helplessness was expected to be associated with relatively low levels of performance and overall job satisfaction relative to Type Bs. This study's failure to empirically confirm these propositions may reflect the fact that, in the real world of auditing, role stress simply does not reach the extreme levels required to evoke behaviour consistent with learned helplessness. In this study, there was little evidence that auditors, in general, perceived extreme levels of role stress in their work environment. For instance, Table 7.1 reported that the mean levels (standard deviations) of perceived role conflict and ambiguity were 32.7 (7.74) and 22.2 (6.06), respectively. These scores indicate that, on average, auditor subjects circled the midpoint or less on each role stress item's seven-point scale. Most studies that have found evidence of learned helplessness amongst Type A subjects have been conducted in laboratory settings (e.g., Glass [1977a, 77b], Krantz et al. [1974], and others). It may be that the situations in which learned helplessness have been elicited through experimental manipulation are, to some extent, contrived or difficult to replicate in real world settings. Having said this, however, two survey-based studies have found that the TABP moderates the relationships between elements of role stress and job satisfaction [Ivancevich et al., 1982; Keenan and McBain, 1979]. These studies used managers and nurses as subjects. Clearly, future research replicating the current study using samples of auditors from small accounting practices, samples of accountants from other divisions of accounting firms, or even samples of individuals from other occupations, appears

warranted. Further, future research should also not ignore the fact that other potential moderators of the role stress/job performance and general job satisfaction relationships may exist. As discussed in Chapter 3, Jackson and Schuler [1985] promoted ongoing re-examination of the role stress-job performance and role stress-overall job satisfaction links using theoretically-based moderator variables.

The final result to be discussed in this section concerns the significant and positive association between the TABP and both job outcome variables. It appears that, based on self-report measures at least, Type A auditors outperform their Type B counterparts, and are more satisfied with their jobs. Although no formal hypotheses were established to this effect, this result is not completely surprising. As noted in Chapter 4, research findings concerning the linkage between the TABP and job performance have been equivocal. This has led some researchers to speculate that Type As outperform Type Bs only in certain situations [Herried et al., 1985; Matthews, 1982]. Matthews [1982], for instance, suggests that the performance of Type As will be superior to that of Type Bs when “in order to achieve a series of goals as quickly as possible, it is necessary to work rapidly, persist in spite of fatigue or the possibility of failure, and ignore potentially interfering distractions” [p. 301]. There are numerous references in the auditing literature that suggest that tight time deadlines are a salient feature of the auditor’s work environment [Alderman and Deitrick, 1982; Kelly and Margheim, 1990; Kelly and Seiler, 1982; Lightner et al., 1983] and are “one of the most important items to affect auditor behavior during an engagement” [Alderman and Deitrick, 1982, p.58]. It may be the case, then, that the inescapable nature of time pressure in the auditor’s work setting provides precisely the environment in which one would expect Type As to excel.

7.4 Summary

This chapter presented the descriptive statistics and results of hypothesis testing, together with a

discussion of the study's findings. In summary, four of the study's eight hypotheses were substantiated. In particular, role ambiguity and role conflict were found to be significantly and negatively associated with auditor job performance and overall job satisfaction. The study failed to find a significant interaction between the Type A behaviour pattern and role stress, but did reveal that Type A auditors tended to outperform their Type B counterparts, and, additionally, were generally more satisfied with their jobs.

The concluding chapter that follows provides a summary of the study, outlines the implications of the study's findings, identifies the study's limitations, and highlights avenues for future research.

Chapter 8

Concluding Statements

8.1 Introduction

This chapter is organised as follows. First, the purpose and results of the study are reviewed. This is followed by a discussion of the principal implications of the study's findings. Next, the limitations of the study are outlined. The chapter concludes by highlighting directions for future research.

8.2 The Main Findings of the Study

The primary objectives of this study were to validate, in a New Zealand setting, the results of prior studies that have examined the linkages between perceived role stress and both external auditor job performance and overall job satisfaction, and extend the results of previous research by considering whether these relationships are moderated by the Type A behaviour pattern (TABP). Based on the controllability conceptualisation of the TABP [Glass, 1977a, 77b], it was argued that Type A auditors would most likely perform less effectively and be less satisfied with their jobs in the face of a salient and largely uncontrollable stressor, such as role stress, than auditors who lack the behavioural characteristics of Type As (i.e., Type Bs).

Data for the study were collected through the distribution of a survey instrument to a sample of 169 external auditors employed by two “Big-Six” accounting firms in New Zealand. A total of 119 usable responses were received, representing an effective response rate of 70%.

Analysis of the sample data confirmed the hypotheses that role ambiguity is inversely related to both overall job satisfaction and job performance. It is likely, therefore, that job satisfaction and performance will be adversely affected in situations in which auditors perceive that they lack knowledge concerning their rights and duties, or the relevant activities required to meet their responsibilities, or the consequences of role performance/non-performance. Also consistent with expectations, role conflict was negatively associated with overall job satisfaction and auditor job performance. The latter results suggest that perceived conflicts between the expectations of role senders are likely to lead to a deterioration in the job satisfaction and performance of audit professionals. Although most researchers have implicitly assumed that these relationships between the components of role stress and job performance are linear, some have speculated that they may, in fact be non-linear (e.g., Van Sell et al. [1981]). Tests performed in this study suggest that, for external auditors, at least, the underlying relationships between the elements of role stress and job performance are best described by linear functions.

The hypothesised moderating effect of the TABP on the relationships between the elements of role stress and both job performance and overall job satisfaction was not borne out by the sample data. The possibility that, in general, role stress in the environment of the external auditor does not reach the extreme levels necessary to cause Type As to exhibit learned helplessness could not be completely ruled out.

When testing for the moderating effects of the TABP, it became apparent that the Type A variable was significantly and positively associated with both job performance and overall job satisfaction

quite independent of role stress. Relative to Type B auditors, Type As appear to perform better and be more satisfied with their jobs. The results of prior studies that have examined the direct relationship between the TABP and job performance have been equivocal. This has led some researchers to put forward contingency arguments as to why the performance of Type As may be superior to Type Bs in some work situations, and inferior in others. For instance, Matthews [1982] claims that Type As are more suited to tasks that require speed and persistence than their Type B counterparts. Given that ability to work at speed in order to continually meet time deadlines is a well documented feature of the external auditing profession and one that is highly valued by audit firms [Alderman and Deitrick, 1982], perhaps it is not surprising that this study found a direct association between the TABP and auditor job performance.

8.3 Implications of the Research Findings

There appear to be a number of significant theoretical and practical implications of this research. These are outlined below.

Theoretical Implications:

- 1) The negative relationships found in the study between role ambiguity and both job satisfaction and auditor performance and between role conflict and job satisfaction are consistent with the findings of several audit studies conducted in the United States [Rebele and Michaels, 1990; Senatra, 1980; Sorenson and Sorenson, 1974]. Given that this study was conducted in New Zealand, the generalisability of aspects of prior research can now be extended to the Australasian setting. The fact that the current study did not replicate Rebele and Michaels' [1990] finding that no relationship exists between perceived role conflict and auditor job

performance requires further research to determine whether this inconsistency is attributable to differences in research setting or differences in research method.

- 2) Jackson and Schuler's [1985] meta-analysis of the existing role stress literature indicated that the relationships between elements of role stress and both overall job satisfaction and job performance were likely to be dependent upon one or more moderator variables. The failure of the TABP to exert a moderating influence on these relationships in this study suggests that researchers should continue the search for meaningful moderator variables.

Practical Implications:

- 1) The results of the study suggest that audit firms may be able to improve auditor performance and overall job satisfaction by taking steps to address role stress in the work environment. Goolsby [1992] suggests that there are two principal ways in which firms may deal with role stress. Firstly, audit firms could adopt strategies that directly target the sources of role stress. These strategies may involve altering aspects of the organisational climate or the task environment. Where this is either not possible or feasible, firms may need to consider the placement and selection of staff based on their susceptibility to role conflict and role ambiguity, and, also, their ability to cope with such stressors. The second way in which role stress could be dealt with involves implementing individual-focused stress intervention programmes. These could include the introduction of stress management programmes, the provision of support groups and/or counselors, or the provision of "reality seminars" in which prospective employees are informed about "... the exact nature of a position and its associated stressors prior to entering a job" [Goolsby, 1992, p.158].
- 2) The study found that the work environment of the external auditor is conducive to higher job performance and overall job satisfaction amongst Type A auditors relative to Type B auditors.

This result does not necessarily mean audit firms should look only to hiring and promoting auditors with strong Type A tendencies. Audit firms need to temper personnel policies that favour Type As with the knowledge that:

- a) Type As are competitive by nature and prefer to "... work independently and without close monitoring by others" [Herried et al., 1985, p. 65]. As a consequence, individuals with high Type A orientations may not make the best "team players".
- b) Type Bs are likely to outperform Type As on tasks requiring slow, careful responses, and/or with a broad focus of attention [Matthews, 1982].
- c) Type As are more prone to coronary heart disease and gastrointestinal, respiratory, and non-specific viral illnesses than Type Bs.

It would appear, then, that a policy of encouraging and facilitating the development of only Type A auditors would be less than optimal.

8.4 Limitations

The validity of the study's findings must be viewed in the light of the limitations outlined below.

- 1) The non-random selection of the auditor subjects may influence the generalisability of the study's findings.
- 2) Data was obtained from auditors in two "Big-Six" accounting firms in New Zealand. The

results of the study may not generalise to other “Big-Six” audit firms or to non-“Big-Six” audit practices.

- 3) Due to the cross-sectional nature of the study and the statistical techniques employed, inferences about causality cannot be validly made.
- 4) There are inherent limitations in using self-rated measures of performance. In particular, self-rated performance measures are highly subjective. Had a more objective measure of performance been used in the present study, then different results may have been obtained.
- 5) With the exception of the Jenkins Activity Scale measure of the Type A behaviour pattern, all constructs were measured in a similar way. As a result, the study’s results may have been confounded by common method bias.
- 6) The length of the survey instrument could potentially have created a bias in responses due to the effects of fatigue.
- 7) Other limitations of survey research, such as measurement error, scaling issues, and non-response bias, may also have affected the current study.

Despite these caveats, the results of the study contribute to a greater understanding of the interrelationships among elements of role stress, the Type A behaviour pattern, auditor job performance, and overall job satisfaction.

8.5 Future Research

Although, in this study, the Type A behaviour pattern was found not to moderate the relationships between elements of role stress and both auditor job satisfaction and job performance, researchers should not ignore the potential of this moderator variable. The research should be replicated on auditors regularly exposed to higher levels of role stress than those auditors surveyed in the present study. For example, Gaertner and Ruhe [1981] suggest that auditors in regional accounting firms are likely to perceive more role ambiguity than those in small or large offices of national accounting firms. Alternatively, accountants from different divisions within public accounting firms could be studied, such as tax or management consulting specialists. Further, future studies should examine the effects of other potential moderators, such as influence orientation [Rebele and Michaels; 1990].

If replication studies are performed in the future, consideration should be given to using alternative variable measurement techniques. For example, the Structured Interview technique could be used to measure the Type A behaviour pattern, whereas performance could be measured using a superior-rated instrument or performance assessments from personnel records. This approach would reduce the effects of common method bias.

Additional insights concerning the interrelationships between the variables in the present study could be obtained by utilising longitudinal or experimental designs. These approaches are able to confirm causal relationships between the variables of interest.

There appears to be a dearth of research concerned with the specific coping mechanisms used by individuals in the face of role stress [Jackson and Schuler, 1985]. Future research in this area may provide information useful for the design of individual and organisational strategies aimed at mitigating the adverse effects of role stress.

Whether or not Type A individuals self-select themselves into challenging and potentially stressful professions and positions within those professions is also a question worthy of research attention. An appropriately structured longitudinal study may be able to determine whether the prevalence of Type A in such professions is simply a function of self-selection or whether it is due to the behaviour pattern being a distinct advantage in those particular work settings.

Finally, the present study indicated that there may be organisational advantages in employing and encouraging auditors with Type A dispositions. However, as alluded to earlier in this chapter, not all aspects of this behaviour pattern are functional. Given the multidimensional nature of the Type A behaviour pattern, several researchers are currently examining whether it is possible to simultaneously enhance the functional aspects of the behaviour pattern, such as achievement striving, and suppress its dysfunctional dimensions, such as impatience and irritability¹. In the words of Wright [1988, p. 12], “it would be nice if we were able to keep ‘the baby’ (drive, ambition) without the ‘bath water’ (hyperactivation and the resulting [coronary heart disease])”. The results of the present study clearly endorse research of this nature.

¹

See Bluen et al. [1990] and Wright [1988] for a more detailed discussion of this research programme.

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Appendix A

Specimen Covering Letter

XXXXXX

XXXXXXXXXXXXXX

Audit Division

XXXXXXXXXXXXXX

XXXXXXXXXXXXXX

XXXXXXXXXXXXXX

Dear XXXXXXXX

It is often suggested that stress in occupational settings, such as the work environment of the auditor, has the potential to have both desirable and undesirable consequences in terms of the way people act and feel at work. Somewhat surprisingly, little is known about the actual implications of such stress for external auditors.

We are currently conducting an independent study that attempts to gain new insights into the relationship between stress and the external auditor and would greatly value your contribution to our research effort. We would appreciate it if you would complete and return the attached questionnaire using the self-addressed freepost envelope enclosed.

You may be assured of **complete confidentiality**. We are only interested in analysing and commenting on the aggregate results of the study. Please note that your completed questionnaire will be **anonymous** as your name should not appear anywhere on the questionnaire.

To encourage a prompt return of the completed questionnaire, we will be giving away one copy of the following book to the winner of a prize draw:

The Small Business Book - A New Zealand Guide by R. Hamilton and J. English

If you would like to be part of this draw, please print your name on the back of the self-addressed envelope and return it with the completed questionnaire by May 19, 1995. Please **do not** write your name on the questionnaire itself. The winner of the draw will be randomly chosen from all eligible respondents. If you do not wish to participate in the draw, a prompt return of the completed questionnaire would still be appreciated.

I would be most happy to answer any questions you might have. Please write or call. The telephone number is (3) 325 2811, extension 8319.

Thank you for your assistance.

Yours sincerely

Richard Fisher

Appendix B

Measurement Instruments Used in the Study¹

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¹ As mentioned in Chapter 6, one of the survey instruments employed in the study (the Jenkins Activity Survey measure of the Type A behaviour pattern) could not be reproduced in this thesis due to copyright restrictions.

B.1 Role Conflict Measurement Instrument

Please indicate the degree to which the following conditions are TRUE for you in your job. (PLEASE CIRCLE)

1. I have to do things that should be done differently.	Very False	1	2	3	4	5	6	7	Very True
2. I receive an assignment without the manpower to complete it.	Very False	1	2	3	4	5	6	7	Very True
3. I have to buck a rule or policy in order to carry out an assignment.	Very False	1	2	3	4	5	6	7	Very True
4. I work with two or more groups who operate quite differently.	Very False	1	2	3	4	5	6	7	Very True
5. I receive incompatible requests from two or more people.	Very False	1	2	3	4	5	6	7	Very True
6. I do things that are apt to be accepted by one person and not accepted by others.	Very False	1	2	3	4	5	6	7	Very True
7. I receive an assignment without adequate resources and materials to execute it.	Very False	1	2	3	4	5	6	7	Very True
8. I work on unnecessary things.	Very False	1	2	3	4	5	6	7	Very True

(Source: Rizzo et al. [1970])

B.2 Role Ambiguity Measurement Instrument

Please Indicate the degree to which the following conditions are TRUE for you in your job. (PLEASE CIRCLE)

1. I feel uncertain about how much authority I have.

Very
False

1 2 3 4 5 6 7

Very
True
2. I do **not** have clear, planned goals and objectives for my job.

Very
False

1 2 3 4 5 6 7

Very
True
3. I know that I have divided my time properly.

Very
False

1 2 3 4 5 6 7

Very
True
4. I know what my responsibilities are.

Very
False

1 2 3 4 5 6 7

Very
True
5. I know exactly what is expected of me.

Very
False

1 2 3 4 5 6 7

Very
True
6. I receive clear explanations of what has to be done.

Very
False

1 2 3 4 5 6 7

Very
True

(Source: Rizzo et al. [1970])

B.3 Type A Behaviour Pattern Measurement Instrument (Vickers Scale)

Please indicate the extent to which the following statements are TRUE of you. (PLEASE CIRCLE)

1. I hate giving up before I am absolutely sure that I am completely beaten.

Not at All
True of Me

1

2

3

4

5

6

7

Very True
of Me
2. I have often been asked to be in charge of some group or groups.

Not at All
True of Me

1

2

3

4

5

6

7

Very True
of Me
3. Sometimes I feel like I should not be working so hard, but something drives me on.

Not at All
True of Me

1

2

3

4

5

6

7

Very True
of Me
4. I thrive on challenging situations. The more challenges I have, the better.

Not at All
True of Me

1

2

3

4

5

6

7

Very True
of Me
5. In comparison to most people I know, I am very involved in my work.

Not at All
True of Me

1

2

3

4

5

6

7

Very True
of Me
6. It seems as if I need thirty hours a day to finish all the things I am faced with.

Not at All
True of Me

1

2

3

4

5

6

7

Very True
of Me
7. In general, I approach my work much more seriously than most of the people I know.

Not at All
True of Me

1

2

3

4

5

6

7

Very True
of Me
8. I guess there are people who can be nonchalant or easy-going about their work, but I am not one of them.

Not at All
True of Me

1

2

3

4

5

6

7

Very True
of Me
9. My achievements are considered to be significantly higher than those of most people I know.

Not at All
True of Me

1

2

3

4

5

6

7

Very True
of Me

(Source: Vickers [1975])

B.4 Job Satisfaction Measurement Instrument

In my present job this is how I FEEL about: (PLEASE CIRCLE)

- | | |
|---|--|
| 1. Being able to keep busy all the time. | Very
Dissatisfied 1 2 3 4 5 6 7 Satisfied |
| 2. The chance to work alone on the job. | Very
Dissatisfied 1 2 3 4 5 6 7 Satisfied |
| 3. The chance to do different things from time to time. | Very
Dissatisfied 1 2 3 4 5 6 7 Satisfied |
| 4. The chance to be somebody in the community. | Very
Dissatisfied 1 2 3 4 5 6 7 Satisfied |
| 5. The way my manager(s) handles his or her staff. | Very
Dissatisfied 1 2 3 4 5 6 7 Satisfied |
| 6. The competence of my manager(s) in making decisions. | Very
Dissatisfied 1 2 3 4 5 6 7 Satisfied |
| 7. Being able to do things that don't go against my conscience. | Very
Dissatisfied 1 2 3 4 5 6 7 Satisfied |
| 8. The way my job provides for steady employment. | Very
Dissatisfied 1 2 3 4 5 6 7 Satisfied |
| 9. The chance to do things for other people. | Very
Dissatisfied 1 2 3 4 5 6 7 Satisfied |
| 10. The chance to tell people what to do. | Very
Dissatisfied 1 2 3 4 5 6 7 Satisfied |
| 11. The chance to do something that makes use of my abilities. | Very
Dissatisfied 1 2 3 4 5 6 7 Satisfied |
| 12. The way policies of my firm are put into practice. | Very
Dissatisfied 1 2 3 4 5 6 7 Satisfied |
| 13. My pay and the amount of work I do. | Very
Dissatisfied 1 2 3 4 5 6 7 Satisfied |
| 14. The chance for advancement in this job. | Very
Dissatisfied 1 2 3 4 5 6 7 Satisfied |
| 15. The freedom to use my own judgement. | Very
Dissatisfied 1 2 3 4 5 6 7 Satisfied |
| 16. The chance to try my own methods of doing the job. | Very
Dissatisfied 1 2 3 4 5 6 7 Satisfied |
| 17. The working conditions. | Very
Dissatisfied 1 2 3 4 5 6 7 Satisfied |
| 18. The way my co-workers get along with each other. | Very
Dissatisfied 1 2 3 4 5 6 7 Satisfied |
| 19. The praise I get for doing a good job. | Very
Dissatisfied 1 2 3 4 5 6 7 Satisfied |
| 20. The feeling of accomplishment I get from the job. | Very
Dissatisfied 1 2 3 4 5 6 7 Satisfied |

B.5 Job Performance Measurement Instrument

An auditor's performance can be measured by many criteria, e.g., controlling costs, maintaining client relationships, etc. For your current position, please assess as objectively and accurately as possible your performance on EACH of the following 12 auditor performance criteria. Circle only ONE number for each criterion. (Note: If you have had no responsibility for supervising others - criterion 12 - then circle "NA" for this criterion).

	Unsatisfactory 1	Improvement Required 2	Satisfactory 3	Good 4	Outstanding 5
1. Maintaining quantity of work.	1	2	3	4	5
2. Maintaining quality of work.	1	2	3	4	5
3. Communicating orally.	1	2	3	4	5
4. Communicating in writing.	1	2	3	4	5
5. Accepting responsibility and initiating action.	1	2	3	4	5
6. Exercising professional skills and care.	1	2	3	4	5
7. Following policies and procedures.	1	2	3	4	5
8. Planning and organising work.	1	2	3	4	5
9. Adapting to new or different job situations.	1	2	3	4	5
10. Getting along with others within the firm.	1	2	3	4	5
11. Dealing with clients outside the firm.	1	2	3	4	5
12. Supervising others.	1	2	3	4	5 NA

(Source: Choo [1986])

Appendix C

Item Weightings Used in Conjunction with the Auditor Job Performance Instrument

TABLE C.1
PERCENTAGE WEIGHTING FOR EACH PERFORMANCE ITEM
ACROSS AUDITOR POSITIONS

Performance Item	Position				
	Staff Accountant	Senior	Supervisor	Manager	Partner
1. Maintaining quantity of work	9	8	7	7	10
2. Maintaining quality of work	14	11	10	9	8
3. Communicating orally	7	7	7	7	8
4. Communicating in writing	8	7	8	9	8
5. Accepting responsibility and initiating action	7	6	6	7	6
6. Exercising professional skills and care	9	10	9	8	9
7. Following policies and procedures	13	10	8	7	5
8. Planning and organising work	4	8	9	10	6
9. Adapting to new or different job situations	5	6	6	5	8
10. Getting along with others within the firm	10	8	8	7	7
11. Dealing with clients outside the firm	10	10	11	13	20
12. Supervising others	4	9	11	11	5
	100	100	100	100	100