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# Stressful environmental change and stress reactions: an examination of the mediating role of job insecurity

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# CHAPTER 2.

## STRESS THEORY

### A conceptualisation of stress

Stress has increasingly come to be regarded as an integral part of everyday experience of modern living. People appear prone to perceive stress in a variety of situations and to see it as contributing to many forms of dysfunctions (Monroe & Roberts, 1990). This general perception is not only due to structural changes that have taken place in society, but also largely to the success of the diffusion of the various themes of stress conveyed by research. Accordingly, the association between stress and illness now has an established position within both the popular and scientific imaginations (Pollock, 1988).

The omnipresence of stress in the lives of people has necessitated an understanding of the construct in a more rigorous scientific sense (Monroe & Roberts, 1990). However, this is yet to be achieved. Review articles of stress traditionally begin with pointing to the existing controversy over the concept of stress (Vingerhoets & Marcelissen, 1988). Stress research has been hindered by problems in defining and measuring the construct (Kasl, 1987; Newton, 1989), to the extent that the study of stress has been plagued by an inconsistent and potentially confusing use of terms to denote variables in the stress process (Lazarus, 1993).

Even though there are a multitude of ways in which stress may be defined, most definitions of stress fall into one of three categories: a response definition, stimulus definition, and an interactionist definition. These categories reflect contact with different domains of stress (Edwards, 1992; Rice, 1992), yet each should be considered to gain an adequate understanding of the stress concept (McGrath, 1970).

To address the issue of stress, a theoretical framework of stress and the approach of the present study to stress is delineated in Chapter 2. In Chapter 3, an outline of change is presented with its relevance to South Africa, and the link between stress and change is demonstrated. The fourth chapter introduces the importance of perceived job insecurity to the study of stress and change, and illustrates its potential as a mediator. In Chapter 5, some stress reactions common to the process of stressful change and job insecurity are reviewed. The aim and rationale of the current research, as well as a proposed model to be tested, are presented in Chapter 6. The method and statistical analysis are discussed in Chapter 7, and in Chapter 8, the results of the present study are presented. Finally, in Chapter 9, the results and theoretical and practical implications are addressed, limitations acknowledged and areas for future research in the field of stressful change and job insecurity are suggested.

# CHAPTER 1.

## INTRODUCTION

Change has been an issue to reckon with since early times. At the beginning of the seventies, author Alvin Toffler (1970) popularised a term that described the potentially debilitating effects of major change. He wrote about a state of future shock which has enveloped people as they move through a time characterised by adapting to changes occurring at an ever-accelerating speed and unprecedented impact. He saw change as a concrete force that reaches deep into the personal lives of people and confronts them with the danger of psychological symptomatology. Recently, the literature has witnessed the reemergence of the importance of the relation between change and stress for individuals. Stress has surfaced as a major feature and problem of everyday life, threatening individual, organisational and societal health (Cooper & Cartwright, 1994). This reemphasis on stress and change comes at a time where society is undergoing mass changes occurring at an unprecedented pace (Conner, 1993). This is of particular relevance to South Africa, since it is presently subject to drastic changes on the political, social and organisational fronts (Gxwala, 1995; Mdongo, 1995; Werth, 1994). The implications of such change on employees in organisations is twofold. Firstly, changes are perceived as disruptive and demanding, leading to stress reactions among individuals (Ashford, 1988; Callan, 1993; Coetsee, 1993; Nelson, Cooper & Jackson, 1995). Secondly, changes are seen as comprising threat and uncertainty, leading to perceptions of job insecurity (Ashford, Lee & Bobko, 1989; Dekker & Schaufeli, 1995; Earnshaw, Amundson & Borgen, 1990). Job insecurity in turn has a potent effect as a stressor, increasing individuals' stress reactions (Bargal, Back & Arlav, 1992; Roskies & Louis-Guerin, 1990; Roskies, Louis-Guerin & Fournier, 1993). These acknowledgements of theory have led to the development of the causal model in the present study, which explores the relationships between stressful environmental change, job insecurity and stress reactions.

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## ABSTRACT

The aim of the present study was to develop and evaluate a process model linking stressful environmental change, perceived job insecurity and stress reactions. A review of the literature revealed that stressful changes in the environment are linked to individual stress reactions. Stress theory has also recognised that appraisal of a stressful situation leads to stress reactions. Moreover, the literature has identified job insecurity as a form of appraisal in that it is an internal event reflecting a transformation of beliefs about what is happening in the organisation and environment. Job insecurity in turn has been shown to result in various stress reactions in individuals. Based on such research and theorising, a causal model was developed and tested using structural equation modelling techniques. It was assessed whether: stressful environmental change impacted upon stress reactions and job insecurity; job insecurity impacted upon stress reactions; and whether job insecurity operated as a form of appraisal in mediating the relationship between stressful environmental change and stress reactions. The independent variable, stressful environmental change, was specified as a common factor of the measured variables, political change, social change and organisational change. The proposed mediator variable, job insecurity, was specified as a common factor of the measured variables perceived threat to total job multiplied by powerlessness, and perceived threat to job features multiplied by powerlessness. The dependent variable, stress reactions, was specified as a common factor of the measured variables psychological distress, job dissatisfaction and reduced organisational commitment. The model was tested empirically using a combined sample of 267 subjects from three organisations. Results indicated that all relationships in the proposed model were confirmed, and that a reasonable fit was demonstrated between the empirical data and the theoretical model. Stressful environmental change was causally related to both stress reactions and job insecurity. Job insecurity was causally related to stress reactions, and in addition operated as a partial mediator between stressful environmental change and stress reactions. Conceptual and methodological reasons for the findings are discussed, as well as some theoretical and practical implications. Limitations in the methodology are identified and future considerations of research are suggested.

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## DECLARATION

I declare that this dissertation is my own, unaided work. It is being submitted for the degree of Master of Arts in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other University.



Beverley Fay Carr

25 day of AUGUST, 19 95

# STRESSFUL ENVIRONMENTAL CHANGE AND STRESS REACTIONS: AN EXAMINATION OF THE MEDIATING ROLE OF JOB INSECURITY

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individuals (Vossel, 1987). In addition, it has been stated that conventional life event studies assume that there is a direct cause and effect relationship between life events and illness. This also disregards appraisal as it views the person as being essentially out of control of what happens, rather than being an agent capable of action and reaction (Pollock, 1988).

Even though it is acknowledged that individual ratings of life events may not tell us very much about the total meaning of a life event for a person (as one needs additional information such as circumstances under which the event occurred, reasons why event is significant etc.), it is also recognised that this can only be obtained by an in-depth examination of the personal experience of life events which can only be done on an individual basis using, for example, interviews (Vossel, 1987). However, separate assessment of positive and negative life events and individualised ratings of the impact of events, infers that life event stress considers that the same event can be interpreted differently by different individuals, and that it is not assumed that any event represents an equal amount of stress for different individuals. Hence, the stressfulness of life events does depend not on the occurrence of an event and the resulting life changes, but also on the subjective evaluation of the events impact on an individual's life. This differentiation of events according to their psychological meaning, is similar to the stress model of Lazarus, in that the role of psychological processes in mediating between the environmental stimulus and stress reactions is emphasised (Aro & Hänninen, 1984).

Dissatisfaction has been expressed at the failure of the trait paradigm in life event research (Lazarus & Folkman, 1984). Yet, as Emmons (1991) notes, there has been an abundance of evidence pointing to the usefulness of traits as moderators in life events research. Recent life event research has acknowledged the differential impact of life events on individuals (Perkins, 1982), and recognised that the impact of most environmental events will vary with factors such as individual differences in vulnerability and resources (Dohrenwend & Shrout, 1985). Life event researchers have demonstrated that

However, the duration and intensity of change was emphasised as the critical variable regardless of whether it was caused by desirable or undesirable events (Vossel, 1987). This generalisability of objective ratings assigned to each life event and the assumption that change is stressful regardless of desirability has been criticised (Zimmerman, 1983). This is because life change was conceptualised as a unidimensional concept referring only to the quantity of life change required by an event, and not to the qualitative nature of an event. Thus, the adverse consequences involving stress depend not only on the number of events and the magnitude of changes they entail, but on the quality of eventful change as well (Vinokur & Selzer, 1975).

Sarason, Johnson and Siegal (1978) made further developments and produced the Life Experience Survey (LES) which allowed for separate assessment of positive and negative life experiences and individualised ratings of the impact of events. The utilisation of this measuring instrument rendered results that support that negative or undesirable life events have a more detrimental effect on individuals than do desirable events in terms of the degree of stress created (Sarason et al., 1978). Subsequent studies have consistently shown that undesirable or negative, but not positive, events are related to a variety of stress reactions (Aro & Hänninen, 1984; Bhagat & Allie, 1989; Bhagat, McQuaid, Lindholm & Segovis, 1985; Gillis, 1992).

**Criticisms of the life event approach**

Life event theory has been criticised on the basis that it does not focus enough on the meaning of events for individuals (Pollock, 1986), as it only measures the extent to which the demand is present and not how the demand is evaluated. By doing this it over-simplifies stressor measurement by ignoring the process of appraisal which is conceptually at the core of stress research (Dewe, 1992). Furthermore, the a priori categorisation of life events (e.g., desirable or undesirable) is rejected as the measurement of stress must take into account that the same event can be experienced differently by different

economic news or threat of war. Some of these life events are 'negative' in a sense that they are typically socially undesired, while others are socially desired and therefore 'positive'. In either case, they require adaptation and change on the part of the individual experiencing them (Miller, 1989). The impact of life events is presumed to be additive, in that the more events the individual experiences, the greater the amount of adaptive behaviour required, and the greater the effect on the individual (Latack, 1984; Rabkin & Streuning, 1976). Excessive changes are said to hamper individual adjustment efforts, and result in strain manifested in disturbed physiological and psychological reactions (Tholts, 1983).

Researchers have assessed how life events are experienced by measuring the amount of stress associated with different events by asking individuals to rate lists of life events (Miller, 1989). The widely used Social Readjustment Rating Scale (SRRS) developed by Holmes and Rahe (1967) is illustrative of this approach, in that it is able to quantify the amount of readjustment required by individuals to cope with life events, by allowing individuals to respond by rating a series of events according to the relative degree of adjustment required. Holmes and Rahe (1967) define social readjustment as the amount and duration of change in an individual's accustomed pattern of life resulting from various life events. Thus, social readjustment measures the intensity and length of time necessary to accommodate to a life event.

Holmes and Rahe's (1967) premise made no reference to individuals' perceptions of the desirability of events, and viewed individuals as passive homogenous victims to life, without any volition to act on the environment which causes such hardships (Nelson et al., 1995). Consequently, Holmes and Masuda (1974) constructed the Schedule of Recent Experiences (SRE) which not only asked whether subjects hade experienced a specific event, but also asked on how many occasions that event was experienced. It was assumed that life events provoke a change in an individual's habits that require adaptation that usually is not part of the individual's everyday life repertoire.

stressor and the perceptual appraisal of the matrix (Schafer & Fals-Stewart, 1991), and thus segregates environmental input and perception (Monroe & Roberts, 1990).

## Life event stress

Some researchers in the field of stress have concentrated on an aspect of the area known as life events (Dohrenwend & Dohrenwend, 1974). These researchers share two sets of concerns that give their work unity. Firstly, they focus on a class of stressful stimuli or situations called life events. Life events are a cluster of social events or any set of circumstances whose advent requires substantive change in an individual's ongoing life pattern (Holmes & Rahe, 1967). These life events are a class of stressful stimuli or situations to which nearly everyone is exposed, to a greater or lesser extent, in the course of life (Dohrenwend & Dohrenwend, 1974), and of which are of some major significance to the individual (Russell & Davey, 1993). They include experiences such as marriage, birth of a child, death of a loved one, major change in financial status, change of residence, change of job and so on (Steffy, Jones & Noe, 1991). The second focus shared by researchers in this field is the general hypothesis that stressful life events play a role in the aetiology of physiological and psychological disorders (Dohrenwend & Dohrenwend, 1974; Kabkin & Streuning, 1976; Russell & Davey, 1993).

## Theoretical issues in the field

According to Russell and Davey (1993), life events can be conceptualised at three basic levels. At the micro-level, the focus is on the day-to-day minor stressors that people experience such as arguments or traffic jams. Life events are also understood in terms of life changes of some major significance to the individual such as events like marriage and serious financial problems. Life events may also be conceptualised at the macro-level in terms of events that have their impact on society at large and then on the individual, such as bad

or outside the control of the individual). By measuring the important objective characteristics of the events and social situation, the individual's perceptions of these events and situations, and the relevant personality variables, one may ascertain whether these perceptions are determined by the objective characteristics of the event as opposed to personal dispositions, or by an interaction of the two. However, since Lazarus et al. (1985) do not separate events and reactions to events in their stress measure, this aim cannot be achieved (Dohrenwend & Shrout, 1985).

Other researchers have also argued in favour of the use of objective measurements. It has been proposed that even though the importance of an individual's perceptual appraisal of the stress process is intuitively appealing, the interactional model poorly defines constructs and allows for overlapping measurement. When terms overlap in operationalisation, such that the measures of each defined variable are correlated at a level precluding clear distinction, validity is violated and the relationship between the independent and dependent variables are both statistically and conceptually uninterpretable (Schafer & Fals-Stewart, 1991). In addition, in order to address important theoretical and practical issues about how environmental events contribute to outcome measures, their measurement must be as independent as possible (Ganster & Schaubroek, 1991; Green, 1986). This is because it has been difficult to identify and agree upon a criterion for identifying the presence of the state of stress and then calibrating its intensity and duration. One should thus try to improve on existing methods by identifying linkages between environmental exposure and health outcomes as clearly as possible by using objective parameters. This may aid in increasing our chances of demonstrating that such linkages represent cause-effect relationships (Kasl, 1987).

Progress on the understanding of stress may be made from being precise about the extent to which stress is determined by objective events and by appraisals (Green, 1986). Hence, there is support for the life event approach, since life event scales incorporate both a stimuli-matrix of the environmental

urged researchers to measure stress by means of pure environmental events, uncontaminated by perceptions, appraisal or reactions (Dohrenwend & Shrout, 1985). Lazarus et al. (1985) oppose this notion and argue that by doing this, one abandons the insight that there are no environmental stressors without vulnerable people whose resources influence whether they will experience stress, the form it will take and its outcomes. They concluded that no environmental event can be identified as a stressor independently of its appraisal by the person, and that there is no way to define an event as a stressor without referring to the properties of the person that make them more vulnerable to that event.

Dohrenwend and Shrout (1985) have stated that pure environmental events uncontaminated by perceptions, appraisals or reactions should be measured, as by objectively measuring stress one can avoid operational co nding. They objected to the measure of stress utilised by the interactionist approach, as developed by Lazarus et al. (1985), on the basis that it contained symptom like content, and the instructions and response alternatives constituted a major way in which the items in the measure could become confounded with psychological symptoms. Dohrenwend and Shrout (1985) continued that they have recognised that the impact of environmental events vary with such factors as individual differences in vulnerability, in personal agendas and in resources. In fact, they described the stress process as consisting of three main structural components. Firstly, recent events that occur within a relatively brief time interval. Secondly, the ongoing social situation, that is the kinds of things that have a current impact such as social support networks or a noxious work environment. Thirdly, personal dispositions which include genetic vulnerabilities, health and personality variables. They continued that the underlying theme central to understanding the processes involved is the problem of determining the extent to which personal dispositions and social circumstances predict ways of coping with life events. The ways of coping to be predicted would include perceptions or appraisals of various dimensions of an event or situation (e.g., whether occurrence of the event is seen as within

report measures, subjects may be able to provide more valid reporting on the stress of their lives (e.g., Gorman, 1993; Zimmerman, Pfohl & Stangl, 1986). Another perspective is that although improvements could come from such efforts, it is most likely that procedures will continue to fall short for developing a sound body of information on stress. This is because measurement is built upon a standardisation of procedures, however, there is an underlying intricacy of standardising stress in the empirical lives of people (Monroe & Roberts, 1990). From these conflicting opinions, it follows that stress research has reached a hiatus, with increasing debate over the conceptualisation and investigation of stress (Newton, 1989).

## Current debate in stress research

Confusion over the definition, operationalisation and quantification of stress has led to the development of a debate over two components of the stressor, the stimulus matrix and the perceptual appraisal of the matrix, both of which are integral to the stress process (Schafer & Fals-Stewart, 1991). It has been recognised that neither component has demonstrably better explanatory value (Kessler, Price & Wortman, 1985), however, proponents of the stimulus-centred or life events approach versus the interactionist approach have disagreed, resulting in an intense debate between the two (Schafer & Fals-Stewart, 1991). This debate about the appropriateness of subjective assessments of self-reported stressors is sometimes cast as a theoretical issue concerning the nature of stress itself (Ganster & Schaubroek, 1991).

Proponents of the interactionist approach state that the meaning of stress is defined by many variables and processes that are reflected in the person's appraisal within the environment. Once this relational approach is understood, the term environmentally induced stress loses its usefulness, as it is the person-environment relationship that is stressful. Thus, Lazarus et al. (1985) maintain that the appraisal process should not and cannot be removed in the measurement of stress. Proponents of the life event approach, in turn, have

appraisal also exhibits empirical problems because it can be influenced by impulsive or unconscious appraisals which render self-reports inaccurate for the reflections on the time that the stressful situation took place (Coyne & Lazarus, 1980). Thus, issues relating to the development of appropriate concepts and methodologies in stress and coping still require resolution (Dewe et al., 1993).

## Theoretical and methodological issues in stress research

From the definitions of stress, we see that stress may be regarded as consisting of many interrelated variables and processes rather than as a simple variable that can be readily measured and correlated with adaptational outcomes (Lazarus, DeLongis, Folkman & Gruen, 1985; Sullivan & Bhagat, 1992). The pervasiveness of the stress construct has presented formidable problems to meaningful measurement and understanding of the concept and its potential consequences (Monroe & Roberts, 1990). Stress research is thus constantly calling for the need to clarify what we mean by stress, since how we define it influences how we research it and how we explain our results (Dewe, 1989).

The problem in the operationalisation and quantification of stress has provided a fundamental empirical difficulty (Marmot & Madge, 1987), and consequently, conflicting opinions over the value of stress research have emerged. One such opinion is that the concept of stress is too vague and general to be useful and as a result should be abandoned (e.g., Charlton, 1992; Kasl, 1987). On the other hand, researchers maintain that standard psychosocial instruments can be administered and their results entered into multivariate analyses and causal inferences thereby derived (e.g., Israel, House, Schurman, Heaney & Mero, 1989). Marmot and Madge (1987) believe that neither opinion is entirely correct, as the first disregards the detailed work attempting to define and measure specific aspects of the psychosocial environment, whereas the second treats 'stress' variables as if they are simple and easily measured. Other researchers of life stress suggest that with appropriate improvements from self-

will persist ultimately damaging the individual's adaptational outcomes such as psychological well-being and somatic health (Edwards, 1992). In this view, stress exists not in an imbalance between objective demand and the individual's response capability, but in an imbalance between perceived or subjective demand and perceived response capability. Since the individual is constantly reappraising his or her relationship with the environment, there are consequent alterations in the intensity and quality of the stress eaction (Folkman, 1984)

The interactionist approach has important implications. The theory enhances our understanding of the complex interplay between the stimulus and the individual. In addition, the notion that it is the subjective evaluation of the stressor rather than its objective characteristics that determine the outcome of a specific interaction has greatly influenced stress research (Vingerhoets & Marcelissen, 1988). Moreover, the interactional approach, through its emphasis that stress is an individual perceptual phenomenon, has encouraged research to consider qualitative differences between individuals. With this comes the recognition that there are different types of psychological stress states brought about by different antecedent conditions both in the environment and individual, and which have different consequences (Lazarus, 1993).

The focus of the interactionist approach is on understanding what individuals actually think and do in a stressful encounter (Dewe et al., 1993). However, as appealing as this may be, this task has led to definitional and methodological difficulties. Lazarus and Folkman (1986) have emphasised the difficulty of precise articulation of the stress concept in terms of the interactionist perspective. Lazarus (1976) even recognised that methodologically it is difficult to operationalise the appraisal and coping processes. It has also been noted that it is difficult to design studies which fulfil the requirements made by the theory to test specific hypotheses, since the dynamic nature of coping and appraisal requires a continuous monitoring of these processes, a requirement that by definition cannot be met (Vingerhoets & Marcelissen, 1988). Cognitive

this approach does not account for individual differences in the appraisal of the environment or the psychological processes involved in response to stress situations (Edwards, 1992). Despite criticisms, much research in the field of stress falls within the stimulus-based definition of stress, notably within the area of life events research (which is later discussed).

**Stress as a person-environment interaction**

The interactionist approach to stress represents a combination of the important elements of the stimulus and response-based definitions of stress. This approach views stress as arising through the existence of a relationship between an individual and the environment (Lazarus, 1993). Stress is seen as a dynamic cognitive state representing a disruption in homeostasis or an imbalance, and giving rise to a requirement for resolution of that imbalance or restoration of homeostasis (Dewe, Cox & Ferguson, 1993).

The most prominent cognitive interactional theory has been developed by R.S. Lazarus (Rice, 1992). Lazarus (1966) proposed that stress is dependent upon cognitive processes related to the perception of events and their meaning to an individual. The meaning of an event is determined by a cognitive appraisal process. Appraisal is viewed as the cognitive mediator of stress reactions whereby the individual is constantly evaluating the significance of a particular encounter and its relevance in terms of his or her well-being (Dewe et al., 1993; Lazarus, 1993). The individual evaluates whether there is anything at stake in terms of his or her values, goals, commitments or beliefs, and if anything can be done to cope with the demand (Folkman, Lazarus, Gruen & DeLongis, 1986). If the environment is appraised as taxing the individual, coping is activated. Coping determines what can be done, and is defined as the efforts to master, tolerate or reduce demands (Dewe, 1992). After an attempt is made to alter the situation, the situation is reappraised, and the process continues. If the encounter is successfully resolved, coping ceases and positive affect results. However, if the encounter is not successfully resolved, negative affects

Selye's approach has, however, been criticised on the grounds that it neglects the role of psychological factors in stress, and in fact that much of the physiological GAS response is not directly determined by the actual presence of the stressor but by its psychological impact on the person (Cox, 1978; Rice, 1992). It is now recognised that stress cannot be defined simply as a response to aversive environmental demands, as the same demand may produce varied responses in different people, and in the same person on different occasions (Steptoe, 1991).

**Stress as a stimulus**

The stimulus based approach to stress focuses on the causes of stress, in that situations external to an individual function as stimuli which cause a stress reaction or strain within the individual (Cox, 1978). A stimulus definition treats stress as some characteristic, event or situation in the environment that in some way results in a potentially disruptive consequence for the individual (Ivancevich & Matteson, 1980), initiating a chain of responses that ultimately leads to pathological ends (Ganster & Schaubroek, 1991).

Criticisms have been raised against this view of stress because of the lack of explicitly stated characteristics of stressful situations and, as a result, there is difficulty in specifying what is stressful about different situations (McGrath, 1970). It has also been stated that stress cannot be defined solely on the basis of stimulus properties since in this case all possible effects have to be considered as stress reactions (Vossel, 1987). Moreover, it is problematic to define stress as a uniform stimulus as it does not produce the same response in different individuals (Charlton, 1992). It has also been noted that the nature of a stressful event cannot be defined since it has no independent existence as it depends upon the meaning given to it by the individual (Pollock, 1988). Therefore, stress must first be recognised as existing before it can result in strain in individuals. This presumes that some intervening process occurs that is not part of the stimulus model (Ivancevich & Matteson, 1980). Accordingly,

**Stress as a response**

Modern roots of stress began with Cannon's (1936) research into the physiological responses to emotional arousal. He considered stress and its 'emergency response' to be adaptive in that they prepared the individual to cope with danger through the response of 'fight or flight'. However, it was Hans Selye (1976) who succeeded in establishing the concept of stress within the sphere of contemporary biology, employing it in a sense directly analogous to its use in engineering and physics from which it had been incorporated (Pollock, 1988). Selye (1976) proposed that bodily stress reactions follow a general adaptation syndrome (GAS). The stress manifest by the GAS is the non-specific or physiological response of the body to any demand made upon it. The GAS consists of three sequential stages. Firstly, that of alarm, in which the organism is mobilised to combat the physical demands of the stressor and the body's level of resistance is reduced. Secondly if the stress persists, the organism enters the stage of resistance, during which the body begins to cope with the situation. Thirdly, the stage of exhaustion, due to the depletion of the body's adaptive reserves. At this stage, physiological breakdown occurs and the body becomes highly susceptible to disease and even death.

Several important implications have arisen from Selye's theory. The GAS indicated that the body's adaptability is finite, since under constant stress, exhaustion or pathology eventually ensues (Selye, 1982). Selye's work has therefore stimulated numerous studies directed at the development and clarification of the theory that stress can seriously damage health (Pollock, 1988). A further implication of this theory is that the effects of stress are cumulative, that is the damage produced by stressors accumulates over time. In addition, stress may be additive. As responses to different threats are the same, an individual's reaction to a threat will be augmented by his or her reaction to previous exposures to threats (Fleming, Baum & Singer, 1984).

social and economic context, has led to expectations and struggles, which in turn have generated new conflict (Coetsee, 1993). This is because the transition process has been accompanied by, and given rise to economic, social and political processes, such as rapid urbanisation, increasing class differentiation, and struggles between geographically and socially distinct urbanising communities over scarce residential resources (Morris & Hindson, 1992). These processes have occurred within a stagnating economy, rising unemployment, increasing crime, racial friction and inadequate housing, infrastructure and social services, all of which have increased the levels of violence (Simpson, 1993a; Tucker & Scott, 1992). Morris and Hindson (1992) have argued that it is the gradual erosion of apartheid institutions and the abandonment of its policies that has led to an escalation of social tensions and increased violence throughout the country. Since liberalism and deracialisation have occurred in the context of an economic decline, class divisions have arisen. These processes have yielded economic and political concessions to a new middle strata of the black population, while excluding and marginalising the impoverished. It has been the struggle for new economic and social positions by the poorer and more marginalised sectors of the black population, within shifting and uncertain social and economic contexts, that has been one of the fundamental causes of violence (Morris & Hindson, 1992)

South Africa in seeking its new identity has been unable to escape its past, of apartheid and the liberation struggle (Barber, 1994). Thus, the legacy of apartheid, and its problems, are likely to remain for a while (Magee & Price, 1994). Schlemmer (1991) maintains that there are a number of entrenched features of South African society, such as the political intensity, violence, and inequalities between population groups, which will not alter quickly. It would, therefore, be unrealistic to expect that the eradication of apartheid would be able to automatically establish another form of harmonious social order, in which the dynamics of apartheid are removed, and the patterns and structures so substantially reformed.

an interim constitution by the multiparty Negotiating Council, laid the foundation for a democratic South Africa, bringing an end to minority rule, and leading the country into a new non-racial, nondiscriminatory future. This led to the most crucial political event in South African history, the first ever nonracial general election on 27 April 1994 ("The miracle," 1994). The elections in turn resulted in the inauguration of the government of national unity (South African Institute of Race Relations (SAIRR), 1995).

With South Africa's first non-racial elections in April 1994, the momentum of change in the country has been undeniable (Barber, 1994). There has been a fundamental transformation of South Africa from a position of racism to a democratic non-racial society (Kagee & Price, 1994). Expectations have risen among the black population that a non-racial democracy would bring benefits in terms of more freedom and improved housing, health, education, income and access to jobs (Cramer, 1994; Tucker & Scott, 1992). Moreover, the extension of the vote to all population groups has made the South African nation more inclusive, since ending apartheid and forming a new government has required a complete reimagining of what it means to be South African (Cramer, 1994). In addition, elections and the inauguration of a government of national unity has had great beneficial effects, increasing feelings of reconciliation and racial harmony among South Africans (Markinor, 1994). As a result, there has been much goodwill and hope for a better future in the country (Tucker & Scott, 1992). Thus, the process of change has resulted in much excitement and anticipation. However, feelings of hope have been coupled with fear and anxiety (Malimela, 1994), since the changes have also generated bitter disputes and appalling violence, characterising the recent transitional process as a mixture of cooperation and conflict (Barber, 1994).

Paradoxically, the process of transition, even as it has restored freedom and opened new opportunities to correct historical wrongs and structural distortions, has threatened South Africa's social system (Tucker & Scott, 1992). The drastic style change from the apartheid era towards a different and uncertain

# CHAPTER 3.

## STRESSFUL ENVIRONMENTAL CHANGE

Rapid changes are occurring in society. Shifts in economies, a growing worldwide population, corporate reorganisations, escalating crime, diversifying political and religio is ideologies, and constant transitions of power are some of the changes occurring. It is clear, then, that there is much change to deal with, and the volume, momentum and complexity of change is accelerating at an increasing pace (Cormier, 1993). The effects of these changes on individuals in terms of health and well-being are often dramatic and destructive (Levi, 1992). In South Africa, these worldwide changes are compounded by rapid social, political and economic changes occurring as a result of the transition process (du Toit, 1993). The dramatic quality and pace of change in South Africa has an intense effect on the social, political and economic environment, organisations, and on South African people (Consultative Business Movement, 1993).

### Political change

#### Political change in South Africa

Since February 1990, South Africa has been in the process of abandoning its policy of racial separation and liberalising an authoritarian political regime. The transition has been towards achieving a more acceptable economic and social system as well as a more democratic system of governance (Tucker & Scott, 1992). Major change commenced in 1990 when the State President, FW de Klerk announced the release of Nelson Mandela and the unbanning of political parties, and committed South Africa to a process of irrevocable change and reconciliation. Consequently, the fundamental laws of apartheid were repealed, and multiracial multiparty constitutional negotiations began, leading South Africa into a new political era of negotiation and reform. In 1993, the acceptance of

component variables and their exact relationship to one another, this should not be construed as an argument for imprecise model development (Schafer & Fals-Stewart, 1991). Stress must therefore be presented from a certain viewpoint. The present research adopts the life event approach to stress due to a number of reasons. Firstly, it is based on well-specified objective variables which allows for precise model development and accurate measurement (Dohrenwend & Shrout, 1985). Secondly, the life event approach conveniently includes different sources of stress acknowledging sources of both environmental and organisational stress (Bhagat & Allie, 1989; Hendrix et al., 1991). This allows the measurement of stress to capture sources of stress at work and serves as an important control for sources of stress external to the organisational sphere (Dooley et al., 1987). Thirdly, the life event approach provides a suitable basis for the theme of modern day stressors resulting from change. It affords researchers a procedure for studying the empirically elusive link between psychosocial processes and individuals' psychological functioning (Monroe, 1982). In the traditional life event approach there is a fairly straightforward equation of change with stress, or that all change involves stress, and the greater the amount of change the higher the risk of symptomatology. Although the cognitive approach emphasises that it is not so much change as such that is significant, but the meaning attributed to it, in practice, change is usually regarded as a hazard (Pollock, 1988). Thus, it is commonly held that change in peoples' lives is linked to stress (Jerusalem, 1993). The present study is based on the premise that an excess of change can be stressful to individuals, and measures stressors in terms of stressful social, political and organisational changes occurring within the individual's environment.

assignments and from repeated efforts of management to realign or to improve the organisation (Eden, 1982).

Numerous researchers have adopted the life event approach in conceptualising organisational stress (e.g., Bacharach & Bamberger, 1992; Bhagat & Allie, 1989; Bhagat et al., 1985; Dooley et al., 1987; Keenan & Newton, 1985; Motowidlo et al., 1986; Nelson et al., 1995). Empirical evidence exists that stressful work events are related to symptoms of strain such as decrements in job performance (Motowidlo et al., 1986), job dissatisfaction and reduced organisational commitment (Bhagat et al., 1985) Eden (1990) found that specific work events that were perceived as major disruptions or challenges were stressful, and were related to indicators of strain such as anxiety, and increased blood pressure and heart rate. Ashford (1988) reported that significant changes at work were related to increased stress among employees. Furthermore, Sutherland and Cooper (1992) ascertained that the occurrence of a work- related change event (i.e., the introduction of a new contract), was related to decreased job satisfaction and poorer mental health. These studies are in accordance with the finding of Sarason and Johnson (1979) who developed the Organisational Change Inventory to measure changes or events occurring in organisations. They concluded that the results of their study provided empirical "support for conceptualising organizational stress in terms of changes experienced in the working environment" (p.79).

**The present research approach to stress**

Despite considerable effort and debate, no uniformity of opinion has emerged on the definition of stress. This may not be so surprising when one contemplates the magnitude of the task: to abstract and operationalise commonalities in experiences across different individuals, all of whom lead very different lives and face different complexes of environment and experience all of which is subject to constant change over time (Monroe & Roberts, 1990). Yet, even though there is difficulty in the precise articulation of the stress

**Sources of organisational stress**

Some sources of work stress that have most frequently been found to be associated with stress outcomes include work load, role conflict, role ambiguity, shiftwork, noise, poor relationships with co-workers and superiors and lack of control over work processes (Israel et al., 1989). Recently, the changing nature of jobs have become recognised as a source of organisational stress (Ashford, 1988; Jick, 1985), in which a major source of stress is job features that pose a threat to the individual (Rice, 1992). The use of work-related change events as sources of organisational stressors is encouraged, since a current limitation in defining stress derives from the lack of attention to stress arising from stressful incidents at work (Keenan & Newton, 1985). Furthermore, research on stressful incidents at work is of interest since it allows for a more detailed examination of the stress process (Newton, 1989).

**A life event approach to organisational stress**

Due to the popularity of life event research, the study of the aetiology of life events has been extended to include events in the workplace (Nelson et al., 1995). Studies have investigated the relationship between stimulus and response in organisational stress (Dewe, 1991), which is fundamental to the life event approach (Dohrenwend & Dohrenwend, 1974). The life event approach to organisational stress assumes that stress can be attributed largely to the frequency and intensity with which stressful work events occur to an individual (Motowidlo, Packard & Manning, 1986). Work-related events or changes require individual adaptation, but as adaptation requires energy and individuals resources are not finite, too much change may lead to stress (Ashford, 1988; Sutherland & Cooper 1992). Organisational events include a change to a different line of work, change involving work load (Bhagat et al., 1985), promotion, demotion and loss of job (Kasl, 1987). They are organisational changes that derive from the impermanent nature of the organisational structure, from changes in role definitions, the instability of personnel

far removed from the individual and may be conceptualised in macro-environmental or societal terms. In addition, individuals do not separate aspects of their lives, and accordingly, issues such as economic factors, political uncertainty, and family-spouse relations have been implicated as major contributors to perceived stress, together with organisational factors in individuals' work environment (Hendrix et al., 1991). Sources of stress extend from the most immediate context of peoples' lives to the outermost boundaries of societies. Therefore, a detailed treatment of stressors touches at one end on the macro-environment of individuals (Pearlin, 1982) and at the other end on the immediate working life of individuals (Bhagat et al., 1985). Therefore, a more holistic understanding of the effects of stress is achieved when researchers examine the combined effects of life stress, arising from factors external to the work situation, and organisational stress, arising from factors at work, upon the individual (Bhagat et al., 1985; Hendrix et al., 1991).

## Organisational stress

### A conceptualisation of organisational stress

Organisational stress is defined as negative environmental factors or stressors associated with a particular job that disrupt an individual's psychological or physiological condition such that the individual is forced to deviate from normal functioning (Bhagat & Allie, 1989; Jamal, 1990). Organisational stress has been linked to a diverse set of psychological, physiological and behavioural outcomes (Israel et al., 1989; Rice, 1992). Ample empirical evidence exists which links work stressors to organisational outcomes such as poor job performance, job dissatisfaction, reduced organisational commitment, performance and absenteeism (Cooper & Cartwright, 1994; Jamal, 1990; Sullivan & Bhagat, 1992). Research also suggests that organisational stress has been increasingly implicated in the aetiology of poor mental health and psychosomatic illness (Bhagat & Allie, 1989; Jamal, 1990; Rice, 1992).

**Environmental stress**

Life events may be conceptualised at a macro-level in terms of stressors that have their impact first of all on society at large and then on the individual (Russell & Davey, 1993). The relation between social events and personal life events is closer than it seems, because a major social event can be viewed as a life event that is experienced by many people (Shiu et al., 1993). For example, macro-changes in South Africa are events that have had consequences for individuals as part of a community (Conner, 1993). Other kinds of events or changes that affect individuals include an economic recession and unemployment (Catalano, Rook & Dooley, 1986), political uncertainty (Hendrix et al., 1991), urbanisation, crime (Muller, 1992), political violence, changes in education, and an increase in cost of living (Bluen & Ribeiro, 1992). Evidence that life events on this level contributes to stress exists (Russell & Davey, 1993). For example, Shiu et al. (1993) found that major social events such as crime induce high levels of stress-related illnesses in a large number of people. Research has also shown that various life experiences such as socio-economic disadvantage is associated with signs of distress and illness behaviour (Turton & Chalmers, 1990) and social and political events with decreased psychological well-being (Bluen & Ribeiro, 1992).

Little attention has been paid to the specific social contexts in which people live and how these contexts generate stress (Dressler, 1991). Martin (1989) has called attention to the need to consider background stressors such as socio-economic pressures, high unemployment, intergroup tensions, racial discrimination and other stigmatised stressors. When these and related types of societal stressors are omitted from consideration, stress research loses much of its relevance (Levi, 1992). Handy (1988) maintains that because individuals tend to identify stressors in terms of lower-order constructs with tangible effects on their own lives, one cannot say that broader social issues are irrelevant to individuals' experience. Therefore, it is often that the root causes of stress are

individual must experience a certain number of events before any risk of disorder arises, or else an asymptote may exist that is a high level of stress above which further events do not increase the risk appreciably (Perkins, 1982). Therefore, recent developments have been directed away from a simple conception of life changes, towards an emerging appreciation of a more complicated interrelated system underlying stress (Monroe & Roberts, 1990; Perkins, 1982).

**Empirical research in the field**

Research on life events has resulted in the development of modified versions of the original measures or different scales, resulting in a large number of instruments in use in a wide variety of populations (Monroe & Roberts, 1990; Perkins, 1982). The underlying proposition of life events, that major changes in our daily lives are shown to increase the probability of illness, has yet to be effectively disconfirmed (Nelson et al., 1995). Research in the field has received much empirical support, in that stressful events have been associated with physical illness (Dressler, 1991; Eden, 1990), psychological distress (Brown, Harris & Hepworth, 1994; Bhagat & Allie, 1989; Shrout et al., 1989; Steffy et al., 1991; Wagner et al., 1988) and behavioural symptoms of stress (Hendrix, Steel, Leap & Summers, 1991; Keenan & Newton, 1985; Shiu, Hui & Lam, 1993). Collectively, studies provide strong support for the existence of a relationship between life event stress and a variety of health-related outcomes (Russell & Davey, 1993). Life event studies have also been popular in research in organisational settings (e.g., Bhagat & Allie, 1989; Hendrix et al., 1991; Ivancevich, 1986; Keenan & Newton, 1985). The life event approach, in addition to work related events, conveniently includes non-work related events which has allowed for measurement of sources of stress both internal and external to the organisational sphere (Dooley, Rook & Catalano, 1987; Latack, 1984). Thus, research on life events has been concerned with both environmental stress and organisational stress (Bhagat & Allie, 1989; Bhagat et al., 1985).

„) lude, not only major changes in ones life, but also daily hassles in a person's life (Emmons, 1991). These hassles are life events experienced on the micro-level where the focus is on minor stressors that people experience daily (Russell & Davey, 1993). Since it was Lazarus et al. (1985) that first mentioned that it was hassles that ultimately had significance for outcomes of stress, it is concluded that more exchanges are occurring between different approaches of stress and that the willingness to collaborate has increased (Vingerhoets & Marcelissen, 1988). Researchers have successfully utilised the daily hassles within a life event framework (e.g., Chamberlain & Zika, 1990; Emmons, 1991; Ivancevich, 1986; Russell & Davey, 1993; Wagner et al., 1988).

Life event researchers recognise that not all events are random occurrences, but rather often in part attributable to actions of the subjects (Brown, Harris & Hepworth, 1994). Life events are being viewed as taking place in the context of the individual's life, and so recent trends in life event stress are directed towards putting the 'life' back into events through a better representation of their interrelations (Monroe & Roberts, 1990). For example, it has been recognised that not all life events are necessarily cumulative in their effects, rather some events may nullify or neutralise the stress of previous experiences. Since life is a process of adaptation, it is not surprising that many life events reflect attempts to deal with previous problems. In addition, instead of nullifying the negative consequences of previous experiences, new events may exacerbate the persistent stressful conditions. Hence, most life events are not isolated experiences. Instead they are often the causes, consequences and correlates of several reported events (Monroe & Roberts, 1990).

These interrelationships between events have contradicted the notions of event independency and additivity, however, it may be that such relations may be relevant for ultimately clarifying event-disorder associations (Monroe, 1982). In addition, a simple additive model is insufficient for explaining stress, as thresholds for the effects of stress may exist. For example, perhaps the

Methodological improvements have included the specification of ambiguously worded items and the elimination of events that might be indicative of symptomatology (Kessler et al., 1985). Past studies have utilised items, such as ill-health, that are viewed as consequences rather than as causes of symptomatology, and have been included in both independent and dependent variable scales (Monroe, 1982). Ambiguously worded items on life event inventories have included items such as 'arguments at work' and other related items that are not operationally explicit and that can result in variability of interpretation across subjects (McQuaid et al., 1992). Researchers have begun to evaluate the utility of using descriptive information about events in order to obtain more detailed descriptions of reported events to reduce variability with life event scales (Shrout et al., 1989; Gorman, 1993).

Life events research has also been criticised for ignoring certain classes of stressors such as 'non-events' and chronic stressors (Vingerhoets & Marcelissen, 1988). Yet, Perkins (1982) remarked that the absence of an event (e.g., desired promotion) may simply be another event itself. Some of these 'non-events' (e.g., failure to get expected promotion) have been included in life event checklists such as Sarason and Johnson's (1979) Organizational Change Inventory (OCI). Furthermore, present life event scales have been criticised on the basis that they do not distinguish between acute and chronic stress (McQuaid et al., 1992). Vingerhoets and Marcelissen (1988) state that, most stressors are typically enduring and cannot be seen as an acute or time limited event, for example, events such as 'a disturbed relationship' or 'conflict with a colleague'. Furthermore, McQuaid et al. (1992) found in their study that over a third of the stressors people report in self-report life event checklists are chronic in nature. Therefore, it could be said that the role of chronic stressors is ignored.

Methodological recommendations have led to recent modifications of the life event approach and current research (Schafer & Fals-Stewart, 1991; Vossel, 1987). Research has extended the conceptual meaning of life events to

perceptions are determined by both the objective characteristics of the event and situation, and personal dispositions (Bhagat & Allie, 1989; Russell & Davey, 1993). For example, Ensel and Lin (1991) found that variables such as self-esteem and social support mediate the relationship between life events and psychological distress. In addition, Simons, Angell, Monroe and Thase (1993) found that cognitive factors such as dysfunctional attitudes and attribution styles influenced the individual's definition of life events by lowering the threshold for reporting experiences as stressful, and influencing the degree [illegible]ich the event was perceived as severe and undesirable. The findings [illegible]non's (1991) study provided support for the idea that events and personality are not independent, as even in the realm of events, when individuals presumably have less choice as events are imposed upon them, there are still nonrandom linkages with personality attributes.

**Methodological issues in the field**

The manifold criticism of Holmes and Rahe's (1967) central assumptions of non-specifity and an equal impact of events has led to various modifications of the original life event approach (Vossel, 1987). A growing number of researchers have devoted extensive energy toward refining measures of stressful life events to develop a more valid and methodologically sound approach (Ivancevich, 1986; Vingerhoets & Marcelissen, 1988). Past research has demonstrated very modest relationships between life events and symptomatology (Kessler et al., 1985; Russell & Davey, 1993; Shrout et al., 1989; Wagner, Compas & Howell, 1988). Yet, life event researchers have assumed that this would change [illegible] the methodological refinement of measurement instruments, in that if the magnitude of life events could be inclsively measured, the predicted relationships would emerge (Monroe & Roberts, 1990).

**Organisational change as a stressor**

Much of the literature regards organisational change as positive and progressive, its purpose as planned innovative intervention efforts to diagnose problems, improve efficiency, and maintain organisational improvements (McKendall, 1993). Some empirical studies have demonstrated positive results from change such as organisational performance and individual development (Robertson, Roberts & Porras, 1993). Other theorists have recognised that change can be both adaptive and disruptive, bringing about both opportunity and upheaval, success or failure (Amburgey, Kelly & Barnett, 1993; Manz, Keating & Donnellon, 1990; Offermann & Gowing, 1990). Yet, only a few theorists have examined the ramifications and consequences of negative organisational change (McKendall, 1993; Nelson et al., 1995).

While some changes may be positive rather than negative, there are often unintended negative consequences of change, making change not always desirable or beneficial to all organisational members (Levi, 1992; McKendall, 1993). For employees, change is only positive to the extent that it improves or leaves unaltered the employee's current or future work situation (Westlander, 1989). When change is imposed against employees' will, it produces frustration and vulnerability (McKendall, 1993) and threatens their personal identity, their job roles, career paths, status and power within the organisation (Callan, 1993; Travers & Cooper, 1993). However, whether change is initially perceived as positive or negative, it is usually accompanied by resistance (Coetsee, 1993; Conner, 1993; Wolmarans, 1995). People often resist change as it generates discomfort, disrupts the normal course of events and disturbs habitual routines or work patterns to which employees have become accustomed (Matteson & Ivancevich, 1990; McKendall, 1993). Change means that employees will have to develop new patterns for managing their situation as the goals and structures of the organisation shift (Nadler, 1981). Employees may experience stress due to the shifting and redefining of work roles, since it is difficult for employees to maintain an adequate understanding of their work roles during the changing

As the workforce has continued to diversify, organisations have experienced a need to be attuned to the potentially different norms and expectations of various groups. Thus, the traditional organisational focus on conformity has had to be replaced by an understanding of integration (Offermann & Gowing, 1990). In addition, there has been a changing profile of the workforce, in that employee attitudes and values have modified to increased desires for autonomy, participation, self-development and decision-making (Conner, 1993). Socio-political change and a workforce that is becoming more educated brings high levels of expectations (Horwitz & Townshend, 1993). Due to such changes, enormous challenges lie ahead of South African organisations, in the design and implementation of development programmes that are adapted to the differing first world and third world needs of the South African workforce (Templer et al., 1992).

In response to an economic decline, and the changing nature of the external environment, organisations have experienced radical transformative change (Callan, 1993; du Toit, 1993), resulting in a number of trends. There have been technological changes (Bargal et al., 1992; Goffee & Scase, 1992; Parsons, Linden, O'Conner & Nagao, 1991), the number of mergers and acquisitions have increased (Cartwright & Cooper, 1993; Matteson & Ivancevich, 1990), new governmental policies (Westland , 1989) and South Africa's reacceptance by the international community (Horwitz & Townshend, 1993; Westcott, 1995). These trends have presented new challenges for management, but at the same time have been followed by the need to downsize and accomplish workforce reduction, lay offs, early retirement, job transfers, changes in top management and management practices (Offermann & Gowing, 1990). Such changes have altered the work experiences of many employees, demanding them to adapt to uncertainty and instability in their work lives in the face of constant change and decline (Gxwala, 1995; Jick, 1985).

## Organisational change

### Change in South African organisations

Business organisations are inextricably linked to social and political developments in the South African society (Templer, Beaty & Hofmeyr, 1992; Worth, 1994). Such developments in South Africa have necessitated the formulation of new entrepreneurial goals, objectives and standards to ensure that organisations survive the turbulence that accompanies fundamental environmental changes (Mdongo, 1995). In the presence of changing environment, organisations have to strive to maintain competitive, and at the same time ensure a better working environment, and as a result, changes have to be introduced to ensure ongoing organisational effectiveness (Francescato, 1992; Offermann & Gowing, 1990).

South Africa has been faced with a comprehensive culture change such as a change in values, norms and accepted behaviour patterns. This cultural change has penetrated organisations, demanding changes in their entire value systems and cultural frameworks (du Toit, 1993; Gluckman, 1990; Gxwala, 1995). Organisations have been confronted by demands for new management philosophies and personnel policies such as equal opportunities, affirmative action, the abolition of discrimination, and the introduction of economic justice, all of which reflect democracy in the workplace (du Toit, 1993; Schlemmer, 1991; Templer et al., 1992; Venter, 1994). Organisations are focusing on issues such as racial stereotypes, prejudices and fears, communication barriers, interpersonal conflict, and the development of a working knowledge of different group norms, attitudes, perceptions, cultures and languages (Templer et al., 1992). Furthermore, organisations are having to develop new visions for the future by introducing participative styles of management, training and developmental programmes, flattened management cultures, a culture of ownership and pride, and providing social investment into employees' personal lives and in the community (Mallmela, 1994).

South Africa has resulted in the experience of displacement for many people, in that they have had to adapt to situations which are unfamiliar. This changed experience has resulted in perceptions of threat (Muller, 1992). Moreover, the dramatic social upheaval has further engendered feelings of helplessness in individuals (Simpson, 1993a). Even though definite improvements have occurred, factors such as unemployment, poverty, violence, high crime rates, backlog of housing, inadequate education and poor community facilities contribute to high levels of stress (Jerusalem, 1993; Odesnik-Duke, 1990). Expectations of redress and progress after political transition have been well-formed, yet, experience elsewhere has indicated that progress in reducing inequality is slow and difficult. Thus, socio-economic inequalities between races are likely to persist, resulting in the continuance of social and political stress in the future (Schlemmer, 1991).

The relationship between the community and the workplace is reciprocal, in that much of the tension, fear and insecurity from the political and social upheaval can manifest itself in personal domains of individuals such as the workplace and families (Simpson, 1993a). Thus, in a society as thoroughly politicised as South Africa, the style of politics inevitably spills over into other dimensions of society as people seek to resolve their social, economic and domestic problems (Simpson, 1993b). Therefore, in South Africa, the non-work and work lives of individuals interact to the extent that the attitudes and behaviour of individuals in organisations are influenced by experiences in the macro-environment (Odesnik-Duke, 1990).

absent health care (Nightingale et al., 1990). In 1994, it was stated that more than 12 million people in South Africa did not have adequate drinking water and nearly 21 million lacked basic sanitation (SAIRR, 1995). A report on health published by the World Bank in 1993 said that South African health indicators were in many cases far worse than those of other countries of comparable per capita income (SAIRR, 1994).

The struggle for land, housing, social services and jobs is likely to continue and intensify in the future (Saff, 1994). The effects of apartheid will persist for years, in part because of the continuance of factors such as high unemployment, deteriorating standard of living, and denial of basic survival needs such as shelter, basic services and security (Koetz, 1994), and because of the widespread attitudes that have encouraged racism and prejudice against the poor which will take time and commitment to change (Nightingale et al., 1990) Thus, achieving the goals of economic transformation, namely sustained growth and redistribution, requires a huge array of reforms (Cramer, 1994)

**Social change as a stressor**

Concerns over the form the new South Africa within the social and economic terrain, include fears about stability, economic growth, productivity, the quality of education, taxation, nationalisation and land distribution (Malimela, 1994). The creation of a new future, and the adjustment to major redefinitions of social, political, cultural, and organisational foundations in South Africa has created feelings of uncertainty and stress among individuals (Coetsee,1993). In addition, South Africans have experienced high levels of anxiety and distress as a natural response to unnatural stress situations unique to the country (Dawes, 1985; Turton & Chalmers, 1990). Due to political oppression and economic disparity, apartheid has been a contributing aetiological factor in the onset of psychological difficulties, such as a sense of powerlessness and lack of control (Kagee & Price, 1994). In addition, the changed social context in

The country has experienced a declining rate of real economic growth (Saff, 1994), which has been exacerbated by the situation in the homelands. Past apartheid policies have concentrated millions of blacks in homelands, in the countries least productive and most ecologically sensitive areas. With severely eroded land, little capital and few skills to manage resources, loss of resources combined with a lack of employment and social trauma of apartheid, a subsistence crisis in the homelands has developed. A consequence of this has been thousands of people migrating to the cities, resulting in rapid growth of squatter settlements and townships that are rife with poverty and discord (Homer-Dixon et al., 1993).

Hence, South Africa's urban landscape has undergone a period of rapid change, mainly caused by increasing levels of black urbanisation coupled with shortages of affordable land and housing for the poor (Saff, 1994). The black population in urban areas has risen rom 8,5 million in 1985 to 14 million in 1993. Estimates of the housing backlog in 1993 ranged from 1,4 million to 3 million units, and estimates of the number of people living in shacks in South African 1993 ranged from 5 million to 8,2 million (SAIRR, 1994). In the 1990s, there have been changes in the racial structure of urban areas. There has been a desegregation of the inner city and of 'white' suburban areas. This desegregation has been class-based with access determined by wealth rather than race (Saff, 1994). In addition, a shortfall of low-income housing has led to the formation of informal settlements on the outskirts of townships and suburban areas, which has threatened the interests of the more affluent, predominantly white classes (Saff, 1994).

The housing system is in a state of crisis, in addition to the massive backlog of homeless people, the quality of housing and associated services is dismal (Cramer, 1994). For example, an estimated 23 million people are without household electricity (SAIRR, 1995). Townships have little access to water, electricity, adequate housing, appropriate sewerage disposal. Thus, diseases are common, as a consequence of both poor living conditions and inferior or

The absence of socially regulative mechanisms and the spiralling culture of violence has led to increasing crime (Morris & Hindson, 1992). In addition, high expectations of redress among people, and the struggle of the state to deliver jobs has made people more susceptible to violence and crime (Koetz, 1994). According to the South African Institute of Race Relations, international comparisons show crime per capita in South Africa to be higher than in other countries, and Johannesburg rated as one of the most crime ridden cities of the world. Reported crime in South Africa has grown more rapidly than the population. In the ten years from 1983 to 1992 the murder rate increased by 135%, robbery by 109%, housebreaking by 71%, car theft by 64% and rape by 62%. Over the same period the population increased by 25% (SAIRR, 1994). In the period from 1989 to 1994, armed robberies increased by 97% and murder by 46% in the country (SAIRR, 1995). Analyses of reported crime has indicated that township residents tend to be the victims of more violent crimes against the person, such as assault, murder, whereas residents of formerly white areas suffer most from crimes involving theft of property, such as housebreaking and car theft (SAIRR, 1994).

The effect of this political and social turmoil on education for black South Africans has been devastating. Education amongst the black population has been characterised by highly politicised students, vandalism, a high drop-out rate, and continuous disruption of attendance at school, a small percentage of black students reaching matric, and low matric pass rates (Bennell & Monyokolo, 1994). Teacher strikes, pupil boycotts and violence escalated to such a high level that between January and August 1993 there were 29 111 reported incidents of non-attendance at schools (SAIRR 1994). The defiance campaign conducted by teachers in 1993 had a devastating effect on education, as teachers participated in a long strike and refused to prepare lessons and perform administration tasks (SAIRR, 1995). The overall matric pass rate in 1992 was 44% for black pupils and 98% for white pupils, with a large group of the black pupils who obtained their matric being not fully literate, and therefore inadequately equipped to enter the labour market (SAIRR, 1994).

but the stability of the desired state is yet to be attained (Conner, 1993). These uncertainties and contradictions that arise as a result of extensive societal change act as precursors to stress (Pearlin, 1982).

## Social change

### Social change in South Africa

South Africa has great economic potential and an infrastructure that is in parts well developed. Yet, there are high rates of poverty, crime, unemployment, and disease. Social divisions have been entrenched by a dramatically skewed provision of education, health and housing, and public services have been implemented in a system of extreme mismanagement and inefficiency (Cramer, 1994). Inequality in socio-economic circumstances is very large and has coincided with race boundaries. There is differentiation in income, educational attainment, lifestyle, residential circumstances, and access to amenities and services (Schlemmer, 1991). As a result, South Africa at present is in a crisis state due to the inability of the state to develop a social and economic policy that adequately responds to the needs of its people (Taylor, 1994).

Every aspect of economic life has been distorted as a result of apartheid. A survey conducted by the Central Statistical Services stated that the official measure of unemployment in South Africa was 4,7 million, approximately one third of the economically active population (Westcott, 1995). Furthermore, there is a clear indication that the employment crisis has deepened. Bennell and Monyokolo (1994) examined overall rates of unemployment in 1992 among 1984 and 1988 school leavers. There was a sharp increase in the incidents of unemployment rates from 14.4% for males and 18.9% for females in the 1984 school-leavers, to 30.6% for males and 44.1% for females in the 1988 school-leavers. The unemployment rate amongst undereducated and unskilled youth is even higher, leading to a life of crime and delinquency (Taylor, 1994).

insecurity over their future under majority rule (Homer-Dixon, Boutwell & Rathjens, 1993). A survey conducted in 1994 showed that substantial portions of the black population were optimistic about the future, whereas whites were less enthusiastic, in that they feared the future of the country (Markinor, 1994). Common identified concerns of South Africans include, whether individuals want to live in South Africa, whether they want their children to live in the country, whether the country will be governable or well-governed, whether there will be a rising standard of living, whether there will be a successful first world sector, whether black leadership will be able to moderate its followers' expectations (Tucker & Scott, 1992). Other fears include, the threat of the unknown, such as the consequences of a black majority government, fear of new social relationships, fear of losing power, control, status and privileges, fear of losing the known and trusted way of life that white people lived (Coetsee, 1993). As a result of the changed environment in South Africa, some individuals have felt a sense of loss, such as a loss of familiarity, loss of status, and loss of the certainty of a future, and consequently, have experienced anxiety and stress (Muller, 1992).

Even though the political transition in South Africa has been in a positive direction, with elections as a major step forward to national reconciliation, it would be foolhardy to expect spontaneous harmony and understanding upon the installation of the Government of National Unity (King, 1994). South Africa is in an interim stage, between the known past and the unknown future. This is a perplexing part of transition, since it is a stage between the ending and beginning of a new phase, or a gap between the old reality and a new one (Bridges, 1988). The old rules of politics have broken down and the new political system has not yet been established in full, and as a result, uncertainties and expectations of South Africans peak (Sisk, 1993). This experimental phase through which South Africa is undergoing, will continue until the new political, social and economic institutions achieve legitimacy and become fully functional (Gxwala, 1995). Thus, a volatile phase of the change process occurs when the equilibrium of the present state has been disrupted

ambivalence (Taylor, 1994), and has disrupted the social fabrics of communities, reducing their ability to govern themselves in the present or to educate their children to be responsible, productive citizens in the future (Tucker & Scott, 1992). To make matters worse, violence has adopted an increasingly arbitrary and random nature as victims have been less and less politically selected. The result of this kind of violence is that it has further entrenched feelings of insecurity in people (Simpson, 1993a). This is compounded by the fact that the experience of violence is seldom isolated, but tends to operate as a source of continuous stress (Simpson, 1993b). The consequence of this has been the development of a situation in which mistrust, suspicion and insecurity have become embedded in the relationships between South African people (Koetz, 1994), and in which fear and violence has become part of the daily existence of South African individuals (Taylor, 1994).

The process of transition has generated feelings of uncertainty amongst people (Simpson, 1993b). Uncertainty has arisen over the future of South Africa with regard to constitutional, economic, political, ideological and social issues (Barber, 1994). In particular, there has been uncertainty regarding the nature of the future government's policies. It has been anticipated that the future government would probably provide some improvement to the economy and to the living conditions of a portion of the population. However, uncertainty has been expressed as to whether it would lift the economy out of its historical mire and provide a genuinely constructive response to the social and economic challenges ahead (Cramer, 1994). There have also been fears over whether political campaign promises would be unfulfilled (Malimela, 1994), or if there would be a switch of policy midway through the transition period, or very serious disillusionment with the government before the next elections (Cramer, 1994).

It is recognised that change leaves individuals with a sense of lack of control over their own destinies, and undermines their ability to predict their futures (Marris, 1986). Accordingly, white South Africans have felt a sense of

value has led to a great deal of mistrust, inequality, disrespect and dishonesty between groups (Koetz, 1994). This sense of 'nationness' has been witnessed in the strong resistance to change exerted by groups from the right and left of the political spectrum (Coetsee, 1993). Much resistance to change occurred in the period before elections, whereby, political parties used violence to undermine the process of change (Simpson, 1993a) or to create destabilisation in order to obtain more powerful bargaining positions with the government (Barber, 1994). Violence became an alternative form of participation for those groups who did not want to enter negotiations. For example, the political and social settlement was made very fragile by the stance of the white right and the Inkatha Freedom Party whose resistance stemmed from fear of a loss of identity and material interest (Cramer, 1994), and because changes were perceived to be incompatible with their values and customs typified by traditionalism, conservatism, conformism and group solidarity (Coetsee, 1993). Thus, a culture of intolerance has had its greatest impact from political party rivalry, which in turn has stemmed from considerable fear underlying the antagonism between groups (King, 1994). Violence caused by political competition and rivalry, was also used as a strategy to allocate blame and stigmatise other organisations, and to bolster support for their political party (Morris & Hindson, 1992). The constant stalling of negotiations created a climate of extreme impatience and frustration (Simpson, 1993a), which resulted in a situation of violence sweeping the country before elections (Taylor, 1994).

**Political change as a stressor**

There has been an abundance of evidence indicating the readiness of South Africans for political change (Coetsee, 1993). However, from international experience, no country has made a successful transition to democracy starting from an unfavourable position like that of South Africa, with over a decade of economic stagnation and outright decline in per capita incomes, with inequalities of income, ethnic rivalries, and rising levels of violence (Tucker & Scott, 1992). Conflict has made people live in a state of continued

Schlemmer (1991) states that South Africans are exceptionally highly politicised, as the controversy which has surrounded South Africa's past policies has inculculated a high level of political awareness in the population. Decades of authoritarian control and curtailment of political activity, have produced a culture of militant anti-system protest, which having been a response to grievances, is likely to persist as a response to socio-economic frustrations in the years ahead. This political intensity has generated much violence among South Africans (Schlemmer, 1991), to the extent that the sustained nature of conflict has bequeathed a culture of violence upon South Africans (Simpson, 1993a; Taylor, 1994) . This has been rooted in the notion that violence in South Africa has become normative rather than deviant, and it has come to be regarded as an appropriate means of resolving political and social conflict. This is visable across the entire political spectrum where violence has been sanctioned as a means both of maintaining political power as well as an accepted means of attaining change or resolving conflict (Simpson, 1993a). The sustained nature of conflict and tension is indicated in the large amount of deaths resulting from political violence, and the existence of racial attacks and intra-african conflict (SAIRR, 1995). This violent ongoing power struggle has been rampant largely within black townships, as a result of denied access to education, health care, housing and work over so many years, leading to intense battles over competing claims for power and resources (Taylor, 1994; Tucker & Scott, 1992).

Causes of violence in South Africa have been a culture of intolerance and a political tradition notable for its non-democratic character (King, 1994). Moreover, the roots of violence are located not only in the divisions within the black population, but also in the divisions of society at large (Morris & Hindson, 1992). South Africa has developed a fragmented national identity through the coercion and exclusion of the majority of the population through apartheid (Cramer, 1994). Conflict has arisen between groups, due to engendered beliefs that their aspirations cannot be achieved simultaneously, and perceptions of a divergence in values, needs or interests (Taylor, 1994). The lack of common

the case of job insecurity, employees influence their subjective reality by focusing on situations that are not physically present and instead may recall the past or anticipate the future. Jacobson's (1991a) description of job insecurity, as an intermediate level of experience, in which the individual assesses whether the meaning placed on events is seen as threatening and whether it requires new adaptations, is also very similar to the process of appraisal.

The present study conceptualises job insecurity within a stress framework, in accordance with other theorists who have examined job insecurity from a stress perspective (e.g., Bargal et al., 1992; Greenhalgh & Rosenblatt, 1984; Kuhnert, Sims & Lahey, 1989; Roskies et al., 1993; van Vuuren, Klandermans, Jacobson & Hardley, 1991). The literature recognises that job insecurity may be both a stressful experience for individuals (Klandermans et al., 1991) and a type of cognitive appraisal (Jacobson, 1991a). Accordingly, it is proposed in the present study that the experience of job insecurity operates as an appraisal of stressful change, since both processes involve cognitive and affective responses such as a sense of threat, uncertainty, loss and reduced control.

Individuals have described job insecurity in terms of a threat externally imposed upon them and beyond their power to influence (Jacobson, 1987). Individuals need stable and secure environments in order to feel psychologically safe (Schein, 1993), thus insecure environments tend to represent threat. Individuals feel vulnerable when they are subject to threatening events (Jacobson, 1991a), because the unpredictable and ambiguous nature of such events leads to confusing outcomes (Jacobson, 1987). Individuals are threatened by new situations and experiences (Muller, 1992) and find it difficult to complete the letting-go process (Earnshaw et al., 1990). This is because old ways provide a familiar and stable environment, whereas the changes bringing about feelings of insecurity and are threatening and unpredictable. Thus externally imposed and unpredictable threats to job continuity have a highly bewildering and disrupting effect upon individuals (Jacobson, 1987).

**Individuals' subjective experience of job insecurity**

The key feature of job insecurity is the subjective or perceptual nature of the assessment by the individual (Bargal et al., 1992). The experience of job insecurity can be described as an internal process. It is a perceptual phenomenon that is conceptually close to a cognitive appraisal process, in that it depends on the individual's interpretation and evaluation of events in the environment (Jacobson, 1991a; 1991b). Thus, the concept of appraisal plays an important part in job insecurity, in that the individual will only experience insecurity from an objective event, if the individual subjectively perceives threat. The cognitive appraisal process evaluates whether and when threat will occur, what the consequences will be, and whether, to what extent, and how the individual can manage the threat (Jacobson, 1987).

Baum, Singer and Baum (1981) describe the appraisal of a stress situation as a type of cost-rewards analysis, whereby the individual evaluates the perceived severity of the stressor and the judged likelihood of the stressor's consequences having an effect on the individual. Aspects such as perception of threat, uncertainty and degree of control are embedded in the psychological process of appraisal, such that when control is not perceived as feasible or when a stressor is seen as unpredictable, greater costs to the individual will be exacted. This description of appraisal is very similar to the psychological process of job insecurity. Roskies and Louis-Guerin (1990) illustrate this point by stating that the experience of job insecurity, like psychological stress depends upon the individual's evaluation of the situation as threatening, and it is the perception of threat rather than the characteristics of the situation *per se*, that determine whether or not the circumstances are appraised as stressful or causing insecurity. In addition, when an individual experiences perceived powerlessness, like with lack of control, great costs to the individual will be exacted. Edwards (1992) also discusses the appraisal of stress with reference to job insecurity. He maintains that employees do not passively receive external stimuli, but instead actively construct their own subjective reality. In

Greenhalgh and Rosenblatt (1984) maintain that to possess adequate content validity, a measure of job insecurity would have to encompass both the severity of threat and the employees' sense of powerlessness to avert the anticipated loss. Thus, the dimensions of job insecurity are related multiplicatively, as follows:

**Job insecurity = perceived severity of threat x perceived powerlessness to resist threats**

The relationship is multiplicative in the sense that if either of the factors is insignificant the degree of experienced job insecurity also is insignificant (Greenhalgh & Rosenblatt, 1984).

Greenhalgh and Rosenblatt (1984) extended this definition in stating that the assessment of threat severity ideally would encompass: the range of job features that could be in jeopardy, the valence of each such feature, the subjective probability of losing each feature, and the number of sources of threat. Whereas, assessment of powerlessness would encompass the number of areas in which individuals experience a power deficit. Following this conceptualisation, Ashford et al., (1989) defined job insecurity as a multiplicative combination of importance and threat of loss of job features, importance and threat of loss of job itself, and a sense of powerlessness to prevent a loss. Job insecurity was operationalised as follows:

**Job insecurity = [(importance of job features x likelihood of losing job feature)+ (importance of job loss x likelihood of job loss)] x perceived powerlessness to resist threats**

Their study supported the use of a multiplicative measure rather then a measure of separate components of the construct, in that the multiplicative measure had higher correlations with variables than did its component parts (Ashford et al., 1989).

Greenhalgh and Rosenblatt (1984) proposed that perceived job insecurity should be conceptualised as being comprised of the dimensions of perceived powerlessness to counteract threats to ones' job, and perceived severity of possible results should job loss occur.

**Severity of threat**, or the degree of perceived threat, to continuity in a work situation depends on the scope and importance of the potential loss, and the subjective probability of the loss occurring. The subjective probability of the loss occurring depends on the nature and the number of sources of threats to continuity. A threat to an important job feature will contribute more to job insecurity than will a threat to a minor feature, and the more features that an individual perceives to be threatened, the greater the amount of insecurity experienced (Greenhalgh & Rosenblatt, 1984). In addition, the more an individual values his or her present job, the more they depend on it for acquiring valued features of that job, and thus the greater the perceived severity of job loss (Klandermans, van Vuuren & Jacobson, 1991).

**Sense of powerlessness** is an important element of job insecurity because it exacerbates the experienced threat (Ashford et al., 1989; Greenhalgh & Rosenblatt, 1984). Powerlessness encompasses an individual's ability to counteract the threats identified by the individual. Thus, even if individuals perceive a threat to their jobs or job features, individuals who have the power to counteract the threats are low in powerlessness and therefore should not experience much job insecurity (Ashford et al., 1989). A sense of powerlessness may result from various factors such as a lack of protection at work from unions or employment contracts, or from unclear expectancies, in that the individual may not know what corrective action to take to avoid the threat. The organisation's culture and dismissal procedures are further factors that affect the individual's sense of powerlessness (Greenhalgh & Rosenblatt, 1984).

## Conceptualisation and operationalisation of job insecurity

Jacobson (1991a) maintains that in defining the experience of job insecurity three distinctions must be considered: insecurity as an objective or subjective phenomenon, insecurity as a cognitive or affective quality, and insecurity about the continuity of one's job or aspects of one's job. Insecurity is a subjective phenomenon in that events that objectively occur are perceived as threats to the continuity of ones job. The phenomenon is sensitive to the subjective reality that individuals construct rather than to objective reality (Greenhalgh, 1982). For example, Jacobson (1991a) stated that job insecurity differs from actual job loss, in that job loss is unmistakably revealed by fact itself, whereas job insecurity is cued by one or more inferential events which are perceived as threatening indicators. Therefore, job loss or unemployment is an objective state of affairs for the individual, whereas job insecurity is a perceptual phenomenon resting entirely on the individual's subjective evaluation. The experience of job insecurity occurs in a setting with minimum social visibility, in that it is not a clear-cut transition like actual job loss (Jacobson, 1987). It exists inside individuals as a result of perceptions and cognitions. Accordingly, it is not open to direct observation, but rather is a construct which is inferred (Jacobson, 1991a). The cognitive aspect of job insecurity relates to the individual's beliefs of the likelihood of losing the job, whereas, the affective component of insecurity, is the concern about the likelihood of losing continuity in ones job (Jacobson, 1991a).

In the past, job insecurity has been conceptualised and measured as a simple global variable, for example, "how satisfied are you with the amount of job security you have?" The danger of using only a global measure of a complex variable is that different respondents may use the same response to refer to quite different aspects of the phenomenon (Greenhalgh & Rosenblatt, 1984). Job insecurity, therefore, cannot be captured by a single or global variable, since the subjective threat involved in job insecurity is multifaceted and complex (Ashford et al., 1989; Greenhalgh & Rosenblatt, 1984).

## Models of job insecurity

Although attempts by theorists such as Greenhalgh and Rosenblatt (1984) and Ashford et al. (1989) to conceptualise perceived job insecurity are established, the construct of job insecurity has not received significant attention from researchers (Kuhnert & Palmer, 1991; Orpen, 1993). Few studies have focused on individuals' perceptions of job insecurity (Jacobson, 1987; Kuhnert & Vance, 1992) and its effects upon individuals (Earnshaw et al., 1990).

Greenhalgh and Rosenblatt (1984) provided the first theory-based perspective of job insecurity. They presented a model of the nature, causes and consequences of perceived job insecurity. According to this model, objective threat of job loss was transmitted to the individual by intended and unintended cues from the organisation and employees. For example, insecurity emanated from sources such as official announcements, unintended organisational clues such as a reduction of a budget, and rumours. The individual attended to the messages or objective threats by means of a perceptual process which perceives a subjective threat. The individual was then likely to react with decreased effort expenditure at work, increased resistance to change, and a greater likelihood of leaving the organisation. The model also proposed a variety of potential moderators of the linkages between the antecedents and perceptions of insecurity such as locus of control, work orientation and a[illegible]ution tendencies, and moderators between perceptions of insecurity and re[illegible]ons to these perceptions, such as social support.

Ashford et al. (1989) extended the model of Greenhalgh and Rosenblatt (1984), and conducted an empirical examination of job insecurity. They developed a complex multiplicative measure of job insecurity to test hypotheses about the causes and consequences of the construct. Hypotheses regarding potential antecedents of insecurity, such as organisational change, role ambiguity and locus of control were supported. Job insecurity was found to be significantly related to attitudinal reactions such as intention to quit, organizational commitment, trust in the organisation and job satisfaction.

# CHAPTER 4.

## JOB INSECURITY

Job insecurity has become a matter of critical importance in South Africa. This is because the current rate of unemployment is very high and the rate of worker-level employment is lower than it should be in South African organisations (Westcott, 1995). Prolonged economic downturn has led to organisational responses such as mergers, takeovers, downsizing, closure and relocations, which in turn have been the cause of retrenchments and major changes in employment, the curtailment of privileges and expectations of the job, and a rapidly changing job structure (Greenhalgh & Rosenblatt, 1984). It has been noted that employees who have not lost their jobs may experience uncertainty over the continuity of their employment (Bargal et al., 1992), or else, may be subject to pressures to modify their jobs and accept different employment conditions (Jacobson & Hartley, 1991). The experience of job insecurity is not limited solely to organisations in crises, but can exist in any healthy organisation (Hartley et al., 1991). This is because the conditions that give rise to insecurity, such as acquisitions, mergers, job changes, and increased competition, already exist or can suddenly occur in any organisation, making any individual in any organisation potentially vulnerable to job insecurity (Roskies & Louis-Guerin, 1990). Consequently, job insecurity has proliferated in the work environment (Kuhnert & Vance, 1992), transforming traditionally secure jobs into insecure ones (Roskies, Louis-Guerin & Fournier, 1993). Thus, the uncertainty and instability of work due to constant organisational change and decline has created an insecure work environment for employees (Jick, 1985), causing feelings of stress, and insecurity regarding the nature and continued existence of their jobs (Ashford et al., 1989).

occurring as South Africans are awakening to the realisation that everything has changed. Since outside experiences affect individuals' attitudes at work (Bhagat et al., 1985; Odes¬ik-Duke, 1990), it follows that individuals' feelings of insecurity experienced in their life in general, will spill over into their work environment affecting their work attitudes, and in particular engender feelings of job insecurity. Hartley, Jacobson, Klandermans and van Vuuren (1991) suggest that job insecurity can be seen as a manifestation of more general uncertainty people experience throughout their lives in modern society. As peoples' jobs are a major part of their lives where they are provided with the opportunity to achieve personal feelings of growth and advancement (Goffee & Scase, 1992), a sense of disruption, threat, uncertainty, loss and reduced control felt in the lives of individuals will undermine the achievement of these goals, leading to perceived insecurity in their jobs.

The present study views change as comprising political, social and organisational changes. The literature demonstrates that the expectancy of change, as well as actual changes, and fears for the future, are associated with increased stress (Ashford, 1988; Cartwright & Cooper, 1993) and that changes lead to feelings of threat, powerlessness and insecurity (Ashford et al., 1989). Accordingly, the present research approach to stressful change is that it results in affective outcomes related to stress and job insecurity.

negative outcomes. If individuals perceive the environment as threatening, and become overwhelmed by the difficulty of decisions and the consequences, they may begin to display dysfunctional behaviours such as, apathy, withdrawal, a sense of purposelessness, lack of confidence, hypersensitivity, and mistrust (Veldsman, 1993).

**Reactions to stressful environmental change**

Individuals experience a sense of security, stability and order through the developed structure in both their private and work lives (Goffee & Scase, 1992). The structure and processes, of work and community which surround people, are perceived and appraised by individuals (Levi, 1992). Change for most people means a disruption in the life and work patterns to which they have become accustomed and comfortable with over time (Schweiger & Ivancevich, 1985). The introduction of an uncertain future in South Africa (Gxwala, 1995) is likely to disrupt established patterns, and cause individuals to feel as if they have lost control over important aspects of their environment (Conner, 1993), and when individuals' sense of control or predictability of their lives are threatened, strong reactions of powerlessness and insecurity are induced (Ashford et al., 1989). Insecurity is thus an inevitable consequence of change (Greenhalgh, 1982). This is reflected in the process of transition in South Africa which has resulted in a whole society experiencing dramatic political and social change This process has been enduring and beyond the control of the average individual, and has generated deep-rooted insecurity among South Africans (Simpson, 1993b). Similarly, the experience of a contracting economy with its inevitable consequences of organisational changes such as increased insolvencies and job losses has left employees feeling helpless, out of control and insecure (Simpson, 1993b). Fear of the unknown conflicts with individuals' desires of security, producing anxiety, and reducing personal sense of control (McKendall, 1993). Werth (1994) reports that the drastic changes in the country and in organisations bring about a loss of certainty about the future, loss of security, identity, confidence and sense of competence. This is all

The magnitude and frequency of change is a further factor in determining whether change will be appraised as stressful (Jick, 1985). Studies have reported that the frequency and intensity of changes are significantly associated with increased feelings of subjective stress among individuals (Motowidlo et al., 1986; Travers & Cooper, 1993). Gibson (1983) found that individuals expressed a preference for low levels of change, in that rapid changes significantly altered individuals' work roles, leading to low levels of job dissatisfaction, whereas a low amount of change had no negative impact. Shiu et al. (1993) also found that major social changes, that is events high in magnitude, resulted in stress outcomes. Furthermore, individuals' appraisal of change seems to alter over the duration of time. For example, Manz et al. (1990) study demonstrated several emerging themes during a period of organisational change. Employees displayed initial suspicion, uncertainty and resistance towards a new work design. They viewed it as a personal threat over which they had little control and in which they perceived little potential benefit for themselves. However, gradually they realised and accepted new possibilities posed by the change, which led to the individual's endeavour to develop and adapt to new modes of behaviour. This demonstrates that change may be ultimately adaptive, but only after enough time passes for the individual to adapt to the disruption (Amburgey et al., 1993). On other occasions, change processes may be very stressful for employees, that at the time, the short term costs could cancel out the benefits in the long term (Karasek, 1990).

The process of change, namely the identification of aspects in need of change, the way in which change needs to be effected, and the psychosocial dynamics accompanying change, will also influence individuals' appraisal of change and determine whether individuals will respond in an unhealthy way (Veldsman, 1993). Hence, the manner in which change is implemented is related to the outcome of stress (Travers & Cooper, 1993). Individuals need support and guidance in order to adjust to the changes and to avoid stress (Gluckman, 1990). A lack of support to enable employees to cope with the new realities of their environment and that the organisation has to address, is likely to result in

Change can be stressful due to the difficulty in moving away from a familiar old culture (Callan, 1993) and having to relinquish old attitudes and behaviour (Bridges, 1988), for example, South African organisations are having to renounce their old corporate cultures based on authoritarian top-down management paradigms (Gxwala, 1995). The old way of doing things becomes embedded in a stable and predictable environment, whereas efforts to try new things have in the past often led to failure. Individuals thus experience a sense of threat and emotional difficulty when undergoing learning experiences (Schein, 1993). The greater the amount of adjustment required by changes, the more stress it produces amongst individuals (Ashford, 1988; Matteson & Ivancevich, 1990).

**Individuals' appraisal of change**

Changes result in distinct psychological consequences for different individuals. For example, change may have positive consequences, have no significant effect upon individuals, or else, change may have negative effects, leading to minor disappointments or stress (Westlander, 1989). Like any potential stress inducing event, whether the change will be construed as a source of stress, will depend on how the individual appraises and evaluates the significance of the event (Pollock, 1988). Stress arises more from the perceptions which employees have as to the likely changes which may result, rather than the actual changes themselves (C. .wright & Cooper, 1994). Only if the event is perceived as having costs for the individual, will the event be classified as stressful (Matteson & Ivancevich, 1990). In addition, reactions to change depend on the extent to which individuals are aware of and understand the reasons for change, the extent to which they agree with these reasons for change, the extent to which they identify with the expected outcomes, and the extent to which change is reconcilable with their existing values and current practices and goals (Coetsee, 1993).

situation (McKendall, 1993). Through socialisation and training, employees develop the skills needed for their jobs, and this capability gives them a sense of competency and control. Thus, when change is introduced, employees must adapt by developing new skills (Ashford, 1988). Employees are often unable to cope with the discrepancy between their current levels of training and skills, and those now required with the change (Callan, 1993). Loss of competency may result from changes, and thus employees perceive change as increasing their risk of failure (Amburgey et al., 1993). Employees may then experience anxiety, associated with the inability or unwillingness to learn something new, because it appears too difficult or disruptive (Schein, 1993).

Muller (1992) proposed that when individuals experience changes in the South African business environment, and changes such as a new job, promotion, or company restructuring, they experience some form of threat as a result of having to adapt to a situation which is unfamiliar (Muller, 1992). A further psychological outcome of change in South African organisations is uncertainty (Werth, 1994; Wolmarans, 1995). Employees feel uncertain about how change will affect the nature of their work, career paths and coworker relations. With new procedures and social norms, employees become uncertain about which behaviours are appropriate and how their future behaviour will be evaluated (Ashford, 1988). Organisational change also implies a certain amount of loss (Wolmarans, 1995). Loss may be felt in a number of features of an individual's work through changes in procedures, including, a loss of status, loss of power, loss of position, loss of knowledge, loss of networks, and loss of job role or definition (Greenhalgh & Rosenblatt, 1984; Muller, 1992). A loss of work role makes employees become unsure about the behaviour, attitudes and values associated with their position, and accordingly they experience a further loss, of identity, status, and self-worth (Schlenker & Gutek, 1987). Moreover, as change, by its nature is unpredictable, individuals feel a loss of the known and a lack of control (Callan, 1993). Due to the proliferation of change in South African organisations, it is likely that individuals will experience a loss of certainty of their future and a loss of security in their jobs (Werth, 1994).

**Job dissatisfaction**

Job satisfaction reflects a positive emotional state resulting from the perception of one's job as fulfilling (Locke, 1983). Alternatively, the experience of job dissatisfaction is an unpleasant psychological state for the individual, as it means the employee is in a job that would preferably be avoided in some respects (Locke, 1983).

Job satisfaction is a common outcome of stress in organisations (Bhagat & Allie, 1989; Cooper & Cartwright, 1994; Decker & Borgen, 1993; Jamal, 1990; Sullivan & Bhagat, 1992). It is additionally related to the broader environment due to an interaction of the work and non-work domains of individuals' lives. Consequently, there is a spillover of the effects of life stress on organisational outcomes such as job satisfaction (Barling, 1990; Bhagat et al., 1985; Odesnik-Duke, 1990). Empirical studies indicate that stressful events experienced by individuals are consistently related to decreased levels of job satisfaction (Bhagat & Allie, 1989; Bhagat et al., 1985; Bluen & Barling 1987). In a study conducted within multiple industries on over 3 000 subjects, Steffy et al. (1990) demonstrated a significant association between stressful life events and job dissatisfaction. In addition, the occurrence of stressful organisational change has been associated with decreased levels of job satisfaction (Nelson et al., 1995; Sutherland & Cooper, 1992).

People respond affectively to jobs in terms of how they represent or perceive the job. Therefore, to the extent that job insecurity represents a constellation of perceptions regarding possible negative task events, it will be likely to have a negative effect on job satisfaction as the primary affective response to a job (Ashford et al., 1989). Moreover, job insecurity may cause a decrease in the intrinsic appeal of the job as employees may perceive that they are performing their tasks in order to maintain their job security. The perception of being extrinsically motivated may therefore make it difficult for employees to experience the intrinsic appeal associated with their jobs (Brockner, 1988). In

decreased emotional well-being, in that the women experienced a loss of identity, withdrawal, a loss of trust, a betrayal of expectations, self-doubt and depression (Earnshaw et al., 1990). In a study by van Vuuren et al. (1991), employees who felt insecure about their jobs reported more nervousness, guilt, sadness, fear and anger, and less pleasure and self-confidence than employees who did not feel insecure. Job insecurity has also been identified as a predictor of increased medical consultations for psychological distress (Catalano et al., 1986). Similarly, Joelson and Wahlquist (1987) found that employees who experienced problems such as anxiety and uncertainty about job stability sought more psychiatric help.

It appears that the accumulation of negative emotions resulting from the experience of job insecurity causes a decline in psychological well-being (Wilson et al., 1993) and an increase in symptoms of ill-health (Kuhnert et al., 1989), such that the level of distress rises proportionately with the degree of insecurity experienced (Roskies & Lolus-Guerin, 1990; Schweiger & Ivancevich, 1985). A study by Dekker and Schaufeli (1994) reported that following organisational change, job insecurity was associated with a deterioration of psychological health. It is thus possible that if change engenders negative emotions such as feelings of uncertainty, threat, sense of powerlessness, and other related emotions inherent in the job insecurity experience, the individual will experience psychological distress. A study by Gillis (1992) provided support for the notion that it is dysfunctional attitudes, and not the individual's actual circumstance, that has a direct relation with psychological distress. Moreover, Kelloway and Barling's (1991) study found that individuals experiences of employment mediated the relationship between organisational characteristics and mental health. Accordingly, the appraisal of job insecurity may mediate the relationship between change and psychological distress.

addition, Steffy et al. (1990) reported that undesirable stressful events were significantly associated with psychosomatic distress. Research has also indicated that during times of stressful organisational changes, employees' level of mental health decline significantly (Nelson et al., 1995).

Evidence suggests that job security is central to the psychological well-being of individuals (Khunert & Palmer, 1991; Wilson, Larson & Stone, 1993). Job insecurity encompasses much more than simply fear of losing one's job. Instead the prospect of demotion, deterioration in working conditions, or even the long term prospect of eventual job loss is associated with decreased well-being (Roskies & Louis-Guerin, 1990). Job insecurity reduces employees' psychological well-being in that individuals feel depressed, anxious and useless when they fear losing their jobs (Klandermans et al., 1991). The threat of a job loss is accompanied by a sense of instability and markedly reduced personal control (Jacobson, 1991a), and is linked to individual's feelings of competence and self-worth, thus constituting a fundamental threat to the employee's sense of identity (Kuhnert & Palmer, 1991). Job insecurity is an experience involving fear, anxiety, and potential loss (Ashford et al., 1989), where the potential loss concerns a vital aspect of employees' lives (Greenhalgh & Sutton, 1991).

Empirical studies have shown that job insecurity is significantly associated with psychological distress (Dooley et al., 1987; Khunert & Palmer, 1991; Nelson et al., 1995; Roskies & Lolus-Guerin, 1990; van Vuuren et al., 1991). Orpen (1993) reported that in a South African sample, job insecurity was positively related to anxiety and depression, whereas, Kuhnert et al. (1989) found that job insecurity was significantly associated with increased symptoms of ill-health, such as depression, and somatic complaints. Jacobson (1987) demonstrated that as a result of perceived job insecurity, individuals experienced demoralisation, fear, panic, shock, suspicion and anger. They also experienced a sense of helplessness, lack of control, and somatic symptomatology such as lack of sleep, headaches, stomach disorders, and fatigue. A study of professional women reported that perceived job insecurity was related to

## CHAPTER 5.

## STRESS REACTIONS

The term stress reactions is defined as undesirable personal effects of stressful experiences from the domains of both work and non-work and is represented by cognitive, affective and behavioural reactions to stress (Bhagat & Allie, 1989). In the present study, the variables psychological distress, job dissatisfaction and reduced organisational commitment are examined as dimensions of stress reactions resulting from stressful environmental change and perceived job insecurity.

### Psychological distress

Psychological distress involves a whole complex of mutually interrelated affective, cognitive and behavioural processes. It is characterised by such phenomena as anxiety, depression, a sense of uselessness, lack of self-confidence (Klandermans et al., 1991), irritability, fatigue, headaches and insomnia (Dekker & Schaufeli, 1995).

It is stated that psychological strain is the most common outcome of stressful experiences (Pane, Lane & Leahy, 1989). Empirical studies report that a substantial relationship exists between life events and psychological distress (Bhagat & Allie, 1989; Glickman, Tanaka & Chan, 1991; Shrout et al., 1989; Wagner et al., 1988). Stressful changes have been related to poorer mental health (Sutherland & Cooper, 1992), and other symptoms such as depression (Brown et al., 1994; Ensel & Lin, 1991; Hammon, 1992; Simons et al., 1993; Valiant, 1993) and anxiety (Eden, 1990; Miller, 1989; Russell & Davey, 1993). Stressful events in the workplace have also been shown to be significantly related to psychological distress (Bhagat & Allie, 1989; Invancevich, 1986). Motowidlo et al. (1986) demonstrated that both frequency and intensity of stressful events were associated with psychological distress symptoms. In

Ashford's et al. (1989) study illustrated that the greater the amount of change experienced by individuals, the greater their perceived job insecurity. It follows that the experience of environmental change is stressful for individuals (Ashford, 1988). Stress, in turn, cannot be defined without reference to the strain or responses made by individuals, since these cognitive reactions are an important aspect of the stress process (Baum et al., 1981). Insecurity concerning job loss and job changes thus leads to stress-related psychological outcomes for individuals (Schweiger & Ivancevich, 1985). In the present study, change is viewed as an antecedent of job insecurity and stress reactions as a consequence of job insecurity.

such as economic instability (Bargal et al., 1992; Earnshaw et al., 1990; Jacobson, 1987), and political factors such as a governmental policies (van Vuuren et al., 1991). Hartley et al. (1991) suggest that job insecurity should be seen as a manifestation of more general uncertainty people experience throughout their lives in modern society. The old certainties and stabilities of life, community and work have disappeared, and instead many people face considerable change, uncertainty and insecurity in their place of living and employment.

Empirical results have demonstrated that environmental change such as economic downturns have been associated with job insecurity (Bargal et al., 1992; Catalano et al., 1986; Earnshaw et al., 1990). In a study by van Vuuren et al. (1991), employees attributed their feelings of job insecurity to causes such as governmental policy, the economic situation, raised educational demands, new technology, and managements' decision-making. Dooley et al. (1987) found that undesirable job events were positively associated with perceived job insecurity, and Jick (1985) found that changes in work procedures, layoffs and reductions in resources led to perceived job insecurity. Orpen (1993) reported that employees felt more insecure about their jobs with the onset of organisational restructuring. In fact, Dekker and Schaufeli (1995) stated in their study that one of the greatest worries experienced by employees during organisational change is uncertainty about the continuation of ones job. Empirical evidence has also demonstrated that layoffs in organisations engender feelings of job insecurity in survivor employees (Brockner, 1988; Davy, Knicki & Scheck, 1991). For example, Greenhalgh (1982) showed that employees experienced job insecurity after a merger, and Newman and Krzystofiak (1993) reported a drop in satisfaction with job security after an acquisition.

operate as a mediator variable (Brockner, 1988; Greenhalgh, 1982). For example, Jacobson (1991b) described job insecurity as "an internal event reflecting a transformation of beliefs about what is happening in the organisation and environment" (p.15). Sequin and Roskies (1993) reported that it was the subjective perception of risk or insecurity that provided the link between a stressful situation and the resulting distress. Furthermore, Ashford et al. (1989) stated that their study provided support for research showing that major changes are likely to have some significant indirect effects on employees and organisations through feelings of job insecurity. In addition, Roskies and Louis-Guerin (1990) questioned whether objective indices or events, such as job losses in an organisation, had any direct influence on individuals' mental health and work commitment beyond that mediated by the appraisal of job insecurity. They found that the objective indices made no direct contribution to the prediction of individuals' mental health, and a only a small contribution to commitment; whereas, the subjective perception of job insecurity explained a large percentage of the variance in both outcomes. From these findings, they concluded that perceived job insecurity operated as a mediator variable.

According to the description of job insecurity as a mediator variable, it follows that job insecurity is both an antecedent and a consequence of numerous variables (Ashford et al., 1989).

## Antecedents of Job Insecurity

### Change and job insecurity

Researchers have recognised that a variety of technological, organisational and broader social changes have changed the nature of jobs, by reducing employees' job security (Goffee & Scase, 1992; Khunert & Vance, 1992; Roskies & Louis-Guerin, 1990). The perceived intensity of threat to job security is influenced by organisational factors such as, job reorganisations, mergers, downsizings, new technology (Greenhalgh & Rosenblatt, 1984), social factors

In the present study, it is explored whether job insecurity operates as a mediator variable as opposed to a moderator variable for a number of reasons:

Since, the present study examines job insecurity within a stress framework, it should heed to the concepts and criticisms of stress research. Stress is seen as combining three main conceptual domains; the sources of stress, the mediators, and the manifestations of stress (Pearlin, Lieberman, Menaghan & Mullan, 1981). It follows, that the inclusion of a mediator in an empirical model is important in stress research. A criticism by Steptoe (1991) is that stress research has identified many factors, such as social support and personal resources, as relevant to the relationship between stressors and symptoms. Thus, an understanding in the interaction between stressors and resources in how they generate stress responses (i.e., the effects of moderators on the stressor-strain relationship) already exists. Yet, the mechanisms or pathways through which stressors result in symptomatology (i.e., the effects of mediators on the stressor-strain relationship) are poorly understood. Steptoe (1991), therefore, argues that it is now time for stress research to focus on the mediating processes of stress. Furthermore, as the present study postulates that job insecurity may act as the mechanism through which stressors are appraised as threatening, which in turn causes stress reactions, and since, it is a function of a mediator to establish the process through which influences are transmitted and relationships established (James & Brett, 1984), and not that of a moderator, it follows that perceived job insecurity should act as a mediator rather than a moderator.

There is a deficit in the literature on job insecurity, in that causal relationships between change, stress and individuals' attitudes are undetermined (Hartley et al., 1991). Research on job insecurity as a mediator may fill this gap by supplying knowledge of the causal nature of these relationships. There is also evidence showing that perceived job insecurity does not function as a moderator of stressful life events and stress reactions (Dooley et al., 1987), whereas, research has supported the notion that job insecurity has potential to

rather then eliminating the relationship between the independent and dependent variables altogether. Therefore, Baron and Kenny (1986) state that from a theoretical perspective, a significant reduction demonstrates that a given mediator is indeed potent, though not both a necessary and a sufficient condition for an effect to occur.

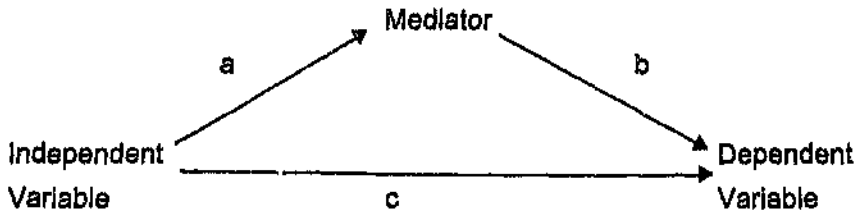



Figure 1. Mediational model.

Baron and Kenny (1986) further emphasise the need to clarify whether one is testing a mediator or moderator type of model, because researchers have often confused the terms *mediator* and moderator, using the terms interchangeably. A moderator is a variable that affects the direction *and/or* strength of the relation between an independent or predictor variable and a dependent or criterion variable (Baron & Kenny, 1986). In other words, a variable is a moderator if the relationship between another variable is a function of the level of that variable, whereas, a variable is a mediator when it functions as the process through which influences are transmitted and relationships established (James & Brett, 1984). The difference between the two, is that a moderator functions as a variable that buffers or conditions a relationship, whereas a mediator is able to show what causes the relationship. An example of a mediation model is when the effects of the work environment (antecedents) are transmitted to affective outcomes (consequences) by intervening job perceptions (mediators) (James & Brett, 1984). Accordingly, the model in the present study represents a mediation model in which the effects of individuals' environment (antecedent) are transmitted to stress reactions (consequences) by intervening perceptions of job insecurity (mediator).

## Job insecurity as a mediator

Researchers have defined job insecurity as a strain variable, whereby change leads to perceived job insecurity (Ashford et al., 1989; Greenhalgh, 1982; Jick, 1985). Job insecurity has also been defined as a stressor variable (Bargal et al., 1992; Klandermans et al., 1991; Roskies & Louis-Guerin, 1990; Roskies et al., 1993), in that job insecurity leads to stress outcomes such as resistance to change, intention to quit, reduced commitment, diminished job involvement and job dissatisfaction (Ashford et al., 1989; Greenhalgh & Rosenblatt, 1984; Greenhalgh & Sutton, 1991; Klandermans et al., 1991). Thus, change can be stressful for employees, and lead to stress and job insecurity, which in turn may result in various strain outcomes (Jick, 1985; Schweiger & Ivancevich, 1985). Job insecurity, therefore, appears to be an important intervening variable between employees' beliefs about the change situation and their attitudinal responses (Greenhalgh, 1982). It follows that the psychological state of job insecurity may act as a mediator between change and individuals' attitudinal outcomes (Brockner, 1988).

The theoretical operationalisation of a mediator is usually based on a causal model, whereby influences of an antecedent are transmitted to a consequence through an intervening mediator (James & Brett, 1984). Baron and Kenny (1986) specify that a variable may function as a mediator when variations in levels of the independent variables significantly account for variations in the presumed mediator (Path *a*), variations in the mediator significantly account for variations in the dependent variables (Path *b*), and when Paths *a* and *b* are controlled, a previously significant relationship between the independent and dependent variables is no longer significant, with the strongest demonstration of mediation occurring when Path *c* is zero. When Path *c* is zero, there is strong evidence for a single dominant mediator, whereas if Path *c* is not zero, this indicates the operation of multiple mediating factors (see Figure 1). Because psychology treats phenomena that have multiple causes, a more realistic goal would be to seek mediators that significantly decrease Path *c*,

The individual experiencing job insecurity perceives a potential loss of continuity in terms of either a permanent loss of the job itself or loss of important features of the job (Ashford et al., 1989; Greenhalgh & Rosenblatt, 1984). Loss of valued job features is experienced as a type of job loss inasmuch as it involves losing the job as the affected employee currently knows it (Greenhalgh & Rosenblatt, 1984). Job features that an individual may fear loosing include career progression, level of pay, expected future raises, or a potential loss of less tangible properties of jobs, such as status, autonomy, resources, or interpersonal relations (Greenhalgh & Rosenblatt, 1984; Klandermans et al., 1991). Job insecurity may be disruptive without necessarily leading to tangible loss, it may grow insidiously and become a relatively fixed and ongoing daily experience (Jacobson, 1991a). In addition, loss may include concern about significant deterioration in terms and conditions of employment (Roskies & Louis-Guerin, 1990). Job loss is usually seen as negative, that is, in terms of the degree to which it is likely to harm the individuals chances of achieving, obtaining or maintaining important values, resources or objectives at work (Klandermans et al., 1991). The experience of job insecurity, however, occurs only in the case of involuntary loss. For example, having left a job by choice, an individual might have given up valued job features and might consequently experience a sense of loss, but as this individual would not be powerless to maintain continuity, he or she would not experience job insecurity (Greenhalgh & Rosenblatt, 1984).

With the experience of job insecurity, individuals experience a perceived lack of control (Ashford et al., 1989). This lack of control is due to feelings of helplessness over the unfolding developments regarding the prospects for job continuity (Jacobson, 1987). When the future becomes less predictable and the individual is suddenly faced with questions that may not have arisen in a continuing and secure environment, the individual experiences anxiety as a result of reduced personal control (Jacobson, 1991a). In addition, as the experience of job insecurity is prolonged, the employee's feelings of loss of control and powerlessness becomes increasingly intense (Earnshaw et al., 1990)

Job security is seen by individuals as a desirable state of equilibrium which they want to maintain, whereas job insecurity is perceived as a major disruption of ordinary routine, interpersonal relations, and the ability to function normally both in and out of work (Jacobson, 1987). Job insecurity disrupts and dramatically alters the way in which employees relate to their employment setting (Jacobson, 1991a). Employees' work experiences and aspirations are radically altered in that with less security individuals perceive that they are unable to pursue orderly predictable career paths (Bargal et al., 1992). With the experience of job insecurity, individuals experience a change in orientation to an existing work role. The shift is engendered by changes in individuals' assumptions concerning themselves, the surrounding internal and external organisational environment, and the relation between themselves and the environment (Jacobson, 1991a). Feelings of job insecurity disrupt the structural dimensions of a job such as a social identity conferred by the employment context, involvement in collective activity, social networks, and regular financial compensation, and therefore fail to provide the same role-confirming function as before the insecurity experience (Jacobson, 1991a).

A salient feature of job insecurity is the feeling of uncertainty. With changes, individuals experience a sense of uncertainty or a perceived lack of predictability which engenders feelings of job insecurity (Ashford et al., 1989). Feelings of unpredictability characterise the job insecurity experience in that individuals have difficulty in anticipating the outcomes of the job insecurity situation (Jacobson, 1987). Specifically, individuals have difficulty in predicting how components of the environment are changing, difficulty in predicting what the impact of events or changes will be on continued job security, and difficulty in deciding what responses are available (Jacobson, 1991a). Concerns and fears surrounding possible job change or job loss develop from feelings of uncertainty or perceptions of what might happen and how their careers will be affected (Matteson & Ivancevich, 1990). As a result, feelings of job insecurity are accompanied by fear of risking and clinging to the known (Earnshaw et al., 1990).

towards the future of the country, in that a high percentage of people thought that the relationship between races was deteriorating, that their economic situation would worsen in the future, and a low percentage of people foresaw a happy future for all races in South Africa (Markinor, 1994). However, at the time of elections, people also experienced excitement and optimism towards the future of the country (Markinor, 1994). In accordance with these changes, organisations have been involved in mass changes, developing new visions for the future (Malimela, 1994; Mdongo, 1995). This creation of a new future and the adjustment to major redefinitions of social, political and organisational foundations has created feelings of stress among individuals (Coetsee, 1993). Therefore, at the time of measurement of the present study, it was likely that South African individuals were subject to much stress.

**Sample**

The sample for the present research was drawn from three organisations: the workforce of a retail outlet ($n$=90), the administration of an educational institution ($n$=91), and an organisation involved in tourism and leisure ($n$=86).

Different types of organisations were included in the sample to increase generalisability (Cook & Campbell, 1979). Also an attempt was made to include organisations where their employees were located in different geographical regions, so that the sample would have a wider application to the population. Nearly 70% of South Africa's population live and work in the Gauteng area, which is dominated by the city of Johannesburg, the main manufacturing, commercial and administrative centre in the country (Bennell & Monyokolo, 1994). The sample was therefore drawn from the Gauteng area, mainly from Johannesburg, but also included subjects from the North West and Eastern Transvaal regions. It was expected that a range of stressors would be experienced across the different organisations and geographical regions which would provide a representative sample.

# CHAPTER 7.

# METHOD

## Research design

The present research is a cross-sectional study in which all data are collected at one point in time (Spector, 1994). While the data are drawn from a cross sectional survey, there are several features which make it a basis for substantially stronger causal inferences than could normally be drawn from cross sectional data. In time ordering, environmental and job changes generally precede health status information (Karasek, 1990). The independent variable, stressful environmental change, is measured in terms of the impact of changes that have occurred in the past year; whereas, the mediator and dependent variables are measured in terms of present perceptions or recent feelings and are representative of near term health status and attitudes. Thus, the probability of the stressor preceding dependent variables is very likely. In addition, the data is analysed by multivariate statistics, namely, LISREL, which in terms of the model infer causality (Jöreskog & Sörbom, 1993).

## Setting

The present study was conducted in the months of February and March preceding general elections in April 1994. The elections occurred as a culmination of years of effort in which South Africa had been engaged in a difficult process of negotiation (King, 1994). This was a period of much uncertainty, insecurity and conflict, with the past four years being amongst the most brutal in terms of violence in the history of South Africa (Simpson, 1993a). In the months preceding elections, there was a crescendo of violence resulting in havoc, deaths and general destruction (Malimela, 1994). There were even a series of bomb blasts prior to the elections (SAIRR, 1995). A survey showed that during the year preceding elections, many South Africans were pessimistic

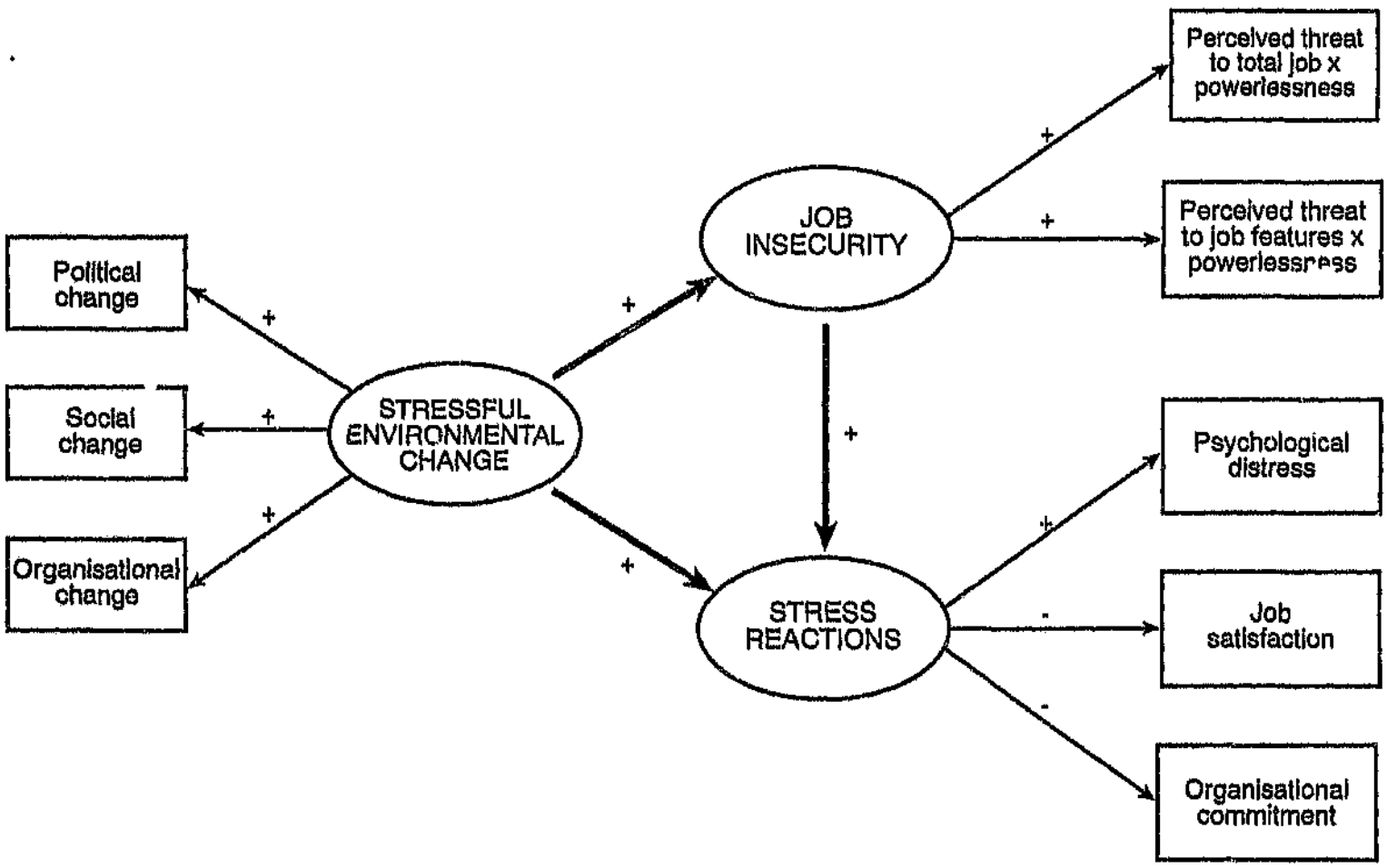



**Figure 2.** Theoretical model to be tested in the present study. Latent variables within circles, manifest variables within squares. Casual relationships are drawn with thick lines, empirical with thin lines. Plus signs indicate a positive relationship, negative signs indicate a negative relationship.

state that every stress study undertaken must recognise its position of relative contribution to the stress process. Given the intricacy of stress, no single study will completely elucidate the stress process. The present study is thus an initial attempt to delineate part of the stress process as consisting of a causal antecedent or stressful environmental change (indicated by social, political and organisational change), a mediating process or perceived job insecurity (indicated by perceived threat to total job x powerlessness and perceived threat to job features x powerlessness), and effects of stress reactions (indicated by psychological distress, job dissatisfaction and reduced organisational commitment). The proposed model is presented in Figure 2.

## The research questions

The proposed model is tested with the aim to address whether:

1. stressful environmental change has a direct causal relationship with stress reactions.

2. stressful environmental change has a direct causal relationship with perceived job insecurity.

3. perceived job insecurity has a direct causal relationship with stress reactions.

4. perceived job insecurity mediates the relationship between stressful environmental change and stress reactions.

for some of the unexplained variance in stress symptoms, and aid in the understanding of the mechanism through which stress leads to symptoms.

It is also noted that the interactive processes between the stressful environment, the appraisal of the stressor and the stress reactions are extremely complex and poorly understood (Levi, 1990). Thus, the complexity of stress-related phenomenon is best understood by casting a wide variety of variables in an interdisciplinary framework (Sullivan & Bhagat, 1992). This is acknowledged in the adoption of multi-variate research designs in the recent stress literature (e.g., Hendrix et al., 199.; Israel et al., 1989; Jerusalem, 1993; Jex et al., 1991). The present study, therefore, adopts a multi-variate research design in the attempt to gain a more comprehensive understanding of the multiplicative relationships between variables in the stress process.

With the increasing complexity of the stress process, it has been recognised that structural equation modelling is a useful tool in theory formulation and causal testing. This procedure allows complex models to be described and tested, and further allows for the cumulative inclusion of new variables into previously constructed and tested models. It can also incorporate multiple levels for measurement of each construct to strengthen validity considerations in a multitrait-multimethod fashion (Schafer & Fals-Stewart, 1991). This is necessary because research deals with psychological explanations of complex phenomena (Kerlinger, 1986), in which the variables of interest are unobservable constructs which are difficult to capture validly and reliably with single indicators (Jöreskog, 1993). Structural equation modeling techniques recognise that observed variables are not perfect measures of the constructs they are supposed to measure, and thus assesses each construct by multiple observable indicators (Lavee, 1988). Therefore, the intention of the present study is to determine the nature of causal relations between the constructs examined using structural equation modeling techniques. With this technique, a tentative model is specified, with the aim of model generation rather than confirmation (Jöreskog & Sörbom, 1993). Schafer and Fals-Stewart (1991)

insecurity is a form of cognitive appraisal (Jacobson, 1991a, 1991b), and that it should be linked to models of stress (Khunert & Vance, 1992). Perceived job insecurity has the potential to act as a mediator (Brockner, 1988; Roskies & Louis-Guerin, 1990), in that events are stressful and meaningful only insofar as they are perceived and acknowledged by individuals in terms of their importance, perceived severity and the degree of uncertainty (Jick, 1985). Furthermore, the mere anticipation of negative outcomes in terms of job insecurity may precipitate measurable stress reactions, suggesting that perceptual conditions are at least relevant in predicting responses as is the objective intensity of the stressor (Jacobson, 1991a). The present study, thus, explores whether stressful events are appraised by individuals as threatening and engendering perceptions of powerlessness or lack of control, resulting in the psychological state of job insecurity, which in turn leads to stress reactions.

Research has demonstrated a direct linkage between stressful environmental change and stress reactions (Eden, 1990; Bhagat & Allie, 1989; Nelson et al., 1995; Shiu et al., 1993), and implied that change results in job insecurity and stress reactions (Ashford et al., 1989; Dekker & Schaufeli, 1995; Greenhalgh & Rosenblatt, 1984). However, research has not addressed whether stressful changes directly affect these constructs, or if perceived job insecurity mediates the effect of such change on outcomes. Due to the cross-sectional nature of the research, causal relationships between change, job insecurity and work attitudes are undetermined (Hartley et al., 1991). Stressors are shown to predict job insecurity and job insecurity is shown to predict outcomes, but each relationship is predicted separately. The complex network of hypothesised relations and mediating processes between stressors, perceptions of job insecurity and stress reactions has not been empirically tested as a whole within a common model structure. A further aim of the current research is to assess whether perceived job insecurity operates as a mediator in the relationship between stressful environmental change and stress reactions. An investigation of whether job insecurity acts as a mediator variable in a stress model may extend our knowledge as to whether additional variables account

It has been suggested that these two-variable designs, in which stressors are correlated with outcomes, are limited because they do not assess the possible effects of mediating variables (Jex et al., 1991). Mediators may aid in increasing the correlations between variables as the inclusion of additional variables may account for some of the unexplained variance in symptoms, and help to control for possibly spurious relationships with other variables (Dooley et al., 1987). In addition, very little is known about the processes causing these relations (Jex et al., 1991), and the inclusion of mediators could provide more information on how or why a certain stressor is evaluated as stressful (Newton, 1989). Hence, cognitive mediators may aid in the understanding of the mechanism through which stressors lead to stress reactions (Steptoe, 1991). It has, therefore, been suggested that future research extend the direct link between change and stress by examining the intervening mechanisms through which change leads to stress outcomes (Latack, 1984). As a result, recent studies have begun to explicate various psychological variables as key intervening mediator factors in the stress process (Ensel & Lin, 1991; Israel et al., 1989).

Job insecurity has been identified as a relevant variable to be examined due to its link with stress (Ashford et al., 1989; Bargal et al., 1992; Heaney et al., 1994) and its proliferation in the workplace (Kuhnert & Vance, 1992). A review of the literature demonstrates that the appraisal of the stress process is linked to the perception of job insecurity. For example, it has been shown that the appraisal of stress is linked to feelings of uncertainty (Ashford, 1988), threat (Jerusalem, 1993), helplessness (Fleming, O'Keefe & Baum, 1991), lack of control (Baum et al., 1981) and loss (Jerusalem, 1993). The links between feelings of powerlessness and lack of control are well recognised as mediators of the stress response (Cooper & Cartwright, 1994). Similarly, perceptions of job insecurity are related to feelings of uncertainty (Ashford et al., 1989; Jacobson, 1991a), threat (Greenhalgh & Rosenblatt, 1984; Jacobson, 1987), helplessness (Jacobson, 1987), lack of control (Ashford et al., 1989) and loss (Greenhalgh & Rosenblatt, 1984). Furthermore, it is recognised that job

# CHAPTER 6.

## AIM AND RATIONALE

There has been an increase in the salience of stress and a burgeoning body of research based on the assumption that the work and non-work environments are becoming more stressful (Bhagat & Allie, 1989; Dooley et al., 1987; Hendrix et al., 1991). It is commonly accepted that change leads to stress (Jerusalem, 1993), thus a stressful environment has been shown to be significantly related to a variety of stress reactions (Brown et al., 1994; Bhagat & Allie, 1989; Dressler, 1991; Shiu et al., 1993; Valient, 1993). Many stressors linked to the macro-environment are relevant to the experience of individuals and are often the root causes of stress (Handy, 1988). Yet, research has neglected the study of such macro-stressors including socio-economic pressures, high unemployment, intergroup tensions and so forth (Martin, 1989). Furthermore, research has rarely concentrated on how widespread organisational change affects individuals within organisations (Nelson et al., 1993). Some researchers have focused on the beneficial outcomes of such change, but the negative consequences have been largely ignored (Callan, 1993; McKendall, 1993). The present study therefore attempts to address this deficit in the literature by focusing on the disruptive impact that changes within the macro-environment and organisations have on individuals.

Researchers have grown increasingly dissatisfied with their inability to predict consistently the causes or effects of stress (Barley & Knight, 1992). This has applied in particular to life event studies. Conventional life event studies have assumed a direct cause and effect relationship between life events and symptomatology (Pollock, 1988). Although these studies have reported significant correlations between stressors and strain, these correlations have been modest, in that life events have not accounted for a substantial portion of the variance in the stress-related dependent variables (Kessler et al., 1985; Russell & Davey, 1993; Shrout et al., 1989; Vossel, 1988; Wagner et al., 1988).

Research has demonstrated that individuals who perceive their organisation as undependable in carrying out their commitments to employees, 'nose faith in the organisation and as a result their attachment and commitment to the organisation diminishes (Ashford et al., 1989). For example, Earnshaw et al. (1990) found that employees felt cheated and disillusioned by their employer and responded with decreased trust, withdrawal from their job and i ıcreased self-interest. Other studies have also shown that feelings of job insecurity are significantly rel ıted to decreased organisational commitment (van Vuuren et al., 1991). More specifically, Greenhalgh (1982) found that workers' reactions to a merger were to become insecure about their job futures and less committed to the organisation, and Brockner (1988) reported that perceptions of the severity of a layoff were negatively associated with organisational commitment.

Stressful changes are not necessarily directly linked to reduced organisational commitment. For example, in terms of organisational change, loyal workers would be willing to tolerate some degree of organisational change since they would identify with its general goals (Greenhalgh & Sutton, 1991) and in terms of the psychological contract expect some benefits from the change. However, if individuals feel disadvantaged by the change, their commitment to the organisation is reduced (Carnall, 1986). Therefore, if individuals feel threatened by changes, they may experience a lack of organisational commitment. It is therefore possible that change indirectly leads to reduced commitment through the effects of job insecurity. Accordingly, perceived job insecurity may act as a mediator to the relationship between change and commitment.

(Bhagat, 1983), thus reducing concern for the organisation. The effects of stressful life events on work related attitudes have, however, not been sufficiently investigated (Bhagat & Allie, 1989), specifically with regard to organisational commitment, as the literature does not provide much evidence of this relationship. Nevertheless, it has been noted that stressful changes in the macro-environment such as poor economic times leads to the demise of employee loyalty to organisations (Robinson & Rousseau, 1994) and that stressful change within organisations is likely to result in reduced willingness of employees to be involved with the organisation (Bargal et al., 1992).

Job insecurity is likely to lead to reduced organisational commitment (Guest, 1992). The principle of reciprocity applies in that employees decide what to give the organisation in terms of effort on the basis of what the organisation provides them (Ashford et al., 1989). Employees maintain commitment to those organisations that show signs of commitment to their employees, therefore, during times of insecurity this reciprocal relationship is severely threatened (Bargal et al., 1992). Job insecurity may threaten individuals' attachments to their organisation, because individuals may perceive that the organisation has abrogated the psychological contract of employment as a result of a threat to the job features or to the entire job (Ashford et al., 1989). This psychological contract represents expectations about unspecified conditions of work, one of which is that employees assume their loyalty and commitment will be reciprocated (Newman & Krzystofiak, 1993). The experience of violation to the psychological contract goes beyond feelings of disappointment for employees and produces feelings of betrayal (Robinson & Rousseau, 1994). Unfulfilled expectations often lead to feelings of being cheated since rewards that were promised are no longer on offer (Goffee & Scase, 1992). Such negative experiences in turn result in reduced commitment to the company. This demonstrates that employees whose experiences within the organisation are inconsistent with their expectations and do not satisfy their basic needs tend to exhibit a lower commitment to the organisation than those whose experiences are more satisfying (Guest, 1992; Meyer et al., 1993).

components of job insecurity, then the changes will be perceived as reducing the appeal of the job to the individual, and in turn result in job dissatisfaction. Consequently, if an individual experiences negative perceptions or job insecurity, it is possible that the individual will experience job dissatisfaction. Job insecurity is, therefore, likely to act as a mediator in the relationship between change and job dissatisfaction.

**Reduced organisational commitment**

Organisational commitment refers to the nature of an individual's relationship to an organisation, such that a committed individual will indicate a strong desire to remain with the organisation, a willingness to exert effort on behalf of the organisation, and a belief in the values and the goals of the organisation (Mowday, Porter & Steers, 1982). Commitment is a psychological state that characterises the employee's relationship with the organisation. Employees with commitment remain with the organisation either because they want to, or because they need to, or because they feel they ought to (Meyer, Allen & Smith, 1993). Psychological attachment to an organisation affords individuals a chance to develop a sense of belonging and to derive personal meaning from their work experiences, and consequently feel good about themselves (Romzek, 1989). Alternatively, when individuals' commitment is reduced, their work has less meaning and their needs and desires are not satisfied by the organisation (Steers, 1977).

There is ample evidence that stress operates as an antecedent of organisational commitment (Bhagat et al., 1985; Cooper & Cartwright, 1994; Hendrix et al., 1991; Jamal, 1990; Sullivan & Bhagat, 1992). This may be explained in that when individuals experience job stress, their feelings of loyalty towards the organisation may be reduced, as they may place the blame for the adversity upon the organisation (Jamal, 1984). In addition, when individuals experience general life stress, concern for problems in their life may assume a crucial role and influence or take precedence over job related concerns

addition, a major component of job insecurity is a threatened loss of intrinsic aspects of the job such as autonomy, status, creative endeavour and opportunity for career advancement (Earnshaw et al., 1990). Accordingly, the intrinsic appeal of employees' jobs may be further reduced, thus increasing employees' job dissatisfaction. Furthermore, as a result of job insecurity, individuals may feel that the psychological contract between themselves and the organisation has been broken since the organisation has introduced a threat to the job instead of providing a secure job (Ashford et al., 1989). When employees encounter a contract violation their satisfaction with the job is reduced. This occurs because the discrepancy between what was expected and what has been received is a major source of dissatisfaction. Also what the employer promised but failed to provide may often be the aspects of work which are important sources of job satisfaction (Robinson & Rousseau, 1994).

Perceived job insecurity has been s... .. to be empirically related to job dissatisfaction (Ashford et al., 1989; Davy et al., 1991; Heaney, Israel & House, 1994; van Vuuren et al., 1991). Newman and Krzystofiak (1993) reported lower levels of job satisfaction as a result of declining job security after an acquisition. Israel et al. (1989) found that job satisfaction was predicted primarily with having influence at work, and having feelings of job security, and Jha (1988) reported that job future ambiguity emerged as a predictor of job dissatisfaction. Whereas, Klandermans' et al. (1991) study demonstrated that the more stress individuals experienced from job insecurity, the more dissatisfied they became with their job and work environment.

Change, such as organisational change, may alter job characteristics such as changes in the challenge of the job, autonomy and status. This then triggers changes with the related dimensions of job satisfaction, such as opportunity for gro· 'h on the job. Therefore, when a change in job characteristics produces negative perceptions of dimensions of the job, dissatisfaction results (Newman & Krzystofiak, 1993). Furthermore, if changes result in negative perceptions of uncertainty regarding the future of the job and lack of control, which are

LISREL is based upon factor analysis, regression analysis, and analysis of variance, but is a far more complex and powerful method (Stage, 1989). The general LISREL model contains a wide range of more specific models, such as confirmatory factor analysis and simultaneous equation systems (Cadwallader, 1987). Factor models deal with the measurement properties of constructs by estimating the common and unique variance of sets of measured variables. Researchers seek the common factors that underlie a set of measured variables, whereby a common factor is a latent, unobserved entity, of which its meaning is inferred from the measured variables it underlies (Lavee, 1988). Structural equation models are concerned with the structural or causal relationships among a set of variables some of which are independent or exogenous, and others dependent or endogenous variables (Stage, 1989). Simultaneous equations with many endogenous variables, measurement error, and multiple indicators of constructs are considered, thus allowing more general measurement models then traditional factor-analytic structures (Bollen & Long, 1993). Because each equation in the model represents a causal link rather than a mere empirical association, the structural parameters do not, in general, coincide with coefficients or regressions among observed variables. Instead, the structural parameters represent relatively unmixed, invariant and autonomous features of the mechanism that generates the observed variables. To serve these purposes, the use of structural equation models require statistical tools that are based upon, but go well beyond conventional regression analysis and analysis of variance (Jöreskog & Sörborn, 1989).

**LISREL theory**

The LISREL model consists of two distinct analyses that are approximated simultaneously: the measurement model and the structural equations model (Jöreskog, 1993; Jöreskog & Sörborn, 1993).

often correlated (Lavee, McCubbin & Patterson, 1985). As a result, it is difficult to infer complex causal relationships among variables that are not directly observable, but that are reflected as fallible variables (Jöreskog & Sörbom, 1989).

Such concerns about the reliability and validity of empirical measurements, and the need to formulate a strategy for studying structural relationships among variables that better represent theoretical constructs, have led to the development of a new approach. This approach is known as **latent variable structural equation models** or as **LISREL** (**LI**near **S**tructural **REL**ationships) after the statistical computer programme developed by Jöreskog and Sörbom (1993) to analyse covariance structure models (Lavee, 1988). This programme has become so important in the social sciences that LISREL now stands for both a statistical package and an approach to data analysis (Stage, 1989).

LISREL is based on a general model which assumes that there are two basically different kinds of psychological variables: observed variables and latent variables or hypothetical constructs (Jöreskog & Sörbom, 1993; Vollmer, 1985). The relationship between observed variables and latent variables is assumed to be of a causal kind in that observed variables are effects of latent variables. Observed variables can for this reason be used as indicators of latent variables. Hence, the general aim of LISREL is to estimate the true, underlying causal relationships between latent variables on the basis of observed variables (Vollmer, 1985).

By assessing each latent variable by multiple observable indicator variables, LISREL recognises that observed variables are not perfect measures of the constructs they are supposed to measure, and further permits for measurement errors and correlated residuals (Lavee, 1988; Mason-Hawkes & Holm, 1989). Accordingly, LISREL is able to evaluate postulated causal relationships among latent variables which represent the 'true' substantive phenomena one intends to measure (Chen & Land, 1990).

## Statistical analysis

The present study uses a multivariate statistical package, LISREL (Jöreskog & Sörbom, 1993), to analyse the proposed model. An explanation of the LISREL theory and the programme is presented before the discussion of results.

### Background to LISREL

There has been a growing interest among social scientists in testing multivariate theoretical models (Lavee, 1988). This is because social science research deals with psychological and social explanations of complex human and social phenomena. They, therefore, require both elaborate theories and complex methods of conceptualising and analysing data. To date, multivariate analyses seem to be the most promising way to accomplish these goals. However, with the theoretical and practical advances which accompany multivariate analyses, there are also methodological problems (Kerlinger, 1986). Broadly speaking there are two key problems in social science research. The first concerns the measurement of variables, and the second concerns causal relations (Jöreskog & Sörbom, 1989).

One of the most difficult problems of social scientists is working with unmeasurable concepts. Many of the variables of interest are unobservable, complex constructs, which are difficult to capture validly and reliably with single indicators (Jöreskog, 1993). Using empirical or measured variables to represent such unobserved variables may yield unreliable results, since they are estimated on the basis of the variables containing measurement errors, and as a result are estimated in a biased manner (Chen & Land, 1990).

Statistical approaches to the analysis of causal models, such as path analysis, have been met with criticisms, since they are based on the assumptions of measures without error and uncorrelated residuals, which are rarely met in social studies where many measures are not perfectly reliable and residuals are

independent and dependent variable scales (Ensel & Lin, 1991; Monroe, 1982; Perkins, 1982). Internal consistency was recalculated and an alpha coefficient of .87 was found in the present study.

Reduced organisational commitment was measured with the 9-item version of the Organisational Commitment Questionnaire (OCQ) (Mowday et al., 1979). It assesses the extent of an individual's identification and involvement in a particular organisation. The general 15-item OCQ contains both negative and positive items, however as the negatively worded items correlate less with the total score then the positively worded items, the 9-item version was utilised as it only contains positive items (Mowday et al., 1979). The items are concerned with whether the individual cares about the fate of the organisation, is proud to be part of organisation and whether the individual's values are similar to the organisations. A five-point likert format is used where responses range from 'strongly disagree' (1) to 'strongly agree' (5), where a lower score indicates reduced organisational commitment.

Internal consistency of the OCQ ranges from .82 to .93 (Mowday et al., 1979). The reliability and validity of the 9-item version has been demonstrated (Brooke, Russell & Price, 1988). Alpha coefficients ranging between .88 and .91 have been reported (Ashford et al., 1989; Davy et al., 1991; Pretorius, 1993). Support for the validity of the 9-item OCQ derives from significant correlations with the occurrence of stress ($r$=-.33, $p$<.01), job satisfaction ($r$=-.52, $p$<.01) (Barling & Rosenbaum, 1986), insecurity with job features ($r$=.29, $p$<.01), insecurity with total job ($r$=-.22, $p$<.01) and powerlessness ($r$=-.40, $p$<.01) (Ashford et al., 1989). The scale has been used in stress research (Barling et al., 1987; Pretorius, 1993) and has been successfully applied to South African samples (Barling et al., 1987; Bluen & Donald, 1991; Pretorius, 1993). The OCQ reported a satisfactory alpha coefficient of .88 in the present study.

satisfactory reliability and validity in South African studies, for example, Barling et al. (1987) reported significant correlations between the GHQ and commitment ($r$=-.28, $p$<.01) and job satisfaction ($r$=-.35, $p$<.01). The GHQ-12 is a psychometrically sound and valid measure of mental health in occupational studies (Banks et al., 1980) and has been widely used in stress research (Barling et al., 1987; Pane et al., 1989; Rahman, 1989). In the present study, an alpha of .83 was reported for the GHQ.

Job dissatisfaction was measured with the 15-item Job Satisfaction Scale (Warr et al., 1979). It assesses satisfaction or dissatisfaction with extrinsic and intrinsic features of the job. The scale focuses on aspects of work such as pay, amount of variety in a job and chance of promotion. The scale yields a total overall score and also has subscales relating to intrinsic and extrinsic job satisfaction (Warr et al., 1979). Respondents are required to rate their level of satisfaction or dissatisfaction on scale points, of which lower scores represent greater job dissatisfaction (Cook et al., 1981). The original scale was scored on a 7-point scale. However, to facilitate understanding, a 5-point response format was used, ranging from extremely dissatisfied (1) to extremely satisfied (5) (Barling et al., 1987; Bluen & Donald, 1991).

The scale has yielded a reliability coefficient of .78 (Warr et al., 1979). Satisfactory reliabilities have been reported in South African studies such as, an alpha coefficient of .86 (Bluen & Barling, 1986), an alpha of .87 (Bluen & Donald, 1991), and an alpha of .81 (Barling et al., 1987). Validity has been illustrated in that job satisfaction has been correlated with motivation ($r$=.35, $p$<.001), organisational commitment ($r$=.66, $p$<.01), health ($r$=.38, $p$<.05) and happiness ($r$=.49, $p$<.001) (Warr et al., 1979). The scale has been utilised in stress research (Barling et al., 1987; Cartwright & Cooper, 1993; Sutherland & Cooper, 1992), demonstrating significant relationships to negative stress scores ($r$=-.66, $p$<.01) (Bluen & Barling, 1987) and organisational stress ($r$=-.68, $p$<.05) (Pretorius, 1993). One item referring to job insecurity was excluded to avoid inflated correlations due to operational confounding of related items on the

**Stress reactions**

Stress reactions were operationalised by three measures. The General Health Questionnaire (GHQ) (Goldberg, 1972), the Job Satisfaction Scale (Warr, Cook & Wall, 1979), and the Organisational Commitment Questionnaire (OCQ) (Mowday, Steers & Porter, 1979), were used to form three indicators of stress reactions, namely psychological distress, job dissatisfaction and reduced organisational commitment.

Psychological distress was assessed by the 12-item General Health Questionnaire (GHQ) developed by Goldberg (1972). The GHQ measures minor psychiatric disorders in the general population (Goldberg, 1972). The GHQ is concerned with the inability to carry out one's normal 'healthy' functions and the appearances of new phenomena of a distressing nature (Goldberg & Hillier, 1979). The items of the GHQ cover recent levels of self-confidence, depression, sleep-loss, problem-solving and similar features (Cook, Hepworth, Wall & Warr, 1981). For each item respondents are required to indicate whether they have recently experienced a particular symptom. Respondents are rated on a 4-point likert scale, where responses are given a weighting of 0, 1, 2 or 3, where a higher score indicates greater psychological distress. Banks et al. (1980) state that the likert method of scoring is preferable to the dichotomous method of scoring in that it produces a wider and less skewed distribution of scores. Within the five versions of the GHQ, the 12-item GHQ was used in the present study, as it has demonstrated the best psychometric properties of the entire GHQ (Goldberg, 1972).

The GHQ has yielded a split-half reliability coefficient of .95 (Goldberg, 1972). Numerous studies have reported adequate reliabilities. For example, alpha coefficients ranging between .76 and .90 have been recorded (Banks et al., 1980; Barling, Bluen & Fain, 1987) Validity of the GHQ has been illustrated by a significant correlation between GHQ scores and overall clinical assessment of .80 (Goldberg, 1972). The GHQ has also demonstrated

satisfaction ($r$=-.37, $p$<.01) (Ashford et al., 1989). A satisfactory alpha of .93 was reported in the present study.

Perceived threat to the total job is comprised in a 10-item sub-scale which determines the perceived threat to a total job. The items pose questions relating to the future possibility of job loss, retrenchment and demotion. Responses are recorded in a five-point likert format, which ranges from 'very likely' (1) to 'very unlikely' (5). High scores on this scale indicate a high perceived threat to a job, whereas low scores would represent a low perceived threat to a job. Ashford et al. (1989) reported an alpha coefficient of .75 for this scale. The scale is valid in that it has been correlated with role conflict ($r$=.26, $p$<.01), commitment ($r$=-.22, $p$<.01) and satisfaction ($r$=-.26, $p$<.01) (Ashford et al., 1989). An adequate reliability of .76 was found in the present study.

Powerlessness consisted of a 3-item sub-scale which measures an individual's perceived powerlessness (Ashford et al., 1989). Responses are scored on a five-point likert scale, ranging from 'strongly agree' (1) to 'strongly disagree' (5). Scores are reversed and a low score indicates a perception of powerlessness. This subscale has a reported alpha coefficient of .83 (Ashford et al., 1989). Construct validity of the scale has been illustrated by significant correlations with commitment ($r$=-.40, $p$<.01), trust in organisation ($r$=-.48, $p$<.01) and job satisfaction ($r$=-.33, $p$<.01) (Ashford et al., 1989). An alpha of .80 was reported in the present study. The powerlessness scale was multiplied both with perceived threat to job features and perceived threat to the total job, since the use of a multiplicative measure of job insecurity has been supported rather than a measure of separate components of the construct (Ashford et al., 1989).

measure of job insecurity (Ensel & Lin, 1991; Monroe, 1982; Perkins, 1982). The 30 items from the OCI, and an additional three items from the SCI relating to organisational change were used to assess individual stress arising from organisational changes. This is in line with other studies where certain items from different scales have been selected to form an indicator of a construct (Latack, 1984).

As prior studies have consistently shown that undesirable or negative, but not positive, events are related to stress reactions (e.g., Bhagat & Allie, 1989; Bhagat et al., 1985; Sarason et al., 1978; Shiu et al., 1993), the negative impact subscale of life events is used for the analysis of stress (Wagner et al., 1988). Accordingly, the present study utilised only the negative impact index of the life event scales for analysis.

**Job insecurity**

Perceived job insecurity was measured by three subscales drawn from Ashford, Lee and Bobko's (1989) Job Insecurity Scale, namely perceived threat to job features, perceived threat to the total job and powerlessness. These subscales were used to form two indicators of job insecurity, a multiplicative measure of perceived threat to job features and powerlessness, and a multiplicative measure of perceived threat to the total job and powerlessness (Ashford et al., 1989).

Perceived threat to job features is comprised in a 17-item sub-scale which determines the perceived threat to job features. Items concern promotion opportunities, freedom to schedule work, quality of supervision and task variety. Responses are recorded on a five-point likert format, which ranges from 'negative change very unlikely' (1) to 'negative change very likely' (5). A satisfactory alpha coefficient of .92 has been reported (Ashford et al., 1989). Validity has also been demonstrated in correlations with intention to quit ($r$=.32, $p$<.01), commitment ($r$=-.29, $p$<.01), trust in organisation ($r$=-.28, $p$<.01) and job

relating to social events were used to assess individual stress arising from social changes. The 17 items of the SCI relating to political events were used to assess individual stress arising from political changes.

The Organizational Change Inventory (OCI) consists of 31 items including work-related events such as a change in work schedule, promotion and a new superior. Respondents are asked to indicate which of these events they experienced during the past year and whether they perceived the events as positive or negative. Like the SCI, the OCI yields three subscales. The occurrence index measures the number of stressful events experienced, and the positive and negative impact subscales measure the perceived impact of each event experienced. Accordingly, the response format indicates an occurrence index, a negative impact index ranging from extremely unfavourable (-3) to no effect (0), and a positive impact index ranging from extremely favourable (+3) to no effect (0). Additional open questions enable other recent work-related events specific to the respondents job to be listed and rated.

Reliability data is unnecessary for the OCI, since it is a life event scale, and internal consistency need not be calculated for life event scales (Monroe, 1982). The OCI has yielded adequate validity. Positively perceived organisational change ratings were found to correlate positively with job satisfaction ($r$=.38, $p$<.05) and negatively perceived organisational change ratings were found to correlate negatively with job satisfaction ($r$=-.40, $p$<.05) (Sarason & Johnson, 1979). Validity has also been demonstrated for the OCI in that the occurrence of stress correlated with organisational commitment ($r$=-.33, $p$<.001), negative stress correlated with job involvement ($r$=.26, $p$<.01) and positive stress correlated with job satisfaction ($r$=.37, $p$<.01) (Barling & Rosenbaum, 1986). The OCI has also been validated on South African samples (Kruger, 1987; Marks, 1986). Since job insecurity is a dependent variable in the present study, the item 'experienced job insecurity' was excluded from the OCI. The item was removed from the scale to eliminate potential contamination with the indicators of the stressor variable and the dependent

The Social Change Index (SCI) consists of 57 items relating to events such as an increase in the cost of living, political violence and feelings about the future of the country. Respondents are asked to indicate which of these events they have experienced in the past year and whether these events are perceived as positive or negative. The SCI yields three subscales. The occurrence subscale measures the number of stressful events experienced, and the negative and positive impact subscales measure the perceived impact of each event experienced. Accordingly, the response format indicates an occurrence index, a negative impact index ranging from extremely unfavourable (-3) to no effect (0), and a positive impact index ranging from extremely favourable (+3) to no effect (0). Additional open questions enable other recent work-related events specific to the respondents job to be listed and rated.

The SCI is a recent development and therefore has no available internal or temporal consistency data (Bluen & Ribeiro, 1992). Yet, internal consistency does not need to be calculated for life event scales, as a high degree of internal consistency may be at variance with the assumption that events are independent of each other and occur in a random manner (Monroe, 1982). Validity of the SCI has been reported on a South African sample (Bluen & Ribeiro, 1992). Significant correlations were found between corresponding subscales of the SCI and Life Experience Survey (LES) (occurrence: $r$=.57, $p$<.001; negative: $r$=.42, $p$<.001). Significant correlations were also found between corresponding occurrence and negative impact subscales and the SCI and Township Life Event Scale (TLES) (occurrence: $r$=.66, $p$<.001; negative: $r$=.72, $p$<.1), life satisfaction (occurrence: $r$=.4, $p$<.01; negative: $r$=.39, $p$<.01) and psychological well-being (occurrence: $r$=.31, $p$<.001; negative: $r$=.37, $p$<.001) (Bluen & Ribeiro, 1992). In the present study, four items were excluded from the SCI to avoid inflated correlations between events and symptoms due to operational confounding of related items on the independent and dependent variable scales (Ensel & Lin, 1991; Monroe, 1982; Perkins, 1982). For example, the item 'experienced job insecurity' was excluded, as it is measured by the dependent variable, job insecurity. The 32 items of the SCI

## Procedure

Subjects were randomly selected from a list of employees provided by each organisation. Employees were sent questionnaires at their workplace through the internal mail system, and were requested to return their completed questionnaires to the researcher in pre-addressed envelopes supplied, via the internal mail. Employees were informed of the purpose of the study, that participation was voluntary and anonymous, and that their responses were confidential.

## Measuring Instruments

The questionnaire contained biographical questions referring to factors such as age, gender and job title, and six validated scales. The latter were operationalised as three latent variables, that is common factors of a priori specified indicators or measured variables. The independent variable, stressful environmental change, was specified as a common factor of three measured variables: social change, political change and organisational change. The proposed mediator variable, job insecurity, was specified as a common factor of two measured variables: perceived threat to the total job multiplied by powerlessness, and perceived threat to job features multiplied by powerlessness. The dependent variable, stress reactions, was specified as a common factor of three measured variables: psychological distress, job dissatisfaction and reduced organisational commitment.

### Stressful environmental change

Items from the Social Change Index (SCI) (Bluen & Ribeiro, 1992) and the Organizational Change Index (OCI) (Sarason & Johnson, 1979) were used to measure stressful environmental change. Three indicators of stressful environmental change as elicited by the SCI and the OCI were focused on, namely, social change, political change and organisational change.

Questionnaires were distributed to 900 employees (300 employees per organisation). Respondents comprised a range of occupations gathered from across the organisation, such as senior managers, departmental heads, accountants, personnel officers, secretaries and supervisors. The total combined sample consisted of 296 returned questionnaires (response rate of 29.7%), however 29 questionnaires were excluded due to incomplete data, resulting in 267 usable questionnaires. Biographical details of the sample are presented in Table 1.

Table 1

Demographic details of the sample

| *Variable* | *n* | % |
|---|---|---|
| Gender | | |
| Male | 150 | 56.8 |
| Female | 114 | 43.2 |
| Missing | 3 | |
| Home language | | |
| English | 173 | |
| Afrikaans | 28 | |
| African languages[1] | 64 | |
| Missing | 2 | |
| Age | | |
| *M* (years) | 38 | |
| *SD* | 10.51 | |
| Missing | 12 | |
| Education | | |
| *M* (standard) | 10 | |
| *SD* | 0.87 | |
| Missing | 3 | |

[1] African languages include Zulu, Xhosa, Sotho, Tswana and Venda, which were combined for brevity.

(Lavee, 1988). Thirdly, the chi-square statistic is a test of statistical significance that does not provide information regarding the *degree* of fit (Gerbing & Anderson, 1993). Finally, failure of the variables to satisfy the distributional assumptions of the test statistic can lead to rejection of correct models or the failure to reject incorrect models (Bollen & Long, 1993).

Due to the problems associated with the chi-square statistic, a large number of alternative descriptive fit indices have been developed and examined (Brannick, 1995). Yet, even though these multiple indices exist, no index has been endorsed as the 'best index' (Gerbing & Anderson, 1993). Hence, no single measure of overall fit should be relied upon exclusively (Bollen & Long, 1993).

Measures such as the Goodness of Fit Index (GFI), the Adjusted Goodness of Fit Index (AGFI), the Root Mean Square Residual (RMSR) and the Comparative Fit Index (CFI) are often used (Bentler, 1990; Jöreskog & Sörbom, 1993; Lavee 1988; Netemeyer et al., 1990). Such indices have been proposed to eliminate or reduce dependence on sample size. However, this has not been a success as even though a measure does not depend on sample size explicitly in its calculation, its sampling distribution will depend on *N* (Jöreskog, 1993).

The GFI directly assesses how well the covariances predicted from the parameter estimates reproduce the sample covariances (Gerbing & Anderson, 1993). The AGFI is relatively robust after adjusting for degrees of freedom. The GFI and AGFI ranges in values from 0 to 1 where values close to 1 are indicative of a good fit (Lavee, 1988; Netemeyer, Johnston & Burton, 1990). A small difference between the GFI and the AGFI may also indicate that the model fits well (Lavee, 1988). The GFI and the AGFI do not depend on sample size explicitly and measure how much *better* the model fits compared with no model at all (Jöreskog, 1993; Jöreskog & Sörbom, 1993). The RMSR is a measure of the mean absolute value of the difference between the covariance matrix of the data and the covariance matrix reproduced by the theoretical model (Netemeyer et al., 1990). The RMSR must be interpreted in relation to

Model fit. The most frequently used measure is the likelihood-ratio chi-square statistic. A statistically significant chi-square indicates that the discrepancy between the data (variance-covariance matrix) and the model (variance-covariance matrix implied from the maximum-likelihood parameter estimates) is greater than expected by chance. Conversely, a chi-square measure that is statistically insignificant indicates a good fit of the model to the data (Brannick, 1995). Chi-square is calculated as *N*-1 times the minimum value of the fit function, where *N* is the sample size (Jöreskog, 1993; Jöreskog & Sörbom, 1993). The degrees of freedom are equal to the number of overidentifying restrictions in the model, and a comparison is made between the constraints imposed by the model and the unrestricted moments matrix (Cadwallader, 1987). If the chi-square is large compared to the degrees of freedom, one concludes that the model does not fit the data, and if the statistic is small compared to the degrees of freedom, one concludes that the model does fit the data. Whereas, a zero chi-square corresponds to a perfect fit (Jöreskog, 1993).

There is consensus that the chi-square statistic should not be the sole criterion for determining model fit due to several reasons (Chen & Land, 1990). Firstly, the null hypothesis underlying chi-square is overly rigid in most cases in that it assumes that the hypothesised model leads to an implied covariance matrix that exactly reproduces the covariance matrix of the observed variables. Thus, no allowance made for the approximate nature of virtually all social science models (Bollen & Long, 1993). Secondly, the likelihood-ratio test of the model fit is sensitive to sample size, and requires a fairly large sample to be a valid test statistic (Jöreskog & Sörbom, 1989). If the sample is too small, the chi-square test may indicate that the model fits the data even if the model is theoretically meaningless. On the other hand, the probability of rejecting a model increases as sample size increases, even when the residual matrix contains trivial discrepancies between the observed values and values predicted by the model. Thus, in very large samples virtually all models could be rejected (Everitt, 1984). A general guideline is that a sample of not less then 200 should be used to reduce the risk of drawing erroneous conclusions

The eight parameter matrices include four coefficient matrices and four covariance matrices. The coefficient matrices contain (1) the loadings for the indicators of the exogenous variables (2) the loadings for the indicators of the endogenous variables (3) the paths from the exogenous variables to the endogenous variables, and (4) the errors in the endogenous indicators. The four covariance matrices specify the covariances between the (1) the exogenous variables (2) the errors in equations (3) the errors in exogenous indicators, and (4) the errors in endogenous indicators (Cadwallader, 1987). The measurement model is estimated together with the structural model. In the simultaneous estimation or the 'full information' estimation of all the model's parameters, the solution for the confirmatory factor analysis and the solution for the structural parameters are interindependent (Lavee, 1988).

***Assessing goodness-of-fit***

Once LISREL has been run, the measures of the overall model fit and testability may be examined. One first examines the parameter estimates to assure that the model is testable. Parameter estimates should have the right sign and size according to theory or a priori specifications (Jöreskog & Sörbom, 1993). Secondly, there should be no indicators of major problems such as a covariance matrix that is not positive definite, negative variances, correlations that are larger then one in magnitude, or extremely large standard errors (Lavee, 1988). Next, it is tested whether the model is consistent with the data (Bollen & Long, 1993). LISREL issues a number of statistics to evaluate how well the model as a whole fits the data and whether some specifications are fundamentally wrong. These indicators of model fit are examined before one evaluates specific parameter coefficients (Lavee, 1988).

its eigenvalues are positive or if all possible weighted sums have a variance greater then zero (Wothke, 1993). An unidentified model will be the cause of an indefinite model, as well as too little information provided by the data, the presence of outliers and nonnormalities, too many parameters in the structural model and model misspecification (Wothke, 1993).

***Model estimation***

After specifying the model and confirming that it is identified, data is gathered for each of the observed variables and the parameters are then estimated (Cadwallader, 1987). Raw data is irrelevant to this process, instead the variances and covariances are typically utilised (Bentler, 1980), or if the variables are standardised, correlations are used (Lavee, 1988). For most practical cases it is recommended to analyse the variance-covariance matrix (Jöreskog & Sörbom, 1993; Lavee et al., 1985), as the chi-square measure of goodness-of-fit requires non-standardisation, and also similar measures across time and different populations may be compared only when measures are unstandardised (Lavee, 1988). The variance-covariance matrix is computed for the indexes and used as input to simultaneously estimate the parameters of both the measurement and the structural equation model (Cadwallader, 1987). The aim is to generate estimates of the parameters that most closely reproduce the sample variance-covariance matrix of the observed variables. This is achieved by fitting the covariance matrix implied by the model to the observed covariance matrix (Cadwallader, 1987; Everitt, 1984). LISREL then provides parameter estimates, which provide an indication of the importance of each parameter to the model as a whole (Lavee et al., 1985).

After the parameters are estimated, the parameter matrices are specified in that there may be fixed parameters which have been assigned given values, constrained parameters whose values are unknown but equal to one or more other parameter, or free parameters which are unknown and not constrained to be equal to any other parameter (Everitt, 1984; Jöreskog & Sörbom, 1993).

Identification can be achieved by the imposition of constraints on the parameters. For example, if some observed variables have non-zero loadings on each of the factors, other parameters become restricted to zero. Similarly, if the error terms are correlated, another set of parameters become fixed, or equality constraints can be imposed whereby the values of the parameters are constrained to be equal. Thus, in some instances, an overidentified structural model can help the identification of an underidentified measurement model (Cadwallader, 1987). Since certain parts of a model may be overidentified and other parts underidentified, identification is an issue for every equation in a model, as well as for the model as a whole (Bentler, 1980).

Kerlinger (1986) discusses some common technical difficulties related to identification: With LISREL, the programme announces when a model cannot be identified. However, sometimes the computer run may be completed, but some of the parameters may not make sense, for example, negative variances may be reported. Or else, the analysis may work well, but the statistics indicate that the model does not fit the data. To ascertain why such problems arise is often a mystery, since it may be due to a number of reasons. One, therefore, has to check several possibilities. It could be that the model does not fit because it was poorly or incorrectly conceptualised, or the model does not fit because the LISREL user made a mistake in using the system. It could also happen that the computer analysis does not work due to flaws in the data, such as strong multicollinearity in the correlation matrix. Or perhaps, the model does not fit as the theory from which it was derived is wrong or inapplicable (Kerlinger, 1986).

No general conditions for identification exist, however, indications of whether a model is identified or not can be obtained by checking whether the matrix of second-order derivatives of the fitting function used to estimate the model is positive definite, as if a model is identified, the matrix will be positive definite (Everitt, 1984). Positive definite is defined as a function of the eigenvalues or characteristic roots of a matrix, that is a matrix is strictly positive definite if all

The **structural model** indicates a causal relationship between the latent variables Ksi1 ($\xi_1$), Eta1 ($\eta_1$) and Eta2 ($\eta_2$). A change in $\xi_1$ is expected to produce a change in $\eta_1$ and in $\eta_2$, and a change in $\eta_1$ is expected to produce a change in $\eta_2$. The extent of the change in $\eta_1$ is represented by the coefficient ALPHA ($\alpha_{11}$) and the extent of the change in $\eta_2$ is represented by the coefficient $\alpha_{21}$ and coefficient BETA ($\beta_{21}$). The error terms in the structural equations, labelled Zeta ($\zeta_1$ and $\zeta_2$) influence $\eta_1$ and $\eta_2$ respectively, but they are assumed to be uncorrelated with $\xi_1$.

The structural model can be expressed in terms of the following equations, one for each latent endogenous variable:

$\eta_1 = \alpha_{11} \xi_1 + \zeta_1$

$\eta_2 = \alpha_{21} \xi_1 + \zeta_2$

$\eta_2 = \beta_{21} \eta_1 + \zeta_2$

(Cadwallader, 1987; Jöreskog & Sörbom, 1993).

***Identification***

A model must be identified prior to estimation. The identification of a model's parameters determines whether there is a unique set of parameter values of the specified model consistent with the data (Bollen & Long, 1993; Lavee, 1988). Under a given model structure, with certain specifications, some parameters may be uniquely estimated, whereas others may not. If all the parameters of a model can be uniquely estimated, the whole model is identified (Lavee, 1988). A useful causal model must be overidentified, meaning that it should have fewer parameters than known data points (variances and covariances, or correlations between measured variables), because only then is the model potentially able to be rejected by data. If a model is just identified, meaning that there is a one-to-one transformation possible between parameters and the data, the model can never be rejected. Whereas, if the parameters are underidentified in that they can take on many values rather than be determined uniquely, the model is not statistically testable (Bentler, 1980).

The researcher uses four matrices (LAMBDA-X, LAMBDA-Y, BETA and GAMMA) to specify measurement and causation within the model. The LAMBDA-X matrix specifies the measurement of the exogenous variables. The LAMBDA-Y matrix specifies the measurement of the endogenous variables. The GAMMA matrix specifies theoretical or structural relationships between the exogenous and endogenous variables. The BETA matrix is used to specify theoretical relationships among the endogenous variables (Stage, 1989).

The full LISREL model is defined by three equations:
a) the measurement model for *X*
b) the measurement model for *Y*
c) the structural equation model
(Jöreskog & Sörbom, 1993).

In terms of the **measurement model** *x1*, *x2* and *x3* are observed indicators of the latent variable stressful environmental change (Ksi1 $\xi_1$), while *y1* and *y2* are observed indicators of the latent variable job insecurity (Eta1 $\eta_1$), and *y3*, *y4*, and *y5* are observed indicators of the latent variable stress reactions (Eta2 $\eta_2$). The coefficients or parameter estimates (Lambda $\lambda$) indicate the accuracy with which an indicator measures a latent variable, and the strength of this relationship is termed the validity of the indicator. Most often, the observed variables are not completely determined by the latent variables, thus each indicator has an error term associated with it. The terms Delta ($\delta$) represent the measurement errors in the x-variables and Epsilon ($\varepsilon$) represent the measurement errors in the y-variables, and are uncorrelated with $\xi_1$, $\eta_1$, and $\eta_2$. (Cadwallader, 1987; Jöreskog & Sörbom, 1993).

The measurement model can be expressed in terms of the following equations:

$x1 = \lambda_{11} \xi_1 + \delta_1$ $\quad$ $y2 = \lambda_{21} \eta_1 + \varepsilon_2$

$x2 = \lambda_{21} \xi_1 + \delta_2$ $\quad$ $y3 = \lambda_{32} \eta_2 + \varepsilon_3$

$x3 = \lambda_{31} \xi_1 + \delta_3$ $\quad$ $y4 = \lambda_{42} \eta_2 + \varepsilon_4$

$y1 = \lambda_{11} \eta_1 + \varepsilon_1$ $\quad$ $y5 = \lambda_{52} \eta_2 + \varepsilon_5$

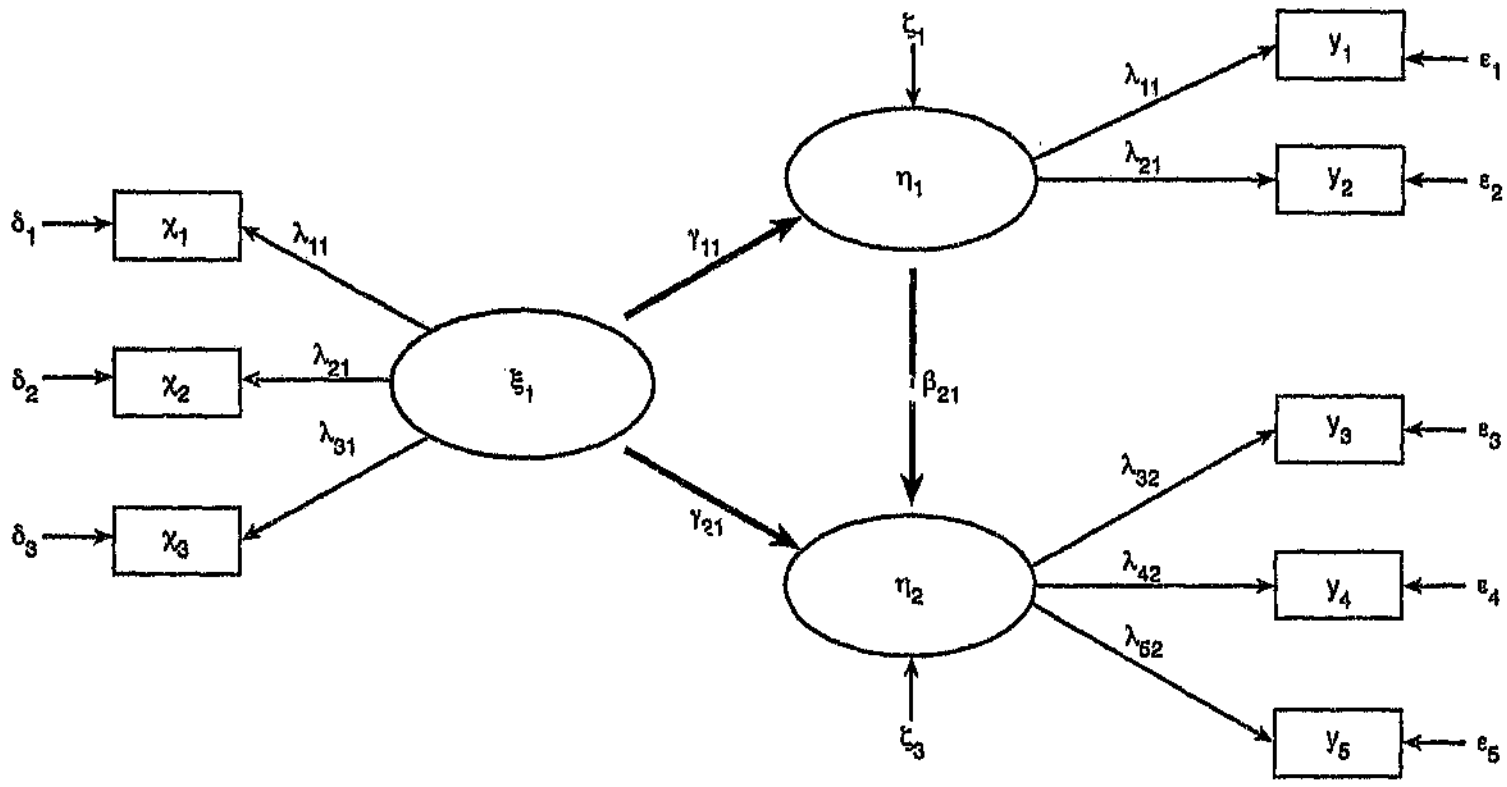



**Figure 3.** Structural model of the present study.

**Key:** Latent Variables

$\xi_1$ = stressful environmental change
$\eta_1$ = job insecurity
$\eta_2$ = stress reactions

Manifest Variables

$\chi_1$ = political change
$\chi_2$ = social change
$\chi_3$ = organisational change
$y_1$ = perceived threat to total job x powe.' ness
$y_2$ = perceived threat to job features x powerlessness
$y_3$ = psychological distress
$y_4$ = job satisfaction
$y_5$ = organisational com· ·ıe·t

a statement about the sign and relative size of the direct effect of one construct on another (Jöreskog & Sörbom, 1993). While theories are multivariate and often involve complex causal processes, and researchers would like to capture the complexities in an empirical model, too complex a model may render the model practically untestable. Thus, an attempt should be made to include plausible causal variables and specify reciprocal relationship between variables when it is proposed by a theory, but at the same time balance the ideal of a fully comprehensive model with practical considerations (Lavee, 1988).

Before the theory can be tested empirically, a set of empirically operational indicators must be defined and selected for each dimension of each construct (Jöreskog, 1993). Again, specification of the latent variables should ensure that a theory's constructs are embedded in the model (Bentler, 1980). The use of multiple indicators to measure a construct is preferred, as multiple indicators are more likely to be able to capture a complex theoretical construct than a single measure is. Furthermore, the error term of measured variables can be measured only when multiple indicators are specified, and only then can a latent variable be treated as a 'true' errorless variable. In general, three or more indicators are often recommended as models with only two indicators of a latent variable may be underidentified (Lavee, 1988).

In order to test the model, the measurement and structural equations model must be formulated as a statistical model, that is translated into structural equations or a diagram (Bentler, 1980; Jöreskog, 1993; Jöreskog & Sörbom, 1993). To illustrate this, the structural model of the present study is presented in Figure 3. The variables in circles are latent variables of stressful environmental change, job insecurity, and stress reactions. The variables in the squares are measured indicators representing each latent variable. Arrows lead from the latent variables to the indicators, indicating that changes in the latent variables lead to changes in the indicators rather than the opposite. The hypothesised structural model is recursive as there are no reciprocal relationships between the endogenous variables.

as there are many other variables that are associated with the dependent constructs, and that are not included in the model for various reasons. LISREL accounts for this as the aggregation of all such omitted variables is represented in the model by a set of stochastic error terms, one for each dependent construct. By definition these error terms represent the variation and covariation in the dependent constructs left unaccounted for by the independent constructs (Jöreskog, 1993; Jöreskog & Sörbom, 1993). Furthermore, causality is an assumption of LISREL. However, covariance structural modeling does not prove causation, rather the researcher infers causality from making predictions about the expected patterns to be formed in the data (Brannick, 1995).

**The LISREL programme**

LISREL involves a series of steps that researchers are advised to follow sequentially. These steps may be summarised along the phases of model specification, identification, estimation, assessing goodness-of-fit, respecification, and hypothesis testing (Bollen & Long, 1993; Lavee, 1988).

***Model specification***

The hypothesised structural model must be formulated on the basis of theory (Bollen & Long, 1993; Jöreskog & Sörbom, 1993; Stage, 1989). In order to adequately translate theory into an empirical model, one should ensure that all the relevant constructs are considered simultaneously, and all their uni-directional and bidirectional interrelations are stated explicitly (Bentler, 1980). This includes firstly, the classification of the constructs into dependent (caused, endogenous) and independent (causal, exogenous) variables (Jöreskog, 1993), and the identification of the relationships between all the variables as either; no relationship, correlated or a causal relationship (Stage, 1989). Secondly, for each dependent construct, the theory specifies which of the other constructs it is postulated to depend on. The theory may also include

data, and the statistical significance of each of the estimated parameters are assessed. If the fit is poor, the model is rejected, and various alternatives may be considered in order to modify and improve the fit of the model to the data (Cadwallader, 1987; Lavee, 1988).

**Assumptions in LISREL**

The utility of LISREL for any research depends upon the researcher's thoughtful use of theory at every phase of the investigation. It is assumed that theoretical reasoning should guide the researcher prior to the analysis, in specifying the hypothesised model, as well as after the estimation, in evaluating the results and introducing any modifications to the model (Lavee, 1988). Additional assumptions include that the dependent and independent variable measurement errors should be uncorrelated, the coefficient matrix of the dependent variables should be non-singular, and the equation error residuals should be uncorrelated (Mason-Hawkes & Holm, 1989). Furthermore, the structural relationships should be linear, additive and causal (Bentler, 1980; Jöreskog, 1993; Stage, 1989). The strictest assumption is that all parameters are invariant, however, it is more realistic to assume that the structure is invariant, but not the specific values of the parameters. It is, therefore, acceptable to assume invariance in the structure or pattern of the latent variables, whereas the values of the latent variables may vary (Brenner, Sörbom & Wallius, 1985). These assumptions need not necessarily be checked before computing LISREL, as if certain assumptions are not met and they present a problem, the LISREL programme will announce the problems (Kerlinger, 1986).

LISREL does not assume a recursive flow in a model or that all relevant variables are included in the model (Mason-Hawkes & Holm, 1989), nor is it assumed that relationships in the model are exact deterministic relationships (Jöreskog, 1993). Generally, the independent constructs in the model account for only a fraction of the variation and covariation in the dependent constructs,

The **measurement model** consists of the relationships between the observable indicators and the theoretical constructs (Jöreskog & Sörbom, 1993). It defines the latent variables a priori in terms of their specified measured indicators and evaluates the measurement properties (reliabilities and validities) of the observed variables (Jöreskog & Sörbom, 1989; Mason-Hawkes & Holm, 1989).

The **structural equation model** consists of the theoretical relationships between the constructs (Jöreskog & Sörbom, 1993). It specifies the causal relationships among the latent variables and describes the causal effects and the amount of unexplained variance (Jöreskog & Sörbom, 1989).

The measurement model and the structural model are often estimated simultaneously by using a full-information maximum-likelihood confirmatory factor analysis. This means that the loadings of the measured variables on their respective factors, the error terms of the measured variables, the relationships between the exogenous and endogenous variables, the relationships among the endogenous variables, and the disturbances (errors in equation) of the latent endogenous variables are all estimated simultaneously (Lavee, 1988). This simultaneous analysis provides optimal weighting of the measured variables which results in maximum explained variance in the endogenous variables (Stage, 1989). However, in practice, one should test the fit of the measurement model before the latent variable or structural model is examined. This is because the testing of the structural model, that is the testing of the initially specified theory may be meaningless unless it is first established that the measurement model holds. If the chosen indicators for a construct do not measure that construct, the specified theory must be modified before it can be tested (Jöreskog & Sörbom, 1993).

Parameters are estimated in such a way that a matrix of variances and covariances reproduced from the structural model correspond to the relationships among the measured variables as closely as possible. A number of goodness of fit tests are provided to estimate how well the model fits the

Table 6
Goodness-of-fit for the structural models tested

| Model | *x* | *df* | *p* | GFI | AGFI | RMSR | CFI |
|---|---|---|---|---|---|---|---|
| Model[1] | 45.48 | 17 | 0.0002 | 0.96 | 0.92 | 0.05 | 0.96 |
| Model[2]<br>After adjustment by allowing error covariances of political and social change to correlate. | 26.57 | 16 | 0.046 | 0.98 | 0.95 | 0.03 | 0.99 |
| Model[3]<br>After adjustment by fixing the error variance of threat to job features to zero. | 27.07 | 17 | 0.057 | 0.98 | 0.95 | 0.03 | 0.99 |

## Testing and revising the structural model

### Overall goodness-of-fit

Once LISREL estimates the structural model, it issues a number of goodness of fit indices to evaluate how well the model fits the data and whether some specifications are fundamentally wrong. These indicators are examined before the specific parameter coefficients are evaluated (Lavee, 1988).

The chi-square values, associated degrees of freedom, and probability levels for the model are presented in Table 6, indicating the goodness-of-fit of the model. Analyses of the model, as specified in Figure 3, indicated that it did not fit the data sufficiently well. The chi-square for the model[1] is 45.48 with 17 *d.f.* which yields a *p* of 0.0002. Using an 0.05 level of statistical significance, the model is shown to deviate significantly from the data. However, the chi-square statistic should not be the sole criterion for model evaluation due to its sensitivity to sample size and departures from multivariate normality (Bollen & Long, 1993; Chen & Land, 1990; Jöreskog & Sörbom, 1993; Netemeyer et al., 1990). As recommended by Bollen (1989), the fit of the model was evaluated using several standard indices. Appropriate indices to assess the model's goodness of fit such as the Goodness of Fit Index (GFI), the Adjusted GFI (AGFI), the Root Mean Square Residual (RMSR) (Jöreskog & Sörbom, 1993) and the Comparative Fit Index (CFI) (Bentler, 1990) were examined. The model[1] exhibited a GFI of 0.96, an AGFI of 0.92, a RMSR of 0.05 and a CFI of 0.96. Without modification the model[1] does not plausibly represent the relationships among the variables, indicating a significant discrepancy between the data (variance-covariance matrix) and the relations specified in the model.

## Testing the measurement model

The measurement model was analysed separate from the structural model to assess whether the chosen indicators for each construct did measure the given construct (Jöreskog & Sörbom, 1993). The measurement model was tested by a confirmatory factor analysis using LISREL 8 (Jöreskog & Sörbom, 1993). Table 5 presents the results of the LISREL estimates of the relations of the observed variables to the latent variables. The parameters for the measurement model are the lambdas (parameter estimates for the X and Y variables), the epsilons (measurement errors in the X-variables) and the deltas (measurement errors in the Y-variables), which show how well the constructs are measured by the observed variables (Jöreskog & Sörbom, 1993). As can be seen in Table 5, all the loadings of the observed measures on latent variables are significant ($t$>2) indicating that the chosen indicators measure the constructs.

Table 5

Parameter estimates of the measurement model

| Parameter | Maximum likelihood estimates | t values | Errors (δ) | Errors (ε) |
|---|---|---|---|---|
| $x_1$ ($\lambda_{11}$) | 7.20 | 9.56 | 61.43 | |
| $x_2$ ($\lambda_{21}$) | 4.15 | 8.67 | 29.13 | |
| $x_3$ ($\lambda_{31}$) | 8.37 | 11.59 | 19.94 | |
| $y_1$ ($\lambda_{11}$) | 64.51 | 13.65 | | 3862.74 |
| $y_2$ ($\lambda_{21}$) | 186.56 | 23.07 | | 0.00 |
| $y_3$ ($\lambda_{32}$) | 9.09 | 8.14 | | 23.77 |
| $y_4$ ($\lambda_{42}$) | 7.07 | -11.87 | | 32.59 |
| $y_6$ ($\lambda_{62}$) | -2.96 | -7.26 | | 28.89 |

Table 4
Covariance matrix of the manifest variables

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| 1. Social change | 113.24 | | | | | | | |
| 2. Political change | 55.65 | 46.38 | | | | | | |
| 3. Organisational change | 60.05 | 35.04 | 89.99 | | | | | |
| 4. Threat to total job x powerlessness | 164.82 | 85.25 | 92.08 | 6024.23 | | | | |
| 5. Threat to job features x powerlessness | 335.63 | 162.68 | 387.98 | 12034.78 | 34803.86 | | | |
| 6. Psychological distress | 16.98 | 7.77 | 15.63 | 119.29 | 346.87 | 33.31 | | |
| 7. Job satisfaction | -30.43 | -16.36 | -37.05 | -266.19 | -707.39 | -20.97 | 82.46 | |
| 8. Commitment | -6.56 | -3.58 | -8.34 | -147.76 | -380.64 | -8.70 | 22.25 | 37.66 |

*N* = 267

Table 3

Means and standard deviations of the manifest variables

| Variable | Mean | Standard deviation |
|---|---|---|
| 1. Political change | 9.30 | 6.81 |
| 2. Social change | 16.65 | 10.61 |
| 3. Organisational change | 8.45 | 9.49 |
| 4. Threat to total job | 22.27 | 5.88 |
| 5. Threat to job features | 46.03 | 14.05 |
| 6. Powerlessness | 9.14 | 2.98 |
| 7. Psychological distress | 10.81 | 5.77 |
| 8. Job satisfaction | 47.75 | 9.08 |
| 9. Organisational commitment | 33.47 | 6.14 |

The actual analysis was executed with the use of an unstandardised variance-covariance matrix computed by STATISTICA (Statsoft Inc., 1993) from the raw data (see Table 4). The covariance matrix was used as an input to several structural analyses with the LISREL method. The LISREL solution produced two models, the measurement model and the structural model (Jöreskog & Sörbom, 1993).

Table 2
Pearson correlation coefficients between manifest variables

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| 1. Social change | 1.00 | | | | | | | |
| 2. Political change | 0.77**** | 1.00 | | | | | | |
| 3. Organisational change | 0.59**** | 0.54**** | 1.00 | | | | | |
| 4. Threat to total job x powerlessness | 0.17** | 0.14* | 0.11 | 1.00 | | | | |
| 5. Threat to job features x powerlessness | 0.17** | 0.13* | 0.22**** | 0.72*** | 1.00 | | | |
| 6. Psychol[illegible]al distress | 0.31**** | 0.20*** | 0.29**** | 0.23**** | 0.32**** | 1.00 | | |
| 7. Job sat[illegible]tion | -0.31**** | -0.26**** | -0.43**** | -0.33**** | -0.42**** | -0.40**** | 1.00 | |
| 8. Commitment | -0.10 | -0.0[illegible] | -0.14** | -0.27**** | -0.33**** | -0.25**** | 0.40**** | 1.00 |

$N$ = 267

* $p$<.05
** $p$<.01
*** $p$<.001
**** $p$<.0001

## CHAPTER 8.

## RESULTS

Preliminary to the LISREL analysis, the correlations, means and standard deviations of the manifest variables of the present study are presented in Table 2 and Table 3. Examination of the correlation matrix indicated that the anticipated relationships were observed for the majority of variables. Hence, the correspondence of the correlations with the theoretical model was well demonstrated. Social change and political change were positively related to perceived threat to total job x powerlessness. In addition, social change, political change and organisational change were positively associated with perceived threat to job features x powerlessness. Both measures of job insecurity were significantly related to the stress reactions. Specifically, they were positively associated with psychological distress, and negatively associated with both job satisfaction and organisational commitment. There was also a significant positive association between social change and psychological distress, and a significant negative association between social change and job satisfaction. Political change was positively associated with psychological distress, and negatively associated with job satisfaction. Organisational change was significantly related to the stress reactions, with a positive association with psychological distress, and a negative association with both job satisfaction and organisational commitment. Less consistent findings that emerged were the non-significant relationship between organisational change and perceived threat to total job x powerlessness; between political change and organisational commitment; and between social change and organisational commitment. The directions of all the relationships were consistent with expectations. However, correlations do not provide evidence for a complete set of structural relationships. Therefore, LISREL is computed to evaluate the causal model (Hodapp, Neuser & Weyer, 1988).

the same data, thus, the relevant probability distributions no longer apply. One, therefore, must resist manipulating the model to fit the data in order to confirm hypotheses (Mason-Hawkes & Holm, 1987). Modifications have important exploratory value, provided they are not introduced for the mere purpose of achieving a better model fit. To avoid manipulation of the model, modifications should only be made that make theoretical sense and if they do not affect the important parameters of interest (Lavee, 1988).

The aim of LISREL may be to find a model that not only fits the data well from a statistical point of view, but also has the property that every parameter of the model can be given a substantively meaningful interpretation. Since a model may be tested multiple times, the approach of LISREL is model generating rather then model testing (Jöreskog, 1993; Jöreskog & Sörbom, 1993).

***Model fit and hypothesis testing***

Once the model is testable and fits the data sufficiently well, the model may be evaluated against the hypotheses. There is no easy and simple interpretable criterion for assessing whether the hypotheses have been confirmed (Lavee, 1988). However, generally, two sets of criteria are used: goodness of fit of the model as a whole, and statistical significance of the specific parameters (Lavee, 1988).

The chi-square of a model's fit is examined, yet it is not a sufficient criterion against which to confirm hypotheses. This statistic simply shows that the models specifications describe the structure of relationships among the observed variables against the alternative hypothesis that these relationships are of no specific structure (Lavee, 1988). The hypotheses regarding the causal relations between each construct, as well as the relationships between constructs and their measured indicators are tested by assessing the statistical significance of each parameter (Lavee, 1988). Thus, evaluation of the hypotheses rely on the test statistics and indices previously discussed in the assessment of goodness-of-fit.

The initial model of the researcher need not be correct in terms of the hypotheses or best for the data, but the number of alternative models should be fairly limited (Jöreskog & Sörbom, 1989). Each stage of LISREL should be repeated multiple times using the same data if the initial model does not sufficiently fit the given data. Several models may be tested in this process. The respecification of each model may be theory driven or data driven (Jöreskog, 1993; Jöreskog & Sörbom, 1993). However, one must remember that post hoc specifications violate a fundamental assumption underlying statistical theory, namely, that hypotheses are formulated prior to the analysis of the data (Lavee, 1988). When one begins to modify the model according to the data, the model loses its status as a hypothesis as the researcher has already looked at the data and made some estimates of the parameters using

modification index (Cadwallader, 1987). Each modification index measures how much chi-square is expected to decrease if a particular parameter is set free and the model is reestimated. Thus, the modification index is approximately equal to the difference in chi-square between two models in which one parameter is fixed or constrained in one model and free in another, all other parameters being estimated in both models. The largest modification index shows the parameter that would improve the most when set free (Jöreskog & Sörbom, 1993). Better fitting models may be obtained by allowing additional fixed parameters with non-zero derivatives to be freed one at a time. LISREL's coefficients are relative and depend on the user's decision of how far to take the model fitting and which parameters can be freed (Mason-Hawkes & Holm, 1989). In addition, restrictions can be imposed, whereby certain structural elements are constrained to zero, or alternatively certain structural parameters may be constrained to be equal to one another, or a parameter may be fixed to a certain value (Brannick, 1995; Lavee, 1988). Furthermore, exogenous variables can be left to correlate (Cadwallader, 1987) and errors between manifest variables that measure the same factors may be correlated (Brenner et al., 1985; Jöreskog & Sörbom, 1993).

The fit of the model can be improved through respecification, and once respecified, the steps of identification, estimation, testing fit and respecification may be repeated often multiple times until the most suitable fit of the model to the data is found (Bollen & Long, 1993). Yet, modifications to the model must be theoretically valid (Stage, 1989).

***Respecification and reestimation***

After initial estimation of a model, it is common to conclude that the fit of the model is inadequate, and to respecify the model in an attempt to improve its fit (Bollen & Long, 1993). The aim is to determine what is wrong with the model and how the model should be modified to fit the data better (Jöreskog, 1993). Modifications may be required if the model was unidentified, in order to make it testable, or modifications may be suggested by the diagnostic information of the initial analysis, in order to achieve a model that better fits the data (Lavee, 1988).

Improvements can be made and the model can be retested. Residual error, modification indices and t-values for parameters provided allow the researcher to determine possible improvements to the model through the introduction of new relationships among variables or the deletion of previously specified relationships that have been proven statistically insignificant (Stage, 1989).

There are a number of ways to modify a model if it does not provide a good fit to the data. Parameters whose estimates are small compared to their standard errors can be eliminated, thus improving the overall fit by recovering degrees of freedom (Bentler, 1980; Cadwallader, 1987). Parameters can be added to or eliminated from the model by examining the residuals, that is the specific patterns of lack of fit of the model to the data (Bentler, 1980). A large positive residual indicates that the model underestimates the covariance between the two variables. Whereas, a large negative residual indicates that the model overestimates the covariance between the variables. In the first case, one should modify the model by adding paths which could account for the covariance between the two variables better. In the second case, one should modify the model by eliminating paths that are associated with the particular covariance (Jöreskog & Sörbom, 1993). A modification index is used to assess the likely result of relaxing a particular constraint, and a great improvement in goodness-of-fit can be achieved by freeing the parameter with the largest

the size of the observed variances and covariances (Netemeyer et al., 1990), but generally the lower the index, the better the fit of the model to the data. However, the RMSR is a valuable index only when the mean data variance-covariance is known, as it is harder to evaluate with an unstandardised variance-covariance matrix (Lavee, 1988). The CFI estimates a population measure of model fit, assesses practical differences in model fit and is less influenced by sample size than is the chi-square statistic (Bentler, 1990; Dunham, Grube & Castaneda, 1994). The CFI ranges in values from 0 to 1 where values close to 1 are indicative of a good fit (Bentler, 1990).

**Path coefficients**. In addition to examining fit indices, one should examine the fit of the components of a model, such as the *R* squares of equations, the magnitude of coefficient estimates, whether the estimates are of the correct sign, and for the presence of improper solutions. Since, even a model with excellent overall fit indices can be unacceptable because of the components of a model (Bollen & Long, 1993).

If the model is testable, but does not fit the data sufficiently well, the modification indices provide a mean for assessing what changes in the models specification would improve its fit to the data. A modification index larger than 5.0, in either the measurement or the structural model, indicates that the models fit to the data will improve significantly if the respective path is allowed, that is if the constraint of the fixed parameter is relaxed (Lavee, 1988).

The standard error for each parameter estimate can be used to provide an indication of the importance of that parameter to the model as a whole. The statistical significance of each parameter is determined by a *t* statistic, which is equal to the ratio of the coefficient and its standard error. If the critical ratio formed by dividing the estimate by its standard error is large, the parameter is essential to the model (Bentler, 1980). Coefficients that are twice as large as their respective standard errors (that is, $t > 2.0$) are considered statistically significant (Lavee, 1988).

# CHAPTER 9.

# DISCUSSION

## Discussion of results

The purpose of the present study was to develop and evaluate a model linking stressful environmental change, perceived job insecurity and stress reactions. Based on previous research and theory, a theoretical model was developed and then tested. Significant causal relationships were reported between all the variables in the study. Results are discussed in terms of the research questions governing the present study.

### The effect of stressful environmental change on stress reactions

Results of this study indicate a significant causal relationship between stressful environmental change and stress reactions. This infers that the greater the amount of stressful changes experienced by individuals, the higher their levels of stress reactions. This finding corroborates the theoretical propositions of the literature of change, which states that it is commonly held that change in peoples' lives is linked to stress (Jerusalem, 1993). Changes induce feelings of uncertainty amongst individuals (Ashford, 1988; Callan, 1993) and demand adaptation to unfamiliar situations which threatens individuals (Muller, 1992). This uncertainty and threat of change creates negative cognitions and stress reactions (Matteson & Ivancevich, 1990). The present study provides support for the theory that change results in stress outcomes such as psychological distress, job dissatisfaction and reduced commitment (Cooper & Cartwright, 1994; Jamal, 1990; Rice, 1992; Sullivan & Bhagat, 1992).

**Overview of results**

The aim of the model in the present study was to investigate whether: (1) stressful environmental change has a direct causal relationship with stress reactions (2) stressful environmental change has a direct causal relationship with perceived job insecurity (3) perceived job insecurity has a direct causal relationship with stress reactions, and (4) perceived job insecurity mediates the relationship between stressful environmental change and stress reactions.

LISREL confirmed the causal model, demonstrating that the theoretical model provided a good fit to the data. It was found that stressful environmental change led to an increase in job insecurity, and an increase in stress reactions. Job insecurity in turn led to an increase in stress reactions. The results additionally showed that job insecurity partly mediated the relationship between stressful environmental change and stress reactions.

by job insecurity. This is confirmed by the size of the residual variance of job insecurity (.94), indicating that stressful environmental change explains only 6% of the variance of job insecurity (1-.94; see Latack, 1984, p.312). Substantial variance is unexplained which suggests that other important explanatory variables have been omitted from the model, and confirms that only part of the total effect of stressful environmental change on stress reactions is due to mediation by job insecurity. This demonstrates that job insecurity acts as a partial mediator in the present study. Therefore, the model[3] supports the fourth research question that perceived job insecurity mediates part of the effects of stressful environmental change on stress reactions.

In addition to testing the paths for significance, one should also examine the magnitude of the paths or their relative importance to the fit of the model (Lang et al., 1992). The most significant or strongest path in the model was from job insecurity to stress reactions ($\beta_{21}$=.45, $t$=5.58), followed by the path from stressful environmental change to stress reactions ($\alpha_{12}$=.47, $t$=4.89). The residual variance of stress reactions was .47, demonstrating that stress reactions explained 53% (1-.47; see Latack, 1984, p.312 ) of the variance of the model. These paths, therefore, contributed substantially to the overall fit of the model. The weakest path was between stressful environmental change and job insecurity ($\alpha_{11}$=.25, $t$=3.56), which was confirmed by the fact that stressful environmental change explained only a small percentage of the variance in the job insecurity. This infers that the path between stressful environmental change and job insecurity had the least contribution to the overall model fit.

indirect and total relationships, the strength of the mediator (i.e., whether job insecurity is operating as a total or partial mediator), and whether job insecurity accounts for most of the relationship between stressful environmental change and stress reactions (i.e., whether the indirect effect is of a similar or larger magnitude to that of the direct effect).

The direct effect of stressful environmental change on stress reactions is .47. The direct effect of stressful environmental change on job insecurity is .25 and the direct effect of job insecurity on stress reactions is .45. Stressful environmental change therefore has a basic indirect effect on stress reactions of .11 (from .25 x .45). It is the sum of the direct and indirect effects that reflects the total causal effect. The total effect (indirect + direct effect) of stressful environmental change on stress reactions is .58 (from .47 + [.25 x .45]; see Bollen, 1989, p.376; Hayduk, 1987, p.247; Wheaton, 1985, p.356). The total effect of stressful environmental change on stress reactions (.58) is greater than its direct effect (.47), indicating that job insecurity is operating as a mediator rather than as a moderator. The indirect effect of stressful environmental change on stress reactions via job insecurity also operates in the same direction as the overall causal effect of stressful environmental change on stress reactions, which further confirms that job insecurity operates as a mediator. The significant path between stressful environmental change and stress reactions demonstrates that job insecurity is not a single dominant mediator, but rather a partial mediator or one of multiple mediator variables.

With dominant mediators, it is common that the total effect is mostly accounted for by the indirect effect of the mediator variable (Wheaton, 1985). Yet, in the present study, the direct effect is greater than the indirect effect (.47 and .11 respectively), illustrating that the total effect is mostly accounted for by the direct effect. This anomaly does not detract from job insecurity being a mediator. It rather infers that an increase in stress reactions is only produced by a small but significant increase in job insecurity resulting from stressful environmental change, and that the direct relationship is not largely controlled

effect stress reactions only indirectly through transmission of influence by the mediator job insecurity. Indirect transmission of influence shows that all of the effect of stressful environmental change on stress reactions is transmitted by job insecurity (see James & Brett, 1984). If the path between stressful environmental change and stress reactions is still significant, that is, not reduced to zero, then job insecurity would be operating as one of multiple mediators (see Baron & Kenny, 1986) or a partial mediator. With a partial mediation model, stressful environmental change would have both a direct effect on stress reactions and an indirect effect on stress reactions, the latter being transmitted by job insecurity. This would indicate that only part of the total effect of stressful environmental change on stress reactions is due to mediation by job insecurity (see James & Brett, 1984).

Related to the strength of the mediator, is whether the intervening variable accounts for most of the relationship between the stressor and the stress outcomes. In mediator models, the total effect is usually mostly accounted for by the indirect effect of the intervening variable (Wheaton, 1985). Accordingly, the indirect effect would be of a similar or even larger magnitude to that of the direct effect, showing that the direct effect of environmental change on stress reactions is offset by an indirect effect of environmental change working through job insecurity to ultimately reach stress reactions (see Chen & Land, 1990; Lavee et al., 1987).

From the above explanations, one may calculate that a variable operates as a moderator when the direct effect is greater than the total effect, since the intervening variable buffers or reduces the effect of the stressor on the stress outcomes. In contrast, a variable operates as a mediator when the total effect is greater than the direct effect, since the intervening variable increases the effect of the stressor on the stress outcomes. Therefore, if job insecurity operates as a mediator, the total effect of stressful environmental change on stress reactions will be greater than the direct effect of stressful environmental change on stress reactions. In addition, one must look at the direction of the

The final research question to be answered is whether job insecurity mediates the relationship between stressful environmental change and stress reactions. In order to assess whether job insecurity operates as a mediator, a number of issues need to be analysed.

Because of the confusion surrounding the concept of a mediator and moderator variable (Baron & Kenny, 1986; Wheaton, 1985), it is necessary to distinguish whether in the present study job insecurity operates as a mediator or a moderator. Wheaton (1985) discusses the differences between the two variable types. He proposed that a variable operates as a moderator or a stress buffer when the direct effect of the stressor increases (not decreases) when the effect of the moderator variable is controlled. This occurs because the overall impact of the stressor has been attenuated by the operation of the moderator, in that it buffers the relationship between the stressor and the outcome. Thus, when the moderator variable is controlled the result is a larger direct net effect of the stressor. In the case of a mediating variable, the variable does not reduce the total effect of the stressor in the model, instead the positive total effect of the stressor is reapportioned between a net direct effect of the stressor and an indirect effect through an intervening variable or mediator (Wheaton, 1985). In addition, the direction of the relationships of the total and direct effects is crucial to the decision as to whether the variable operates as a mediator or moderator. The indirect effect through the moderator variable operates in a direction opposite to the total effect of the stressor on the stress outcomes. Whereas, in a mediator model, the indirect effect of stressor on stress outcomes via the mediator operates in the same direction as the total effect (Wheaton, 1985).

To further ascertain whether a variable operates as a mediator, one would examine the direct path between stressful environmental change and stress reactions. If the path between stressful environmental change and stress reactions is non-significant or reduced to zero, job insecurity would be operating as a single dominant mediator (see Baron & Kenny, 1986). This would be a complete mediation model, in which stressful environmental change would

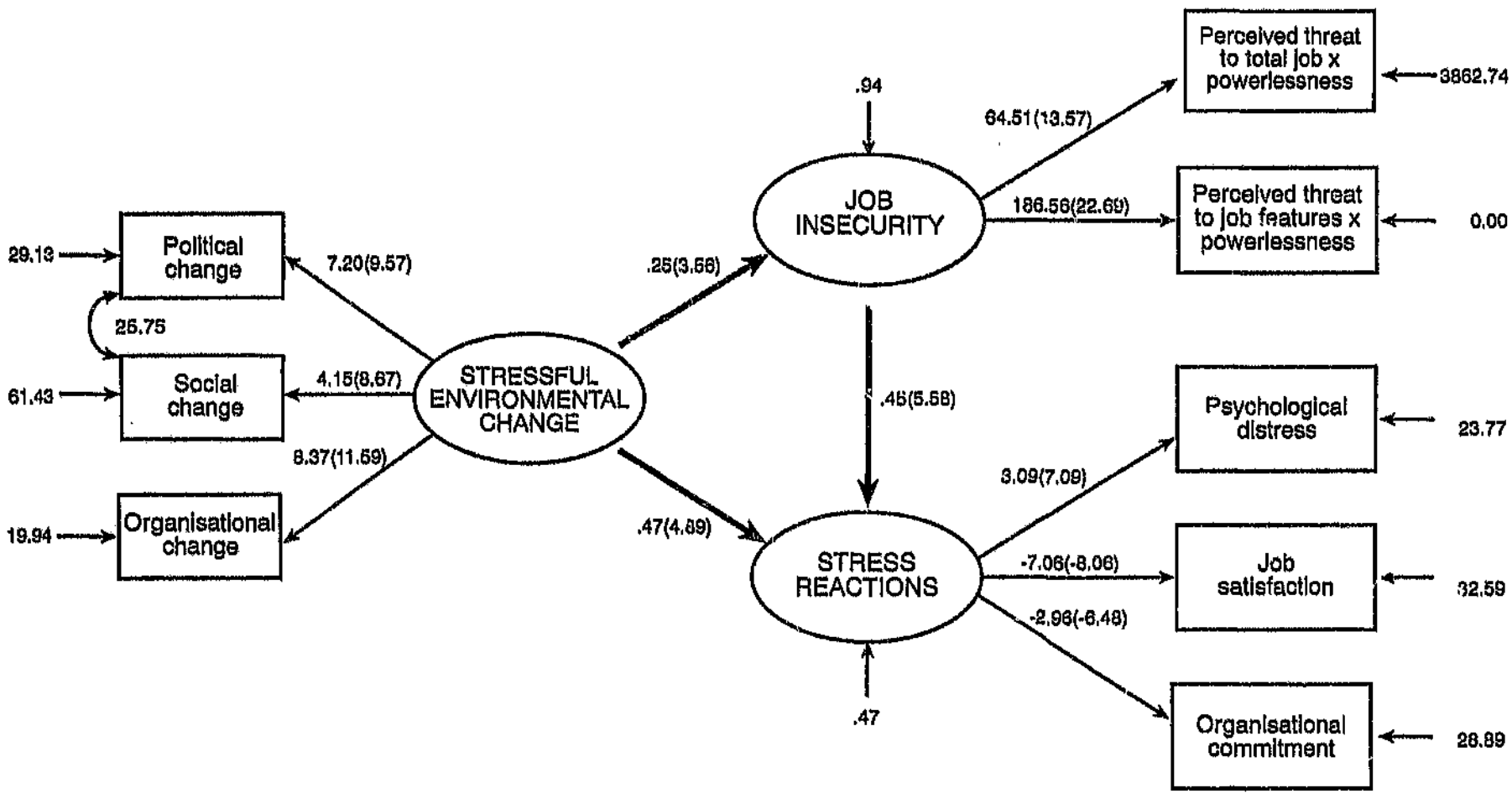



**Figure 4.** Revised structural model of the present study. Parameter estimates displayed with *t* values in parentheses. All reported path estimates are significant ($t > 2$)

**Significance of the path coefficients**

The next step in the analysis was examining the paths to determine if the model's predictions were correct, to answer the research questions, and to identify each path's contribution to the overall fit of the model (Lang, Wittig-Berman & Rizkalla, 1992).

The revised structural model[3] with its maximum-likelihood parameter estimates is presented in Figure 4. The t-statistics for each of the structural coefficients were examined to determine whether they differed significantly from zero. The standard critical value of 1.96 was used for the .05 level of significance (Lang et al., 1992). All the parameter coefficients in the model[3] were statistically significant at the .05 level.

Stressful environmental change was found to influence stress reactions directly ($\alpha_{21}$=.47, $t$=4.89) and indirectly through its positive effect on job insecurity ($\alpha_{11}$=.25, $t$=3.56) which in turn yielded a positive impact on stress reactions ($\beta_{21}$=.45, $t$=5.68). The significance of all the paths demonstrated that the predictions for the present model were correct. With regard to the first three research questions, this model[3] shows that: stressful environmental change has a direct causal effect on perceived job insecurity; perceived job insecurity has a direct causal effect on stress reactions; and stressful environmental change has a direct causal effect on stress reactions.

A reestimation of the model resulted in a model[3] with a chi-square of 27.07 with 17 *d.f.* and a *p* value of 0.057. A small chi-square compared to the degrees of freedom and a chi-square that is statistically insignificant indicates a good fit of the model to the data (Jöreskog, 1993; Lavee, 1988). Since, the model's[3] chi-square value was non-significant, the model[3] was shown to fit the data at the p=0.05 level. The model[3] had a GFI of 0.98, an AGFI of 0.95, a RMSR of 0.03, and a CFI of 0.99 (see Table 6). However, the detailed fit indices indicated that the observed data was not fully accounted for by the model. The structural modification indices suggested that adding a path from stressful environmental change to reduced organisational commitment would improve the fit of the mode by decreasing chi-square. It was decided not to make this modification in the specification of the model, as there was no theoretical basis for allowing the measure of reduced organisational commitment to load on more than one factor (see Lavee et al., 1985). A further weakness in the model was evident in that the standardised residual for organisational change and reduced organisational commitment was still large in magnitude demonstrating that at this point the model did not fit the data well. Since this residual was positive, it indicated that the model underestimated the covariance between the two variables (Jöreskog & Sörbom, 1993). Once the LISREL analysis has given a solution that fits the data, that is, when the model produces 'fitted values' which do not significantly deviate from the empirical data, the model is said to be confirmed (Brenner et al., 1985). The final model[3] in the present study exhibited 'fitted values', however, in order to ensure that the model was confirmed, the statistical significance of each parameter estimate was also assessed.

multiple indicators are specified. When a variable has three or more indicators, it can be treated as an 'errorless' variable., but when there are only two indicators a latent variable may be unidentified (Lavee, 1988). Accordingly, for latent variables with three or more indicators, LISREL estimates the error variance by default (Jöreskog & Sörbom, 1993). However, for a latent variable with only one indicator, the error variance in the corresponding observed indicators cannot be estimated (Lavee et al., 1987), and as a result are fixed to zero (e.g., Jöreskog & Sörbom, 1993; Lang, Wittig-Berman & Rizkalla, 1992). For latent variables with two indicators, the error variance in the corresponding observed indicators may not be estimated adequately, and accordingly, may be fixed to zero (e.g., Brenner et al., 1985). It was, therefore, decided to fix the error variance of the manifest variable, perceived threat to job features, equal to zero on the basis that it was a psuedo-factor, and because its *t* value was insignificant when estimated by LISREL.

Table 7

Error variances of the manifest variables of the model[2]

| | Parameter Estimates | *t* values |
|---|---|---|
| ($\delta_1$) Social change | 61.38 | 6.96 |
| ($\delta_2$) Political change | 29.11 | 8.25 |
| ($\delta_3$) Organisational change | 20.01 | 2.10 |
| ($\varepsilon_1$) Threat to total job x powerlessness | 35.37 | 6.41 |
| ($\varepsilon_2$) Threat to job features x powerlessness | 25.26 | .76 |
| ($\varepsilon_3$) Psychological distress | 23.80 | 10.02 |
| ($\varepsilon_4$) Job satisfaction | 32.53 | 5.48 |
| ($\varepsilon_5$) Organisational commitment | 28.88 | 10.40 |

measure the same factor are permitted (Brenner et al., 1985; Jöreskog & Sörbom, 1993). Since, political change and social change were both exogenous variables and manifest variables of the same factor, it was decided that it was reasonable to allow their error terms to correlate. It also made theoretical sense to allow these terms to correlate since it is quite possible that political and social change have common sources of variation that have been inadvertently omitted from the model, since they are closely linked in terms of what they measure.

Relaxing the constraints on the covariances between political change and social change, that is allowing the residuals to covary, resulted in a marked improvement in the model's fit. The reestimated model[2] resulted in a chi-square value of 26.57 with 16 *d.f.* and a *p* value of 0.046. Using a 0.05 level of statistical significance, the model[2] is shown to be relatively close to fitting the data. The model exhibited a GFI of 0.98, an AGFI of 0.95, a RMSR of 0.03, and a CFI of 0.99. The fit indices demonstrated a marked improvement of the fit of the revised model as compared to the initial model (see Table 4). There were no modification indices suggested by the LISREL output. However, an examination of the residuals, indicated that the residual for organisational change and organisational commitment was quite large in magnitude (2.73) implying that the model did not fit the data well at this point.

The model[2] was thus reexamined. It was noticed that the error variances for the manifest variables were significant ($t>2$) with the exception of perceived threat to job features which had a *t* value of 0.76. Table 7 shows that the error variances for the other indicators were significantly higher. The model being tested was of the mixed kind, that is it consisted of a mixture of true factors (at least three indicators per construct) and pseudo-factors (less than three indicators per construct) (Brenner et al., 1985). Since perceived threat to job features was one of two indicators for the latent variable job insecurity, it was a pseudo-factor in which the measurement error could not be properly estimated. The error term of a measured variable can be measured only when

Examination of the detailed indicators of the model fit showed that standardised residuals of the relations between organisational change and job satisfaction, between political change and social change, and between social change and organisational commitment were unacceptably high (larger than 2 in magnitude), suggesting that these relations were not adequately accounted for by the model. None of the structural modification indices were significant demonstrating that no modification in the structural specifications was needed to achieve a better model fit to the data. The only significant modification indices were in the theta-epsilon matrix (covariance among error terms of measured variables), namely, between political change and social change, and between organisational change and job satisfaction. These results suggested that the model could be improved by allowing certain residuals to correlate. Specifically, it suggested that allowing the error variance of political change to covary with the error variance of social change, and the error variance of organisational change to covary with the error variance of job satisfaction, would result in a decrease in chi-square. This indicated that there were correlations between the errors of the measured indicators. It is normal practice to assume zero correlation between the errors of measured indicators, because if the error terms for two or more indicators correlate, it means that the indicators measure something else or something in addition to the construct they are supposed to measure. If this is the case, the meaning of the construct and its dimensions may be different from what is intended (Jöreskog & Sörbom, 1993). As a result, researchers have been warned against correlating error terms unless substantiated by theory, as allowing correlations between errors works well in practice by improving fit to data, but is likely to lead to an improvement in the model fit based on chance associations in the data (Lavee et al., 1985). Therefore, in the case of organisational change and job satisfaction, it was decided not to allow the residuals between these variables to correlate, since there was no theoretical basis for such modifications. There are, however, certain situations where error terms may be correlated. For example, it is common that exogenous variables may be left to correlate (Cadwallader, 1967), and also correlated errors between manifest variables that

The significance of the direct stressor-strain relationship indicated that job insecurity operated as a partial mediator. This finding is not incongruent with theory and research. Baron and Kenny (1986) noted that: because most phenomena in psychology are considered to have multiple causes, it is more realistic to expect mediators to decrease the relationship between an independent variable and a dependent variable rather than to completely eliminate it. Furthermore, from a theoretical perspective, a significant reduction demonstrates that a given mediator is indeed a potent, though not both a necessary and a sufficient condition for an effect to occur. In the present study, since job insecurity did result in a significant reduction of the effects of environmental change on stress reactions (i.e., the total effect was greater than the direct effect), it indicated that job insecurity played a significant role in mediating the relationship between stressful environmental change and stress reactions. Other researchers have also found partial mediation effects in the study of life events. For example, Ensel and Lin (1991) found that life events exhibited both a direct effect and indirect effect on psychological distress, whereby social resources partially mediated the effect of life events on psychological distress. Glickman et al. (1991) also found that life events simultaneously affected outcomes both directly and indirectly through a mediator. Their results showed that life events increased work strain, and through this increase in strain, life events influenced psychological distress. Life events also exerted a significant direct effect on psychological distress. These studies together with the results of the present show that life events are related to stress reactions, independently of other factors. Since the direct relationship between life events and symptomatology is well established (Pollock, 1988), it would be unlikely that job insecurity would operate as a total mediator in the relationship reducing the effect of life events on stress reactions to zero.

insecurity scale, showing that perceived threat to the total job and perceived threat to job features should each be multiplied by perceived powerlessness to measure job insecurity effectively. This affirms the contention of Ashford et al (1989) and Greenhalgh and Rosenblatt (1984) that perceived powerlessness is an essential component to the job insecurity construct.

Previous literature has demonstrated correlational associations between job insecurity and stress reactions (Ashford et al., 1989; Orpen, 1993; Seguin & Roskies, 1991), yet causal relationships between job insecurity and psychological outcomes are undetermined (Hartley et al., 1991). The present study therefore contributes to theory by providing evidence that job insecurity is causally related to stress reactions.

**The role of job insecurity as a partial mediator**

An important goal of the present study was to evaluate the role of job insecurity as a mediator in the stressor-strain relationship. The results indicated that job insecurity did mediate the relationship between stressful environmental change and stress reactions. Yet, the mediation result was not as strong as expected. Usually when a variable operates as a mediator the indirect path, in which the mediator operates between the independent and dependent variable, is stronger than the direct path between the independent and dependent variable. This reflects that the relationship between the independent and dependent variable is largely controlled by the mediator variable (Lavee, McCubbin & Olson, 1987), as the mediator is the generative mechanism through which the independent variable is able to influence the dependent variable (Baron & Kenny, 1986). Yet, in the present study, the direct effect of stressful environmental change on stress reactions was stronger than the indirect effect through job insecurity.

By attesting that job insecurity operated as a determinant of stress reactions, the current research demonstrates that job insecurity is an important variable to include in an analysis of stress. Furthermore, this study provides empirical support for theory that regards job insecurity as a stressor variable (e.g., Bargal et al., 1992; Heaney et al., 1994; Roskies & Louis-Guerin, 1990; Roskies et al., 1993). For example, job insecurity has been related to increased symptoms of ill-health such as general psychological distress (Roskies & Louis-Guerin, 1990; Seguin & Roskies, 1991; van Vuuren et al., 1991), anxiety, depression (Orpen, 1993) and somatic complaints (Khunert et al., 1989). Empirical associations between job insecurity and a multitude of work-related attitudes have also been established (Ashford et al., 1989; Greenhalgh & Sutton, 1991; Klandermans et al., 1991). Both Ashford et al. (1989), and Newman and Krzystofiak (1993) reported lower levels of job satisfaction as a result of declining job insecurity. Other researchers such as Davy et al. (1991) and van Vuure et al. (1991) have also demonstrated empirical associations between job insecurity and job dissatisfaction. Studies have indicated that perceived job insecurity is significantly related to decreased organisational commitment (van Vuuren et al., 1991). Greenhalgh (1982) found that employees who were insecure about their job futures became less committed to the organisation, and Brockner (1988) reported that perceptions of severity of a layoff were negatively associated with organisational change. Seguin and Roskies (1991) confirmed in a follow-up study of the psychological consequences of job insecurity, that employees experiencing job insecurity evaluated their commitment to the organisation as low.

The results of the present study corroborates the theoretical models of Ashford et al. (1989) and Greenhalgh and Rosenblatt (1984) by substantiating the relation between perceived job insecurity and employees reactions. It also supplements the research of Ashford et al. (1989) through the inclusion of additional macro-environmental factors related to job insecurity, and by finding a significant relation between job insecurity and psychological distress. The present research also supports the use of a multiplicative version of the job

**The effect of job insecurity on stress reactions**

The finding of the present research supports the existence of a relationship between perceived job insecurity and stress reactions. Hence, individuals who perceived greater job insecurity, in terms of perceived threat to the total job multiplied by powerlessness and perceived threat to job features multiplied by powerlessness, experienced more intensified stress reactions manifested by higher levels of psychological distress, job dissatisfaction and reduced organisational commitment. Furthermore, the results indicated that this path was the most significant in terms of the overall model.

The association between job insecurity and stress reactions is explained on the basis that perceptions of job insecurity are psychologically harmful to the individual (Seguin & Roskies, 1991). Job insecurity causes the individual discomfort in terms of feelings of demoralisation, fear, anger (Jacobson, 1987), helplessness, withdrawal and self-doubt (Earnshaw et al., 1990). Since job insecurity is related to individuals' feelings of competence and self-worth (Khunert & Palmer, 1991), it follows that when individuals experience job insecurity their psychological well-being is reduced (Dekker & Schaufeli, 1995; Khunert et al., 1989; Klandermans et al., 1991). In addition, as a major component of job insecurity is a threatened loss of intrinsic aspects of the job such as autonomy, career advancement and status (Earnshaw et al., 1990), and extrinsic aspects such as security in the job (Brockner, 1988), then it is likely that job insecurity will have a negative effect on job satisfaction as the primary affective response to a job (Ashford et al., 1989). Furthermore, when employees undergo problems, especially those that have employment-related implications, they confront increased insecurity and threats to belonging (Begley & Czajka, 1993). Insecure employees also experience a loss of trust and a betrayal of expectations by employers (Earnshaw et al., 1990). Consequently, perceptions of job insecurity result in reduced commitment to the organisation (Ashford et al., 1989).

insecurity (Ashford et al., 1989; Bargal et al., 1992; Dekker & Schaufeli, 1995). Accordingly, future research should adopt multivariate research designs to explore the role of possible mediator and moderator variables between stressful environmental change and job insecurity.

A further possible explanation of the weak relationship between stressful environmental change and job insecurity could be that there is a lack of certain chronic stressors in the present study. Theorists such as Ashford et al. (1989) and Roskies and Louis-Guerin (1990) examined chronic stress with regard to job insecurity. It is noted that the operation of chronic stressors such as role ambiguity leads to perceptions of job insecurity because role ambiguity engenders a feeling of lack of predictability and threatens an individual's sense of control (Ashford et al., 1989). Job insecurity in turn is characterised by feelings of uncertainty and ambiguity (Dekker & Schaufeli, 1995; Heaney et al., 1994). A study by Bargal et al. (1992) identified that feelings of job insecurity are engendered by the operation of chronic stressors, such as the uncertainty of continued employment, facing constant rumours, fluctuating developments over job changes and unpredictability about when and under what circumstances changes will occur. Chronic stressors were not completely absent in the present study, as life event scales measure some events that may be chronic or enduring in their nature, such as 'conflict with a colleague' (Vingerhoets & Marcelissen, 1988), and individuals tend to report many chronic stressors in life event checklists (McQuaid et al., 1992). Yet, life event scales do not measure certain chronic stressors such as role ambiguity, and further do not obtain detailed information about the chronic circumstances under which events occur (Simons et al., 1993). Future research should, therefore, examine the role of these types of chronic stressors with regard to job insecurity, in addition to the role of specific events at work.

insecurity could subside (Seguin & Roskies, 1991). This was ascertained by Earnshaw et al. (1990), who found that job insecurity consisted of a process initially comprising feelings such as fear, powerlessness and anger, but finally lead to the stage of adaptation in which individuals came to terms with the loss of job security. It therefore seems possible that in the present study, a time lapse between stressful change and stress reactions could have effected the significance and strength of the relationship, particularly because the present study measures events that occurred within the past year, and current perceptions of job insecurity. The adoption of both retrospective and prospective measures could have emphasised the effect of a time lapse on the stressor-job insecurity relationship. To ascertain the validity of this proposition, future research could employ longitudinal designs to assess effects of time on these processes.

Baron and Kenny (1986) argue that, in terms of mediational models, if the path between the independent variable and outcome variable is still significant, then the mediator variable is operating as one of multiple mediators. Therefore, the weak relationship between stressful environmental change and job insecurity could be due to the operation of various cognitions or emotions, not measured in the present study, but which could intervene as additional mediators. This could well be the case, since stress theorists, such as Lazarus (1993) contend that emotions such as anger, fear, anxiety, and hopefulness are subsets of stress which mediate the stressor relation to strain outcomes. In addition, the small amount of variance explained by stressful environmental change in relation to job insecurity could be due to other intervening factors or modiators such as coping. This may be likely since one would expect that individuals confronted by the stress of change would engage in coping efforts to manage their feelings of job insecurity (Ashford, 1988; Callan, 1993). Moreover, various moderator variables such as individual differences, including sense of hardiness and locus of control have been identified as relevant to the stress process (Callan, 1993). Availability of social support has also been recognised to moderate stressful changes (Callan, 1993; Kessler et al., 1985) and job

organisations. It has been found that employees who are not at risk of losing their jobs, are rather subject to pressures to modify their jobs and accept different employment conditions (Jacobson & Hartley, 1991), or alternatively may be seriously concerned about their power to retain valued aspects of their job (Roskies et al., 1993). Roskies and Louis-Guerin (1990) conducted their study in a low-risk organisation and found that very few individuals were seriously worried about imminent job loss, instead they were substantially more worried about a deterioration in working conditions. Perhaps, in the present study, employees did not face serious threats from organisational changes and consequently did not perceive a risk of losing their jobs. This would explain the lack of a significant correlation between organisational change and perceived threat to the total job multiplied by powerlessness.

An alternative reason of the lack of strength in the effect of the stressor on job insecurity could be due to time lags between events and perceptions of job insecurity. Little is known about the length of time between event occurrences and initial symptom formation, or the amount of time required for symptoms to abate (Tholts, 1983). Nelson et al. (1995) confirmed this by finding a considerable amount of variability in the measurements of stress at different times. They concluded that one of the difficulties in interpreting studies of the stress-strain relationship is that the period between the onset of potentially stressful events and the manifestation of stress reactions is variable. Consequently, it is difficult to assess when to conduct measurement, as if psychological measures are to be taken too soon or too late after event impacts have occurred, no relationship or a very modest relationship between events and symptoms will be found (Tholts, 1983). Empirical studies have demonstrated that the disruptive effect of change on individuals decreases with the elapsed time since the occurrence of the change (Amburgey et al., 1993). Manz et al. (1990) found that during the change process, employees initially perceived threat, and after a time lapse, employees attempted to adapt and accepted the new possibilities of the change. With regard to job insecurity, it is noticed that it is possible that as time lapses, individuals' feelings of job

the number of studies linking change to job insecurity, most of studies assessed the impact of a specific change upon individuals, and consequently the effect of general stressful life events on work-related attitudes has not been sufficiently investigated (Bhagat & Allie, 1989). In addition, relatively little attention has been paid to the consequences of general organisational change upon individuals (Nelson et al., 1995) and to the combined effects of political, social and organisational changes on perceptions of job insecurity. Hence, it seems as if a strong empirical path between stressful life events and job insecurity has not yet been established. By examining stressful life events, the present study addresses this deficit in the literature by considering the psychological consequences of change on individuals and by verifying a significant, albeit weak, causal association between stressful life events and work-related outcomes, such as job insecurity.

The path between stressful change and job insecurity, even though significant, was not as strong as may have been expected. In terms of the model, it was the weakest path, contributing the least to the overall model fit. A number of explanations for this finding are proposed.

A possible explanation of the weakness of the relation could be partly due to the lack of a significant correlation between the manifest indicators, organisational change and perceived threat to total job multiplied by powerlessness. Past theory and research has shown these variables to be significantly associated, in that individuals' fear of losing their jobs have increased following organisational change (Ashford et al., 1989; Davy et al., 1991; Seguin & Roskies, 1991). Yet, the majority of these studies conducted their research in high-risk organisations which had undergone mass changes such retrenchments (Brockner, 1988; Davy et al., 1991), severe financial cuts (Seguin & Roskies, 1991), mergers (Greenhalgh, 1982) and acquisitions (Newman & Krzystofiak, 1993). The organisations in which the present study was conducted, would not be classified as high-risk organisations, but rather organisations undergoing changes that could be generalised to many types of

individuals experience throughout their lives in modern society (Hartley et al., 1991). Earnshaw et al. (1990) found that their data marked the experience of job insecurity as a process of transition in which loss and adaptation to change are major elements. Theorists such as Greenhalgh and Rosenblatt (1984) and Ashford et al. (1989) state that perceived severity of threat and a sense of powerlessness are vital components of the job insecurity construct. The present study verifies that stressful environmental change engenders perceptions of threat and a sense of powerlessness upon individuals. In addition, the current research provided support for theoretical models of job insecurity (e.g., Ashford et al., 1989; Greenhalgh & Rosenblatt, 1984) by ascertaining that perceived threat and powerlessness are manifest indicators of job insecurity construct.

The current research is in line with previous theory and empirical research indicating that changes produce feelings of insecurity for employees concerning the nature and continued existence of their jobs (Ashford et al., 1989; Jick, 1985; Schweiger & Ivancevich, 1985). Employees have attributed their feelings of job insecurity to causes such as governmental policy, raised educational demands and new technology (van Vuuren et al., 1991). There is also evidence that times of economic hardship influence the perceived intensity of the threat of job insecurity (Bargal et al., 1992; Earnshaw et al., 1990). Organisational restructuring and undesirable job changes such as changes in work procedures, layoffs, and reductions in resources, have also been shown to result in increased perceptions of job insecurity (Jick, 1985). Dooley et al. (1987) established that undesirable job changes were positively associated with perceived job insecurity, and Orpen (1993) reported that employees felt more insecure about their jobs with the onset of organisational change. This was corroborated by Ashford et al. (1989), who found that the greater the amount of organisational changes experienced by individuals the higher their levels of job insecurity. Additional significant associations have been demonstrated between job insecurity and organisational changes such as retrenchments (Davy et al., 1991) and acquisitions (Newman & Krzystofiak, 1993). Despite

finding of the present study establishes that employees in organisations, even stable organisations, are subject to feelings of job insecurity. The mean scores of individuals for the job insecurity measures in the present study (see Table 3) are in accordance, and even slightly higher than the scores in a study such as Ashford et al. (1989) (perceived threat to total job: *M*=20.5, *SD*=5.2; perceived threat to job features: *M*=40.8, *SD*=10.8; powerlessness: *M*=9.0, *SD*=2.6), whose main focus was job insecurity. The current research indicates that these levels of job insecurity are partly attributed to an accumulation of stressful environmental change.

Due to the intense impact of change upon individuals, theory has reviewed a variety of emotions commonly associated with change. Marris (1986) discusses that change leaves individuals with a sense of lack of control over their destinies and undermines their abilities to predict their futures. Since individuals feel that they are not in control due to loss of the known, they experience a sense of powerlessness (Callan, 1993). Individuals are forced to adapt to unfamiliar situations as a result of change, which result in perceptions of threat (Muller, 1992). The fear and threat of the unknown situation conflicts with individuals sense of security (McKendall, 1993). In short, stressful change has been shown to lead to negative evaluations (Vallant, 1993) such as uncertainty, threat, fear (Coetsee, 1993), helplessness (Simpson, 1991) and a sense of insecurity among individuals (Homer-Dixon et al., 1993). As changes in the broader environment or macro-events are perceived as far removed from individuals (Handy, 1988), it is likely that individuals will feel out of control and insecure in terms of these changes. Vallant (1993) reported that negative life events evoked feelings of being controlled by external circumstances, which in turn manifested themselves in negative cognitions. On the other hand, perceptions of job insecurity are conceptually linked to these forms of cognitive appraisal. For example, Dekker and Schaufeli (1995) stated that the most common experience of employees during organisational change was uncertainty about the continuance of their jobs. It has also been proposed that job insecurity is likely to be a manifestation of the general uncertainty

The current research illustrates that a composite measure of stressful environmental change involving political, social and organisational changes led to stress reactions. This confirms previous theory that individuals do not separate aspects of their lives. The work and non-work domains of individuals are linked, and there is a consequential spillover of effects of stress from both personal lives and work on stress reactions such as psychological distress, job satisfaction and commitment (Barling, 1990; Bhagat & Allie, 1989; Bhagat et al., 1985; Odesnik-Duke, 1990). Furthermore, the present study corroborates previous research findings in terms of the scope of stressors found to be stressful. Issues such as political uncertainty, economic factors, personal and family life, and factors at work are all implicated as major contributors to stress (Hendrix et al., 1991). Hence, the present study found that individuals experience more stress when exposed to multiple sources of change.

**The effect of stressful environmental change on job insecurity**

As the results indicate, stressful environmental change influenced the amount of job insecurity perceived by individuals. Although stressful change only accounted for 6% (1-.94=0.06; see Lavee et al., 1987) of the variance of job insecurity, these effects, nevertheless, are significant indicating that job insecurity was intensified by an accumulation of stressful changes. This finding illustrates that the more political, social and organisational changes experienced by individuals, the greater both their perceptions of threat to the total job and powerlessness, and perceptions of threat to job features and powerlessn-

This finding is of particular relevance to theory and research. The impa environmental change on job insecurity is recognised as a matter of c importance due to the fact that large scale changes have occurred worl at a rapid rate and have changed the nature of jobs (Goffee & Scase, 1992; Khunert & Vance, 1992). Such changes have proliferated organisations, even healthy ones (Hartley et al., 1991), making any individual in any organisation potentially vulnerable to job insecurity (Roskies & Lolus-Guerin, 1990). The

Life event research has dealt specifically with the issue of change, basing itself on the premise that stressful changes lead to an increase in symptomatology (Pollock, 1988). Stress is attributed largely to the frequency with which stressful events occur to an individual and their intensity of stressfulness for the individual (Motowidlo et al., 1986). Studies have provided much empirical support for the relationship between life event stress and stress-related outcomes (Russell & Davey, 1993). Significant associations have been established between stressful events and general psychological distress (Glickman et al., 1991; Shrout et al., 1989; Steffy et al., 1990), depression (Brown et al., 1994; Hammon, 1992; Shrout et al., 1989; Valiant, 1993), and anxiety (Chamberlain & Zika, 1990; Miller, 1989; Russell & Davey, 1993). Moreover, Shiu et al. (1993) demonstrated an empirical link between negative stressful events and behavioural outcomes of stress. Empirical relations have also been illustrated between stressful events and work-related attitudes (Hendrix et al., 1994; Keenan & Newton, 1985; Motowidlo et al., 1986). Empirical associations between life events and stress reactions were upheld in the present study, clarifying that events perceived as more frequent and intense produced a greater amount of stress in individuals.

Despite the abundance of empirical studies illustrating significant associations between life events and outcomes, life events research has been criticised on the basis that studies have exhibited very modest correlations between events and symptomatology, and that life events have not accounted for a substantial portion of the variance in the dependent variables (Kessler et al., 1985; Russell & Davey, 1993; Shrout et al., 1989; Vossel, 1988). The significance of the relationship between stressful environmental change and stress reactions in the present study tends to counteract this criticism against life events research. The present study demonstrates, firstly, that stressful change and stress reactions are causally related, and secondly, the strength of the path from stressful environmental change to stress reactions indicated that life events made a significant contribution to the overall fit of the model by accounting for a substantial amount of the explained variance in stress reactions.

As the current research identified that employees were experiencing a significant amount of job insecurity, and especially since job insecurity is such a crucial issue in South Africa, organisations should be very careful in implementing changes and taking care not to breach the psychological contract of employment. Robinson and Rousseau (1994) state that a challenge for contemporary management facing economic and organisational changes, is to keep the changes in employment conditions from becoming violations to employees. If this is achieved, negative outcomes such as job dissatisfaction and reductions in company loyalty can be avoided. Wolmarans (1995) outlines some guidelines for South African organisations to facilitate change process and to minimise negative outcomes. She maintains that organisations should clarify the plans of change with employees, integrate the changes, provide education of changes, foster ownership by involving employees in the changes, and provide employees with continuous feedback. The literature on job insecurity also recognises that communication and information sharing is a relevant factor in reducing job insecurity. Experts state that employees facing job insecurity often have no clear cues within the workplace to help in evaluating in the stresses (Bargal et al., 1992), thus communication regarding the extent, targets and timing of changes could potentially minimise some of the stress by reestablishing an individual's sense of control and predictability (Ashford et al., 1989). South African organisations should take cognisance of this, as their management style has for years been authoritarian discouraging information sharing (Horwitz & Townshend, 1993; Gxwala, 1995). Consistent communication and feedback to employees, could go a long way toward creating a climate for a secure workplace (Khunert & Palmer, 1991).

Understanding some of the effects of stressful change and job insecurity upon individuals as illustrated by the present research, can be used as a basis for diagnosing problem areas in organisations and developing appropriate response strategies (Cartwright & Cooper, 1994). The current research can help in the diagnosis of some aspects of the situation leading to stress, as the identification of stress and stress-related factors are central to health-promotion

Control is also recognised to be an important variable in the stress process (Cartwright & Cooper, 1994). Karasek (1990) found that the already stressful experience of job reorganisation can be much worse for employees when they are denied influence over the process or when changes lead to reduced control. Thus empowerment would not only aid in the reduction of job insecurity, but also in ameliorating stress. This was confirmed by Nelson et al. (1995), in that their results suggested that those in positions of less control suffer the greatest negative effects of organisational change, particularly when change is one that is outside their control, and the implications and consequences of change is less clear. By introducing employee participation and empowerment, organisations may create cultures conducive to change, feed more information to workers, allow employees to feel as if some changes are under their control, and this is likely to reduce the stress associated with change.

Considering that the present study demonstrated a link between environmental change and reduced levels of organisational commitment, and since it is generally recognised that a demise in employee loyalty to companies is a sign of the difficult economic times (Robinson & Rousseau, 1994), it is important that organisations address this issue. One of the tasks of organisational leaders should be to create a company in which employees want to belong. Employee participation and empowerment can create an environment in which employees have a stake in the company and feel wanted and worthy. Malimela (1994) contends that South African organisations must develop new visions for the future by creating a culture of ownership and pride, and by investing socially in employees. Mdongo (1995) states that South African organisations should empower employees by respecting, recognising and rewarding employees' potential, and if empowerment is successful, it should result in visable changes such as employee satisfaction, motivation and commitment to the goals and objectives of the organisation.

Results from the present study, which indicate that social, political and organisational change in the country has impacted upon individuals, should act as a catalyst for changes in organisational cultures. It has been suggested that South African organisations realign themselves according to the new culture and climate in the country (du Toit, 1993; Mdongo, 1995; Werth, 1994). South African organisa lons need to awaken to the realisation that everything has changed, and invest in developing the capability through the skills of their managers to effectively manage change and its disrupting impact (Werth, 1994). Furthermore, as employees' perceptions of the culture type of the organisation is a strong predictor of job satisfaction and organisational commitment (Cooper & Cartwright, 1994), a positive culture change in South African organisations should have a beneficial impact on employees' job satisfaction and commitment.

The present research identified that employees' sense of powerlessness was a significant component of job insecurity, which implies that if organisations intend to tackle the problem of job insecurity, they need to confront the issue of powerlessness or control. Since the concept of empowerment is at odds with a sense of powerlessness, it follows that a sense of empowerment can reduce job 'nsecurity. Horwitz and Townshend (1993) state that the introduction of participative schemes in South Africa reflect a move towards job security. Experts agree that successful organisations empower employees to recommend ways to restructure their jobs, analyse operations, identify inefficiencies in the ways jobs are structured and tasks performed, and to recommend change strategies (Newman & Krzystofiak, 1993). Particularly with organisational change, employee empowerment may allow employees to feel more in control in dealing with solutions to problems with procedures, work practices and relationships that emerge with changes to the organisation (Callan, 1993).

## Practical implications

In addition to the theoretical implications, there are certain practical implications following the present research.

The results of the present study suggest that attitudinal and affective reactions which are important to both individuals and organisations accompany stressful changes. More specifically, it indicates that changes have led to a work environment in which individuals are experiencing stress evidenced by increased levels of psychological distress, and lower levels of job satisfaction and organisational commitment. This represents a real and relevant problem for both individuals and organisations. The heavy cost of stress-related illnesses to organisations (Cooper & Bramwell, 1992), is apparent in the considerable losses organisations have experienced from the effects of stress on important organisationally valued outcomes such as job satisfaction and job performance (Sullivan & Bhagat, 1992).

The significant result of the present study between change and job insecurity also has important ramifications for companies. The more prolonged the threat to job insecurity, the higher the psychological costs to the individual, and the greater the potential for organisational decline (Bargal et al., 1992). Firstly, since the majority of South African organisations are undergoing change programmes (du Toit, 1993; Werth, 1994; Wolmarens, 1995), and secondly, because poverty and unemployment are pressing social issues in South Africa (SAIRR, 1995), it follows that job insecurity is a fundamental issue to tackle. As demonstrated by the present study, if job insecurity is not dealt with, negative attitudes such as job dissatisfaction and reduced commitment will proliferate the organisational environment. Additional costs of job insecurity involve a threat to organisational productivity and long-term effectiveness, as job insecurity raises issues of trust and fairness in daily labour-management interactions (Bargal et al., 1992). Organisations should therefore realise that dealing with employees' job insecurity is vital since it is an essential maintenance need of the organisation for its survival.

organisational effectiveness (Robertson et al., 1993), the present study affirms that changes also have significant indirect costs on organisations through their effects on employees, especially in terms of job insecurity and stress reactions. This finding contributes to theory by addressing the paucity of research focusing on negative outcomes of change.

A final theoretical implication of the present study is that it acknowledges some criticisms of previous stress research. It has been stated that stress research has been limited due to the lack of multivariate studies, as the complexity of the stress process is best understood by casting an array of variables in a multivariate framework (Levi, 1992; Sullivan & Bhagat, 1992). The present study examined a multivariate model, empirically testing stressors, perceived job insecurity and stress reactions as a whole within a common model structure. A variety of variables were examined in relation to job insecurity to determine the ordering of the variables and causality. The use of covariance structure analyses made it possible to test all parameters in the model simultaneously (Davy et al., 1991). Thus, instead of testing hypothesised relationships between pairs of variables, the present study simultaneously tested the relationships between all variables. The application of a structural equation model was beneficial to advancing theory, as the present research demonstrated the applicability of structural equation models such as LISREL to theory testing. Because complex variables such as environmental change are not likely to be captured by one indicator alone, the use of multiple indicators to define the constructs was important.

construct adequate theoretical or empirical attention. Instead many researchers have often treated job insecurity in an *ad hoc* manner including it in many studies as a secondary or incidental focus (Ashford et al., 1989). Past research has also not addressed whether stressful changes directly affect job insecurity and stress reactions, or if perceived job insecurity mediates the effect of such change on outcomes. Since causal relationships between change, job insecurity and work attitudes are undetermined (Hartley et al., 1991), the present study advances theory by establishing the nature of some of these causal relations. The findings of the present study promote the theory of job insecurity, insofar as it is a relatively recent field in which extensive research has not yet been conducted (Earnshaw et al., 1990; Kuhnert & Palmer, 1991; Kuhnert & Vance, 1992; Orpen, 1993). No documented research could be found that measured job insecurity as a possible mediator between change and stress reactions. This represents a gap in the literature since feelings of threat, uncertainty and powerlessness are essential components of the job insecurity construct (Greenhalgh & Rosenblatt, 1984; Ashford et al., 1989) and are additionally relevant to the appraisal of stress (Baum et al., 1981). The results of the present study address this neglect in the literature, and depicted job insecurity as an independent variable in that it was causally related to stress reactions, a dependent variable in that it was an outcome of stressful change, and as a mediator variable in that it partially mediated the relationship between change and stress reactions. These findings are likely to advance theory on job insecurity by providing information on the nature of the construct.

The results of the present study may enhance the theory on organisational change, by determining some of the psychological consequences of change upon individuals. Past literature has been curiously silent about employees' reactions to organisational change (Nelson et al., 1995). Both Callan (1993) and McKendall (1993) state that visionaries on change focus on the positive outcomes of change, and ignore the negative outcomes commonly associated with change. While it is recognised that organisational changes are implemented with the intention of positive outcomes, specifically to improve

organisational sphere. This study also provides strong evidence that research on individuals in organisations should be placed within the larger context of the macro-environment. An understanding of the factors that influence the individual's psychological state would be substantially reduced if the impact of the macro-environment (social and political change) had not been included in the present study.

The present research focuses on the experience of individuals working in jobs in a changing environment. The existence of job insecurity points to the fact that the nature of job insecurity may be ongoing for workers in times of environmental change, characterised in South Africa by an economic recession, political and social turbulence and organisational restructuring. The present study thus reinforces the role of job insecurity as an outcome variable of change, and as an important organisational stressor which may have adverse consequences for employees. Furthermore, although the organisations in the present study were operating within a changing macro-environment, the results are particularly compelling because they were obtained in organisations that were not experiencing intense organisational events such as mergers, acquisitions, or other obvious threats. The mean scores of individuals for the job insecurity measures (see Table 3) were in accordance, and even slightly higher, with the scores of studies like those of Ashford et al. (1989), whose main focus was job insecurity. Because perceptions of job insecurity were related to stress outcomes in organisations not characterised as high risk, this study shows that job insecurity is a real and relevant fear of the potential loss of what employees have, and the fear of being transferred to an unwanted and undesirable situation. The results therefore imply that the study of job insecurity and its impact is fundamental to a comprehensive understanding of the sources of stress in organisations.

The effect of the environment is clear, in that individuals are experiencing stress and job insecurity. Yet, despite the importance of job insecurity to both employees and employers, researchers in the field have not yet given the

**Theoretical Implications**

Previous research has focused on stressors experienced primarily on an individual level and has largely ignored social circumstances (Barley & Knight, 1992; Handy, 1988). Little attention had been paid to the specific social contexts in which people live and how these contexts generate stress (Dresser, 1991). As a result, it has been identified that there is a need to consider macro-environmental stressors (Handy, 1988; Levi, 1992; Martin, 1989). The present study addresses this deficit by concentrating on the South African context and the social and political circumstances in the country together with organisational factors which generate stress. Past research on stress concerned with the South African context, has focused on the stressors of daily township life (Bluen & Odesnik, 1988; Odesnik-Duke, 1990) and the relationships between social and economic disadvantage and distress experienced by urban Africans (Turton & Chalmers, 1990). The present study however focuses upon the experience of more general stressful life events applicable to all South Africans, and further demonstrates that these changes are relevant to the individual's experience. The current research has contributed to theory by illustrating an empirical link between macro-psychosocial processes and individual psychological functioning.

There is some empirical evidence that stressful macro-events in South Africa are related to strain measures such as psychological well-being, physical health and life satisfaction (Bluen & Ribeiro, 1992). The present study investigated the relationship of further variables, such as job insecurity and stress reactions comprising job dissatisfaction and reduced organisational commitment. Significant relationships between the variables were found, making this the only empirical evidence between South African macro-events and organisational practice. The present study also contributes to theory by confirming the use of a multiple stressor model where the combined effects of several simultaneous stressors in both the work and non-work domains were investigated. Hence, the current research captured additional sources of stress beyond the

(Ensel & Lin, 1991; Steptoe, 1991). The present study, while demonstrating the existence of a direct relationship between life events and stress reactions, indicates that the inclusion of a mediator does aid in the understanding of the mechanism through which stressors lead to stress reactions. This counteracts the criticism that life event research does give sufficient focus to the meaning of events for individuals and portrays individuals as being out of control rather than being capable of reaction (Pollock, 1988). Hence, the finding that job insecurity operated as a mediator in the present study, extends life event research by illustrating that the individual engages in a process of interpreting and reacting to the situation, which in turn leads to stress reactions.

evaluation of the event as threatening and it is the perception of threat rather than the characteristics of the situation *per se* that determines whether or not the circumstances are appraised as stressful (Roskies & Lolus- Guerin, 1990).

The present study's finding that job insecurity operated as a partial mediator confirms the position that job insecurity is a form of cognitive appraisal that partly mediates the relation between stressful environmental change and individuals' stress reactions. This may be explained in the context of the present study, that when individuals experience the impact of undesirable changes, they perceive a sense of threat and powerlessness, which is translated into a perception of job insecurity, which in turn leads to stress reactions. This relates to the process of appraisal in that the individual evaluates the meaning of the stressor in terms of personal threat which determines whether the stressor will result in stress reactions. From an extensive review of the available literature, it would seem as if this finding is original in providing empirical support for the use of job insecurity as a mediator variable in the stressor-strain relationship.

In conclusion, the significant finding of the present study that job insecurity functioned as a mediator in the stressor-strain relationship has certain implications. Firstly, as the direct effect of stressful environmental change on stress reactions was stronger than the indirect effect through job insecurity, the direct association between stressful change and stress outcomes in life event research is certified, illustrating that change *per se* is relevant to stress outcomes. Secondly, since job insecurity contributed to the significance of the model as a mediator, it suggests that understanding individuals' reactions to stressful changes requires researchers to not only focus on the change itself, but also on how individuals evaluate the change. Hence, it is evident that it is both the perception of job insecurity that results in stress reactions as well as change *per se* which is consequential for stress reactions. This is in accordance with the realisation of the importance of mediators in aiding in the understanding of the mechanism through which stress may lead to outcomes

such as personal resources may have functioned as moderators in buffering the effect of stressful change on stress reactions. The present study has therefore offered a partial model of stressful change and job insecurity. Future research should explore the possibility of incorporating additional factors, such as coping and personal resources, in a model of stressful change and job insecurity.

Since, mediators or intervening variables are conceived as forms of cognitive appraisal (Hodapp et al., 1988), the finding that job insecurity functioned as a mediator in the present study was of particular importance, as it inferred that job insecurity operated as a form of cognitive appraisal in the stress process. Thus, in the current research, job insecurity functioned as an appraisal of the stress situation which in turn led to stress reactions. Specifically, job insecurity illustrated that individuals evaluated stressors in terms of perceived threat and a sense of powerlessness. Empirical relations between stressors and cognitive appraisal processes have been established. For example, Seguin and Roskies (1991) postulated that it is the subjective perception of risk that is the link between the stressful situation and the resulting distress, whereas, Cooper and Cartwright (1994) stated that it is well recognised that feelings of powerlessness and lack of control act as mediators in stress. In addition, Jerusalem (1993) found that stress appraisals involving individuals' perceptions of threat and loss were found to be the decisive mediator of stressor variables on outcome variables. Other authors such as Fleming et al. (1991) reported that feelings of helplessness and uncertainty mediated the relationship between stressors and symptom distress. Baum et al. (1981) describes the appraisal of a stress situation as comprising aspects such as perception of threat, uncertainty and lack of control. It has also been demonstrated that the experience of job insecurity involves cognitive and affective responses such as a sense of threat, disruption, uncertainty, helplessness, loss and reduced control (Earnshaw et al., 1990; Jacobson, 1987). Job insecurity can therefore be viewed as a form of cognitive appraisal, in that it relies on the individual's interpretation and evaluations of events in the environment (Jacobson, 1991a). It is thus recognised that the experience of job insecurity depends upon the individual's

The finding that job insecurity functioned as a mediator is consistent with the literature on stress and job insecurity. Both theory and research have ascertained that stressful changes influence job insecurity (Ashford et al., 1989; Greenhalgh, 1982; Jick, 1985), and that job insecurity is considered to be an important determinant of stress reactions (Ashford et al., 1989; Bargal et al., 1992; Greenhalgh & Sutton, 1991; Klandermans et al., 1991). Greenhalgh (1982) postulated that job insecurity appears to be an important intervening variable between employees' beliefs about changes and th[illegible]itudinal responses. It has also been proposed that job insecurity has [illegible]tial to operate as a mediator variable between change and individuals' attitudinal outcomes (Brockner, 1988). Furthermore, the results of the study by Davy et al. (1991) suggested that perceptions of job insecurity, resulting from organisational restructuring, may provide relevant input to employees' job satisfaction and organisational commitment. These postulations were confirmed in the present research, by showing that job insecurity provided relevant input to employees' attitudes by mediating the relationship between stressful environmental change and stress reactions. Consequently, when individuals experienced stressful changes it led to greater perceptions of job insecurity, which in turn led to increased stress reactions. Job insecurity was thus clearly identified as an intervening or mediator variable, and functioned further in the current research by accounting for some of the unexplained variance in stress reactions.

Some of the variance in stress reactions, is likely to be explained by additional variables not measured in the present study. Since the coexistence of both direct and indirect effects implies tha[illegible]b insecurity explains only part of the effects of stressful environmental change and stress reactions, there may be variables not measured in the present study, that could have intervened as possible mediators between stressful change and stress reactions. These factors could account for part of the direct effects of stressful environmental change on stress reactions. For example, the direct effect may be transmitted through some attitudes related to stress such as coping. Additional variables

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practically useful, yet support for the model in the present study does not preclude the possibility that other models are equally plausible. Clearly additional factors not included in the model of the present research have been shown to be related to job insecurity and stress. Hence, future research that considers alternative models would further our understanding of the causes and consequences of the variables assessed. The theoretical sense and the statistical significance of the model in the present study has, however, produced sufficient credibility upon which future research can be built.

responses namely, shock, defensive retreat, acknowledgement and adaptation (Bargal et al., 1992). Jacobson (1987), in turn, found that employees underwent stages including feelings of demoralisation, helplessness, hope and self-blame. In addition, Earnshaw et al. (1990) reported that the process of job insecurity included the experience of emotional stages such as enthusiasm, disillusionment, remission, realisation and adaptation. Future research could examine these variables as cognitive mediating processes, to further assess whether individuals' evaluations of events are powerful predictors of affect.

Finally, since the present study identified significant linkages between change and stress-related attitudes and feelings, it demonstrates that individual attitudes deserve more frequent and explicit attention as dependent variables in change evaluations. However, since the present research only examined attitudinal or psychological consequences of stress, future research may also assess behavioural manifestations of stress such as withdrawal, absenteeism and turnover. In particular, the relations between job insecurity and other work-related constructs need further clarification if we are to fully understand the role of job insecurity within the organisation. Furthermore, in order to understand employee well-being, the relationship between variables and stress outcomes needs further clarification. Future research could benefit from utilising the findings of the present study, having identified some causes of stress, and extend research by exploring possible solutions to develop models for mental health promotion and distress prevention.

## Conclusion

Based on previous theory and exploration, a multi-variate causal model of stressful environmental change, job insecurity and stress reactions of individuals within organisations was developed and empirically validated in the present study. The model represents an initial and exploratory step in examining relationships between stressors, job insecurity and stress reactions. The findings succeeded in drawing conclusions that are theoretically and

than others, then it becomes vital to identify the factors producing this increased resilience (Roskies et al., 1993). Stress research has repeatably shown that certain dispositional factors can moderate individual's susceptibility to stress reactions (Nelson et al., 1995; Roskies et al., 1993). Personality traits such as neuroticism, self-esteem (Bargal et al., 1992), feelings of competence (Bhagat & Allie, 1989), and Type A or Type B (Newton & Keenan, 1990) influence whether or not the individual will respond with adaptative or maladaptive behaviour. Ashford (1988) found that various coping resources such as feelings of personal control and tolerance of ambiguity, and responses such as sharing concerns and worries, moderated the stressor-strain relationship. Social support has also been regarded as a strong moderator variable that buffers the negative impact of stressors (Callan, 1993; Dekker & Schaufeli, 1995; Kessler et al., 1985). In addition, differential reactions to stressful events at work and job insecurity have been shown to be a function of the job level employees hold within the organisation (Cooper & Bramwell, 1992; Khunert & Vance, 1992; Orpen, 1993a). Research has thus shown that employees utilise a variety of resources and strategies in reacting to change and job insecurity. Accordingly, future research should be concerned with understanding the role of various potential moderators in mitigating the effects of stressful experiences and job insecurity on indicators of strain.

Research has rarely concentrated on characteristics of individuals which mediate reactions to stressful change (Nelson et al., 1995). Lazarus (1993) states that coping operates as a powerful mediator of emotional outcomes by changing the individual's relationship with the environment or by changing the ways individuals attend to or interpret what is happening. Israel et al.(1989) found that the ways in which workers cope with job stressors have significant associations with stress reactions. Dewe et al. (1993) stated that coping methods, whereby the individual refers to what is at stake and what can be done, are key elements of understanding what individuals actually think and do in a stressful encounter. Other authors have found that employees facing a stressful situation such as job insecurity go through a common sequence of

as psychological distress, job satisfaction and organisational commitment have been found to yield different effects in terms of causal ordering (Davy et al., 1991; Hendrix et al., 1991; Vandenberg & Lance, 1992), it would be interesting for future research to address the location of each indicator in terms of a stress model.

The model in the current research served as an initial attempt in the development and testing of a theoretical framework outlining some psychological responses of individuals to stressful change and job insecurity. The present study may thus operate as a starting point for future research. Previous studies of stress have reflected both the diversity and the complexity of factors that may contribute to employees' perceptions of stress (Decker & Borgen, 1993). It is therefore clear that the understanding of the nature of the stress process may have to await the inclusion of a broader range of variables and influences. When a wide array of variables are studied, it may be ascertained which stressors are most often associated with stress outcomes, the relationship between objective stressors and cognitive appraisals, and the manifestations of strain responses most likely to emerge under conditions of stressful changes. The present study did not test all potential outcomes of stressors and job insecurity. Although the present study demonstrated that stressful environmental change and job insecurity play a role in generating stress reactions, such factors cannot account for or explain away the impact of other variables. Future research thus has a plethora of variables to explore within the context of stressful change and job insecurity.

Unexplained variance in the model of the present study infers that explanatory variables have been omitted from the study that could further explain the stress and job insecurity process. The present study demonstrated that the environment produces a host of stressors. Future research could examine potential moderators such as the impact of individual differences on the stressor-strain relationship. Since, stressors are difficult for any individual and organisation to avoid, if some individuals can withstand these pressures better

An additional limitation of the present study relates to the nature of the constructs measured. A limitation was identified in terms of one of the dimensions of stressful environmental change. Political and social change was measured by the Social Change Index which was specifically designed to measure the South African socio-political climate and for use on South African samples (Bluen & Ribeiro, 1992). On the other hand, organisational change was assessed by the Organizational Change Inventory (OCI) which was developed on an overseas sample, and focuses on general types of job changes occurring within any organisation (Sarason & Johnson, 1979). Even though the OCI was found to be psychometrically sound in the present research and has exhibited validity in other South African samples (e.g., Kruger, 1987; Marks, 1986), its shortcoming was that it did not include specific issues pertaining to the South African climate. Changes such as affirmative action were identified by some subjects in the open-ended question of the OCI referring to the occurrence of additional work-related events. Since it was raised by respondents, and because affirmative action has become one of the mechanisms to change South African organisations (Venter, 1994), it should have been measured in the present study. Future research on organisational change should therefore attempt to develop and utilise a measure which addresses issues specific to the South African situation, which would in turn enable researchers to assess more accurately the potential stress associated with change in South African organisations.

A further possible limitation in terms of the nature of the constructs measured, related to stress reactions. In the present study, stress reactions was treated as a composite index. Although the literature and research has commonly cited that the construct stress reactions is comprised of outcomes such as psychological distress, lower job satisfaction and reduced organisational commitment (Cooper & Cartwright, 1994; Jamal, 1990; Rice, 1992), information could have been lost in the present study when stress reactions was treated as one construct. Instead, by measuring each indicator as a unique construct, the differential effects of each indicator could be assessed. Since, variables such

measures when one is measuring cognitions which require to report on what may have been ephemeral thoughts (Ashford, 1988). Thus, despite the weaknesses of a cross-sectional self-report methodology, this design can be useful in providing a picture of how people feel about and view their jobs (Spector, 1994).

Sullivan and Bhagat (1992) proposed that it is important that researchers should employ maximally dissimilar methods in collecting data on both independent measures of stress and affective responses, as this will reduce the likelihood of common method variance. The current research, in addition to utilising subjective forms of measurement for dependent variables, employed a more objective form of stressor measurement in the use of life event scales, as they include objective measures of event occurrence (Shrout et al., 1989). Newton (1989) refers to the need for research employing more qualitative approaches to investigating stress. Researchers such as Gorman (1993) and Simons et al. (1993), have already expressed their preference for interview-based measures of life events on the basis that they are sensitive to the subtleties of life events, provide information about the personal meaning of events, and the stressfulness of events by assessing the circumstances under which the event occurred and the reason of the significance of the event. Using multiple methods of sources of data can expand the confidence with which conclusions can be drawn from a set of data (Spector, 1994). Thus, subsequent studies may benefit greatly from the use of alternative measurement strategies, such as qualitative data collection techniques including interviews, focus groups or participant observation. In addition, qualitative data could assess more detail on the meaning of events and the circumstances under which events occurred in the context of the South African macro-environment.

A further limitation of the present study pertains to the means of data collection. One source of data was utilised, namely self-report, paper-and-pencil measures. Although all the instruments used in the present research were psychometrically sound, certain problems with this overall strategy exist. The use of one source of data, the self report has become the target of criticism by researchers (Spector, 1994). Scepticism is reflected in other researchers' comments that interpretations of results are complicated by common method variance, in that reliance on subjective measures tends to overestimate the magnitudes of correlations (Sullivan & Bhagat, 1992). This is inflated with cross-sectional designs because measures are taken simultaneously at one point in time. This may lead to spurious associations between negative events and affective reactions, as individuals with a consistently negative response bias may inflate the correlation between the two (Nelson et al., 1995). In addition, cognitive factors have been found to influence self-report measures. Decker and Borgen (1993) stated that negative affectivity is a potent individual difference variable that influences self-reports of both stressors and subsequent perceptions of strain. Individuals high in negative affectivity tend to focus on negative aspects of themselves, which influences the perception and reporting of strain. In addition, Simons et al. (1993) demonstrated that dysfunctional attitudes and attribution style, are related to the definition and severity ratings of self-report measures. Anastasi (1988) also cautioned that due to response biases, such as social desirability, subjects' moods, as well as distortions of memory, not all respondents will answer the questions accurately.

Spector (1994) stated there are good reasons to be cautious in the use of self-report questionnaires, but reasons of caution are as important for other methodologies as well. Furthermore, the effects of common method variance may not be as great as has sometimes been assumed in the past, and that research that depends on well-validated measures with reasonably sound psychometric properties may not be distorted by method variance (Spector, 1987). In the present study all measures were well-validated and psychometrically sound. Moreover, it is often necessary to utilise self-report

collection than upon data analysis. When data relies on cross-sectional evidence, it precludes the possibility of control of prior levels of stress. The major weakness of a cross-sectional design is that it may fail to consider the individual baseline levels of outcome variables, whereas, the advantage of the use of longitudinal studies is that subjects initial scores on the measures attain the status of control or baseline measures (Nelson et al., 1995). Thus, even though the present study specified causal relations with the use of LISREL, a longitudinal study would be able to determine more adequately the causal priorities in the relationships amongst stress processes.

The cross-sectional nature of the present study was limiting in that the strength and duration of the affects of stressors and job insecurity on stress reactions could not be assessed over time. Seguin and Roskies (1991) proposed that although job insecurity has been shown to be psychologically harmful in the short run, it is possible that these negative effects are time limited, with individuals eventually learning to live with the uncertainty. However, they found in their follow-up study that the negative effects of job insecurity persisted over time, in that six months later individuals had not habituated to job insecurity, but continued to show multiple signs of distress. In addition, longitudinal research designs enable the researcher to consider the different phases of potentially stressful life events, since it is likely that during the course of a stressful encounter personal meanings and appraisals change (Vossel, 1987). In order to assess the pattern of change, Nelson et al. (1995) studied the impact of change over three periods of organisational transition; prior, during and after the organisational change. They found that there was much variance in the variables between the stages. Future research should therefore adopt longitudinal studies to obtain more detailed information on strength and duration of the effects of stressors and job insecurity on stress reactions.

The present study was conducted in relatively stable organisations. These organisations could be classified as low-risk organisations in that they were not subject to intense organisational changes that would induce a high perceived threat of total job loss. In terms of manipulation of the independent variable, stronger results could have been obtained if the study had been conducted within high risk organisations, that is in organisations subject to intense organisational changes. In the present study individuals did experience a significant amount of job insecurity, which confirmed that even changes in stable organisations can lead to perceived job insecurity among individuals (Greenhalgh, 1982). Yet, it is also recognised that if such relationships are evident in relatively stable organisations, negative reactions in more acutely distressed organisations may be even more severe (Khunert & Vance, 1992). Since individuals who work for organisations at risk will be more prone to considerable stress (Jick, 1985) and are more likely to perceive a significant amount of job insecurity (Roskies and Lolus-Guerin, 1990; Seguin & Roskies, 1991), future research would benefit greatly from replication studies conducted in other organisational settings facing greater risk.

The current research was cross-sectional study as it represented an attempt to capture some affective and attitudinal responses of individuals during the period of elections, at a time where stress levels of the population were elevated. It would, however, be interesting to assess how levels of stress would differ in longitudinal studies. Thus, future research in this field within the South African context is warranted.

Cross-sectional data undermines the strength of causal inferences. Even though, LISREL has allowed for significant improvements in analytical techniques in discerning causal relations (Chen & Land, 1990), the use of structural equation modeling cannot overcome the limitation of having all data collected concurrently (Spector, 1994). Brannick (1995) remarked that LISREL does not establish proof of causality, instead causality is an assumption. This is because causal inferences are much more heavily dependent upon data

## Limitations and directions of future research

To enhance the credibility of the present findings, certain methodological criticisms of research were considered. It is recognised that generalisations from research in organisational settings are limited when only one setting is sampled (Cook & Campbell, 1979). In the current research, the sample was selected from three sectors of the economy; retail, service, and the public sector. It has also been found that sample size may limit the power of statistical testing (Dekker & Schaufeli, 1995), in that small samples can result in incorrect interpretations of the data and unstable parameter estimates (Davy et al., 1991). With regard to LISREL, it has been suggested that it is not advisable to use a sample size of less than 100 (Cadwallader, 1987). A generalised guideline is that when researchers want to reduce the risk of drawing erroneous conclusions, they should not use a sample size of less than 200 (Lavee, 1988). The present study sample consisted of 267 subjects. The present research also heeded the criticism that stress research is limited by the abundance of two-variable designs and lack of multivariate research designs (Jex et al., 1991; Sullivan & Bhagat, 1992). Accordingly, it tested a multivariate model, and powerful statistics were utilised to complement the research design. LISREL has been evaluated as the best available systematic development of statistical procedures to handle the dual inferential problems of simultaneously assessing measurement and theoretical models (Lavee et al., 1985).

The present study thus addressed a number of methodological issues in conducting an exploratory study, and obtained significant results for the whole model. Yet, despite addressing these methodological issues, a number of limitations can be identified, and indicate directions for future research.

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models and a crucial aspect of intervention efforts to improve employee health (Hendrix et al., 1991). Organisations may introduce stress management programmes with the aim to help managers and employees cope with the effects of change and job insecurity (Bargal et al., 1992). However, the results of the present study emphasise the need for work stress interventions that go beyond organisational dimensions and to include broader environmental dimensions. The current research provides evidence that continued exposure to stressful changes associated with living in South Africa is related to increased psychological distress. This has important practical implications for both organisations and individuals, as the majority of the South African workforce are subject to strassful life conditions, such as violence, crime, fatigue due to lack of sleep and noise, squatting and disease which adversely affect performance in the workplace (Odesnik- Duke, 1990). Authors such as Gxwala (1995), Mallmela (1994) and Werth (1994) recognise that South African organisations are going to have to accommodate and cope with the widespread changes occurring within the macro-environment. These rapidly changing circumstances generate high levels of uncertainty which must be confronted effectively if companies hope to survive (Wolmarans, 1995). Psychologists such as Gluckman (1990) have noted the need for greater corporate responsibility to provide employees with the opportunity to deal with change successfully and not to succumb to stress. This may be achieved by providing members of the organisation with professional support and guidance in the form of counselling and Employee Assistant Programmes. Organisations also need to ascertain the nature of stressors relevant to their employees, before embarking on corrective programmes involving social issues such as education, housing and health (Odesnik-Duke, 1990), and before they develop stress management programmes (Cooper & Cartwright, 1994). The findings of the current research may aid in the identification of the stressful circumstances in both the macro-environment and organisation which impact upon employees.

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| EVENT | occurred | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
|---|---|---|---|---|---|---|---|---|
| 36. Installed additional security in your home. | | | | | | | | |
| 37. A family member or friend died due to political violence. | | | | | | | | |
| 38. Children receive inadequate or inferior schooling. | | | | | | | | |
| 39. Fear of change. | | | | | | | | |
| 40. Dealing with people who have different beliefs to you. | | | | | | | | |
| 41. Purchased a gun. | | | | | | | | |
| 42. Victim of reverse discrimination. | | | | | | | | |
| 43. Made use of integrated public transport facilities. | | | | | | | | |
| 44. Affected by buses which stopped running. | | | | | | | | |
| 45. Involved in an accident with a combi taxi. | | | | | | | | |
| 46. Experienced a lack of faith in the government. | | | | | | | | |
| 47. Not doing things that you are used to for fear of danger. | | | | | | | | |
| 48. Being victimised. | | | | | | | | |
| 49. Increased alcohol problems in your family. | | | | | | | | |
| 50. Increase in cost of living. | | | | | | | | |
| 51. Experienced problems with your accomodation. | | | | | | | | |
| 52. Locking your car when you drive. | | | | | | | | |
| Any additional socio-political events which have affected you? List and rate. | | | | | | | | |
| 1. | | | | | | | | |
| 2. | | | | | | | | |

| EVENT | occurred | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
|---|---|---|---|---|---|---|---|---|
| 15. Changes in policies and practices occurred in your church. | | | | | | | | |
| 16. Experienced feelings of uncertainty about the future of South Africa. | | | | | | | | |
| 17. Heard about violent crime in your community. | | | | | | | | |
| 18. Changed your political views. | | | | | | | | |
| 19. Being sexually assaulted. | | | | | | | | |
| 20. Being involved in a physical fight. | | | | | | | | |
| 21. Being forced to accept an undesirable job. | | | | | | | | |
| 22. Disagreeing with the socio-political changes taking place. | | | | | | | | |
| 23. Being concerned about the education of your children. | | | | | | | | |
| 24. Experienced increased family violence. | | | | | | | | |
| 25. Being abused by your spouse. | | | | | | | | |
| 26. Having your property wilfully damaged. | | | | | | | | |
| 27. Exposed to racially integrated holiday and recreation facilities. | | | | | | | | |
| 28. Racial integration in the workplace. | | | | | | | | |
| 29. Experienced violence on public transport. | | | | | | | | |
| 30. Experienced security force brutality. | | | | | | | | |
| 31. Living in inadequate housing. | | | | | | | | |
| 32. Being forced to stay away from work. | | | | | | | | |
| 33. Know of AIDS related incidents. | | | | | | | | |
| 34. Scrapping of apartheid laws. | | | | | | | | |
| 35. Being intimidated. | | | | | | | | |

Listed below are a number of events that may have affected your life. Please indicate which of these events YOU have experienced during the last year.

Please place an "X" in the "occurred" column if you have experienced that event. If you did not experience the event, then leave the column blank and go to the next item. Also for those events which you have experienced, please indicate the extent to which you viewed the event as having a positive (good) or negative (bad) effect on you **at the time of occurrence.**

-3 = extremely negative effect
-2 = moderately negative effect
-1 = slightly negative effect
0 = no effect
+1 = slightly positive effect
+2 = moderately positive effect
+3 = extremely positive effect

| EVENT | occurred | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
|---|---|---|---|---|---|---|---|---|
| 1. Experienced interracial conflict. | | | | | | | | |
| 2. Interpersonal relationships changed. | | | | | | | | |
| 3. Had to change your standard of living. | | | | | | | | |
| 4. Experienced political violence. | | | | | | | | |
| 5. Experienced changes in sport and recreational facilities. | | | | | | | | |
| 6. Family members/friends emigrated. | | | | | | | | |
| 7. Changed recreation activities. | | | | | | | | |
| 8. Called up for National Service/Camp. | | | | | | | | |
| 9. Being exposed for the first time, to radically different political views to yours. | | | | | | | | |
| 10. Felt insecure/unsafe in your home. | | | | | | | | |
| 11. Being in a life threatening situation. | | | | | | | | |
| 12. Fear of violence. | | | | | | | | |
| 13. Rapid socio-political changes in the country. | | | | | | | | |
| 14. Experienced difficulty in planning for the future. | | | | | | | | |

## CONFIDENTIAL BIOGRAPHICAL INFORMATION

Please answer all the questions. Place an "X" in the relevant boxes.

1. Date of birth

| | | | | | |
|---|---|---|---|---|---|
| | | | | | |
| y | y | m | m | d | d |

2. Gender

| | |
|---|---|
| | |
| Male | Female |

3. Homelanguage _____

4. Job title _____

5. Town/suburb in which you presently live _____

6. Are you a member of a trade union?

| | |
|---|---|
| | |
| Yes | No |

7. Highest education obtained?

A = Below Std.8
B = Std.8 or Std.9
C = Matric
D = Post-matric

| | | | |
|---|---|---|---|
| | | | |
| A | B | C | D |

8. Any serious illnesses in the past five years?

| | |
|---|---|
| | |
| Yes | No |

If yes, please give details _____

_____

_____

*Department of Psychology*

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Private Bag X WITS 2050, South Africa • Telegrams: Univers • Telex 4-[illegible] • Telephone (011) 716-[illegible]

Dear Sir/Madam

I am conducting research for a Masters degree in Industrial Psychology at the University of the Witwatersrand. The purpose of the research is to assess whether the social, political and economic changes occurring in South Africa, and the changes occurring within business organisations are affecting people.

I would appreciate your assistance in this research by answering the attached questionnaire which should take approximately fifteen minutes to complete.

Your participation in this research is voluntary and you may withdraw at any time. Anonymity is guaranteed as you do not need to put your name on the questionnaire. Your answers will be treated with the strictest confidence. No-one in your company will see your answers, only I will have access to the completed questionnaires.

Thank you for your cooperation.

Yours sincerely,

Beverley Carr (B.A. Honours)
Department of Psychology
University of the Witwatersrand



The University of the Witwatersrand rejects racism and racial segregation. It is committed to non-discrimination particularly in the constitution of its student body, in the selection and promotion of its staff, and in its administration.

## APPENDIX 1

Covering letter, demographic checklist and measuring instruments

Zimmerman, M., Pfohl, B., & Stangl, D. (1986). Life events assessment of depressed patients: A comparison of self-report and interview formats. Journal of Human Stress, 111, 13-19.

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Please indicate how satisfied or dissatisfied you feel about the following aspects of your job at the present moment.

| | EXTREMELY DISSATISFIED | DISSATISFIED | UNSURE | SATISFIED | EXTREMELY SATISFIED |
|---|---|---|---|---|---|
| 1. The physical work conditions. | | | | | |
| 2. The freedom to choose your own method of working. | | | | | |
| 3. Your fellow workers. | | | | | |
| 4. The recognition you get for good work. | | | | | |
| 5. Your immediate boss. | | | | | |
| 6. The amount of responsibility you are given. | | | | | |
| 7. Your rate of pay. | | | | | |
| 8. Your opportunities to use your abilities. | | | | | |
| 9. Industrial relations between management and worker in your company. | | | | | |
| 10. Your chance of promotion. | | | | | |
| 11. The way your company is managed. | | | | | |
| 12. The attention paid to suggestions you make. | | | | | |
| 13. Your hours of work. | | | | | |
| 14. The amount of variety in your job. | | | | | |

Listed below are a series of statements that represent possible feelings that people might have about the company/organisation for which they work. With respect to your own feelings about the particular organisation for which you are now working, please indicate the degree of your agreement or disagreement with each statement by checking one of the alternatives next to each statement.

| | STRONGLY DISAGREE | DISAGREE | NEITHER AGREE NOR DISAGREE | AGREE | STRONGLY AGREE |
|---|---|---|---|---|---|
| 1. I am willing to put in a great deal of effort beyond that normally expected in order to help this organisation be successful. | | | | | |
| 2. I talk about this organisation to my friends as a great organisation to work for. | | | | | |
| 3. I would accept almost any type of job assignment in order to keep working for this organisation. | | | | | |
| 4. I find that my values and the organisation's are very similar. | | | | | |
| 5. I am proud to tell others that I am part of this organisation. | | | | | |
| 6. This organisation really inspires the very best in me in the way of job performance. | | | | | |
| 7. I am extremely glad that I chose this organisation to work for rather than others I was considering at the time I joined. | | | | | |
| 8. I really care about the fate of this organisation. | | | | | |
| 9. For me this is the best of all possible organisations for which to work. | | | | | |

The following items focus on how you have been feeling recently. Please place an "X" in the appropriate block.

| Recently, have you ..... | NOT AT ALL | SOMETIMES | FREQUENTLY | ALWAYS |
|---|---|---|---|---|
| 1. Been able to concentrate on whatever you are doing? | | | | |
| 2. Lost much sleep over worry? | | | | |
| 3. Felt you are playing a useful part in things? | | | | |
| 4. Felt capable of making decisions about things? | | | | |
| 5. Felt constantly under strain? | | | | |
| 6. Felt that you could not overcome your difficulties? | | | | |
| 7. Been able to enjoy your normal day-to-day activities? | | | | |
| 8. Been able to face up to your problems? | | | | |
| 9. Been feeling unhappy and depressed? | | | | |
| 10. Been losing confidence in yourself? | | | | |
| 11. Been thinking of yourself as a worthless person? | | | | |
| 12. Been feeling reasonably happy, all things considered? | | | | |

| * Looking to the future, what is the probability that changes could occur, changes you don't want or might disagree with, that would negatively affect each of these features? | | | | | |
|---|---|---|---|---|---|
| | NEGATIVE CHANGE VERY UNLIKELY | NEGATIVE CHANGE UNLIKELY | NEGATIVE CHANGE NEITHER LIKELY NOR UNLIKELY | NEGATIVE CHANGE LIKELY | NEGATIVE CHANGE VERY LIKELY |
| 1. Your geographic location? | | | | | |
| 2. Your potential to get ahead in the organisation? | | | | | |
| 3. Your potential to maintain your current pay? | | | | | |
| 4. Your potential to attain pay increases? | | | | | |
| 5. The status that comes with your position in the company? | | | | | |
| 6. Your current freedom to schedule your own work? | | | | | |
| 7. Your current freedom to perform your work in a manner you see fit? | | | | | |
| 8. Your current access to resources (people, materials, information) in the organisation? | | | | | |
| 9. Your current sense of community in working with good coworkers? | | | | | |
| 10. The amount of feedback you currently receive from your supervisor? | | | | | |
| 11. The supervision you receive? | | | | | |
| 12. The physical demands your job places on you? | | | | | |
| 13. The opportunity to interact with the public? | | | | | |
| 14. The variety of tasks you perform? | | | | | |
| 15. The opportunity to do an entire piece of work from start to finish? | | | | | |
| 16. The significance of your job? | | | | | |
| 17. The extent to which you can tell how well you are doing your job as you do it? | | | | | |

The following questions concern your attitude towards, and perceptions of job insecurity. Please place an "X" in the appropriate block. (For each question mark one block only).

| * Thinking about the future how likely is it that each of the following events might occur to you in your current job? | VERY UNLIKELY | UNLIKELY | NEITHER LIKELY NOR UNLIKELY | LIKELY | VERY LIKELY |
|---|---|---|---|---|---|
| 1. Lose your job and be moved to a lower level job within the organisation? | | | | | |
| 2. Lose your job and be moved to another job at the same level within the organisation? | | | | | |
| 3. Find that the number of hours the company can offer you to work, may fluctuate from day to day? | | | | | |
| 4. Be moved to a higher position within your company? | | | | | |
| 5. Be moved to a higher position in another geographic location? | | | | | |
| 6. Lose your job and be laid off for a short while? | | | | | |
| 7. Lose your job and be laid off permanently? | | | | | |
| 8. Find your department or division's future uncertain? | | | | | |
| 9. Lose your job by getting fired? | | | | | |
| 10. Lose your job by being pressured to accept early retirement? | | | | | |

| * Indicate how much you agree or disagree with the following statements. (Place an "X" in the appropriate block). | STRONGLY DISAGREE | DISAGREE | NEITHER AGREE NOR DISAGREE | AGREE | STRONGLY AGREE |
|---|---|---|---|---|---|
| 1. I have enough power in this organisation to control events that might affect my job. | | | | | |
| 2. In this organisation, I can prevent negative things from affecting my work situation. | | | | | |
| 3. I understand this organisation well enough to be able to control things that affect me. | | | | | |

| EVENT | occurred | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
|---|---|---|---|---|---|---|---|---|
| 18. Failure to get expected promotion. | | | | | | | | |
| 19. Change to new type of work. | | | | | | | | |
| 20. Failure to get expected pay raise. | | | | | | | | |
| 21. Dismissal of coworker. | | | | | | | | |
| 22. Injury to coworker. | | | | | | | | |
| 23. Work-related personal injury. | | | | | | | | |
| 24. Transfer. | | | | | | | | |
| 25. Strike. | | | | | | | | |
| 26. Conflict with subordinates. | | | | | | | | |
| 27. Change in work rules or regulations. | | | | | | | | |
| 28. Work-related death of coworker. | | | | | | | | |
| 29. Negotiations. | | | | | | | | |
| 30. Citation for outstanding work performance. | | | | | | | | |
| Other work-related events which have affected you? List and rate. | | | | | | | | |
| 1. | | | | | | | | |
| 2. | | | | | | | | |
| 3. | | | | | | | | |
| 4. | | | | | | | | |

Listed below are a number of events sometimes experienced by individuals employed in various occupations which bring about change in the work situation and which require some degree of readjustment. Please mark those events which you have experienced in the past year. Also, for each item which has occurred below, please indicate the extent to which you viewed the event as having either a positive (good) or negative (bad) effect on you at the time of occurrence.

-3 = extremely negative
-2 = moderately negative
-1 = slightly negative
0 = no effect
+1 = slightly positive
+2 = moderately positive
+3 = extremely positive

| EVENT | occurred | -3 | -2 | -1 | 0 | +1 | +2 | +3 |
|---|---|---|---|---|---|---|---|---|
| 1. New supervisor/management. | | | | | | | | |
| 2. Promotion. | | | | | | | | |
| 3. Conflict with co-worker. | | | | | | | | |
| 4. New office. | | | | | | | | |
| 5. Change in work responsibilities. | | | | | | | | |
| 6. More employees under your supervision. | | | | | | | | |
| 7. Being demoted. | | | | | | | | |
| 8. Change in close work associate(s). | | | | | | | | |
| 9. Conflict with supervisor/management. | | | | | | | | |
| 10. Suspended from job. | | | | | | | | |
| 11. Fewer employees under your supervision. | | | | | | | | |
| 12. Being put on probation. | | | | | | | | |
| 13. Salary increase. | | | | | | | | |
| 14. More dangerous working conditions. | | | | | | | | |
| 15. Reduction in pay. | | | | | | | | |
| 16. Job training or development programme. | | | | | | | | |
| 17. Change in working hours. | | | | | | | | |

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