

**THE RELATIONSHIP BETWEEN BURNOUT
AND JOB SATISFACTION AMONGST FIRE FIGHTERS
IN A LOCAL AUTHORITY**

by

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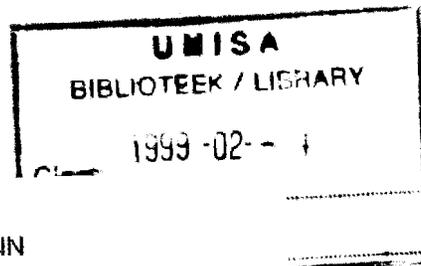
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SUMMARY

Fire fighters are involved in critical decision making situations, and under-performance and lack of job satisfaction due to burnout could adversely affect the welfare of the people that are being provided with the service. This study thus investigated the relationship between burnout and job satisfaction amongst operational fire fighters.

Two measuring instruments were used: the Pines, Aronson & Kafry (1981) Burnout Index, and the Smith, Hulin and Kendall (1969) Job Descriptive Index. This study was conducted amongst 102 fire fighters working for a local authority.

Through a literature review, burnout and job satisfaction were defined, and a link between the two constructs outlined. Through an empirical study, the relationship between burnout and job satisfaction was determined.

Supporting evidence indicates a negative correlation between burnout and job satisfaction, as well as revealing social support amongst co-workers as being an important buffer against the effects of burnout.

KEY TERMS

Buffer; Burnout; Coping; Co-workers; Emergency services personnel; Fire fighters; Job satisfaction; Social support; Stress.

CHAPTER 1 SCIENTIFIC REVIEW OF THE RESEARCH

This dissertation focuses on the relationship between burnout and job satisfaction amongst operational fire fighters. This chapter provides a broad overview of the reason for this research study. It examines the research background, including stressors that fire fighters are subjected to, as well as the organisational background. It outlines the problem statement and general aims of the research, as well as the research model and paradigm perspectives utilised. The research design and method are then described. Finally, chapter division is delineated.

1.1 RESEARCH BACKGROUND

Stress-related disorders are the physiological, cognitive, psychological and behavioural manifestations of an acute or chronic nature, and known to occur in persons employed in emergency service occupations (Mitchell & Bray, 1990). Stress-related signs and symptoms are the major outcome of interest in this research because they impact fire-fighter length of employment, health status following retirement, and because they impose high economic costs on employers (Murphy, Beaton, Cain & Pike, 1994).

Fire fighters are involved in life and death decision-making, and under-performance and lack of job satisfaction due to burnout could adversely affect the welfare of the people that are being provided with the service.

In the plethora of management philosophies and practices which have emerged in the past few years, one principle has become paramount: employee satisfaction matters (Hofmeyr, 1997). It is accepted that motivated and committed employees can be a major contributor to, and determinant of organisation success. Employee satisfaction has become a key performance indicator for most of the world's successful companies and a key corporate priority for organisations trying to achieve or sustain leadership positions in industries and markets (Hofmeyr, 1997).

The organisation under investigation needs a mechanism that measures the extent of burnout being experienced by its employees, so that it can implement strategies timeously. It also needs to examine job satisfaction in order to optimise satisfaction being experienced, and minimise any dissatisfaction

From the literature survey undertaken, the majority of the burnout research thus far has been conducted in the United States. Thus, research involving a South African sample of fire fighters has strategic significance in that it provides information that is specific to this country.

1.1.1 Stressors experienced by fire fighters

Fire fighters are exposed to life-threatening situations and physically demanding activities (Fullerton, McCarroll, Ursano & Wright, 1992). Repeated exposure to trauma can put rescue workers, especially first responders such as fire fighters and police officers, at increased risk of developing post-traumatic stress disorders (Breslau, Davis, Andreski & Peterson, 1991; Keating, Blumenfield, Reilly, Pine & Mittler, 1987; McFarlane, 1988a, 1988b; McFarlane & Raphael, 1984).

Data shows that approximately 8% of fire fighter job disabilities reported in the United States in 1991 were due to mental stress (IAFF, 1992), and according to Leigh (1988), fire fighters rank fifth in mortality amongst U.S. workers. The National Commission on Fire Prevention and Control in America has declared that fire fighting is the most hazardous and dangerous occupation in the United States (Hildebrand, 1984b). Every year, over 650 fire fighters are forced to retire due to occupational illness - including psychological stress (Hildebrand, 1984b).

Whilst these statistics are specific to America, fire fighting world-wide is considered a dangerous occupation, and one which gives rise to considerable stress (Breslau, Davis, Andreski & Peterson, 1991; Keating, Blumenfield, Reilly, Pine & Mittler, 1987; McFarlane, 1988a, 1988b; McFarlane & Raphael, 1984). There is considerable evidence that fire fighters in general experience many

stressors and trauma symptoms during their careers (Corneil, 1992; Hartsough, 1985; Mitchell & Bray, 1990).

Fire fighters also work long shifts that can be boring, sleep-disrupted and dangerous. Shift-work affects job performance, normal sleep patterns, social and family life, and is the equivalent of chronic jet lag (Murphy, Beaton, Cain & Pike, 1994). Thus, shift workers are at risk for stress-related disorders (Tasto, Colligan, Skjei & Polly, 1978).

In the United States, fire fighters respond to emergencies about 60% of the time on any given shift (Murphy, Beaton, Cain & Pike, 1994). Thus, they witness and / or confront actual or threatened injury and death to self or others, must convey news of tragedy, and institute life-saving measures (Beaton & Murphy, 1993). Confronting injury and death is cited as an extreme stressor (McFarlane, 1988b; Mitchell & Bray, 1990).

In 1995, the first ever survey of fire fighter injuries in South Africa was undertaken by the Fire Protection Association. It was found that 625 fire fighters were injured and 202 were hospitalised whilst attending fires during 1995. The incidence of fire fighter injuries in South Africa is 14.5 injuries per 1000 fires attended. This compares well with the American figure of 25.7 fire fighter injuries per 1000 fires attended.

A finding of interest was that there is a far higher risk of injury in a larger fire department than a smaller fire department. This may be because larger fire departments are exposed to a wider range of hazardous situations. This finding correlates well with American statistics, and may have implications for the fire department under investigation in this research, as it is classed as a larger fire department.

Karasek, Theorell, Schwartz, Schnall, Pieper and Michaela (1988), specifically identify "firemen" as employees of a high demand / low control occupation, i.e.

having repeated demands placed upon them with little choice of assignments. According to Karasek et al (1988) this can be a stressful combination.

According to Sparrius (1992), there is an absence of research in South Africa amongst rescue service workers, of which fire fighters form a part. Oosthuizen (1994) examined stress symptomatology among emergency service staff and found that ambulance men have an exceptionally stressful job and displayed more symptoms of stress disorders than the control group. However, this study, whilst focusing on emergency service staff, did not examine fire fighters in particular.

Swanepoel and Van Outshoorn (1988) conducted a study to establish whether certain personality characteristics contribute to resistance to stress, using brigadesmen as the test group. Results of the Sixteen Personality Factor Questionnaire (16PF) indicated that brigadesmen, on the basis of personality, are better able to cope with stress.

De Villiers (1988) examined causes, effects, diagnoses and treatment of stress with relevance to fire brigade personnel, and Dietrich and Hattingh (1993) investigated critical incident stress in emergency services personnel. Barber (1991) examined the socio-economic desirability of the privatisation of fire services in South Africa. Odendal and Van Wyk (1988) translated a burnout inventory into Afrikaans. However, literature pertaining specifically to fire fighters, with particular reference to burnout and job satisfaction is scarce.

In South Africa, researchers need to examine the stress experienced by fire fighters to consider how it might be managed. This includes the stress of normal adult life, plus the physical demands of fire service and other psycho-physiological stressors. Psychological stressors encountered by the fire fighters include feelings of uncertainty and boredom during vigilant periods, fear for their own and others' safety, exposure to human tragedy, and interpersonal tension during crises in fire fighting (Hildebrand, 1984a).

The area of fire fighters and stress therefore offers a plethora of possible research topics. Most of the research conducted thus far concentrates on the impact of disasters on fire fighters, with particular reference to Post Traumatic Stress Disorder (McFarlane 1984, 1988a, 1988b). There is a paucity of research on the continual repeated effects of day to day stress, which may result in burnout.

1.1.2 Organisational Background

The organisation under investigation is situated in a local authority, in a large coastal city and was established in 1898. It comprises seven fire fighting units, dispersed around its geographical location.

In terms of training of fire fighters, this is conducted on a two-tier system, i.e. in-service training which comprises skills training, and external theoretical examinations through either the South African Fire Services Institute or a technikon, up to the level of a Diploma Laureatus (T6) in Fire Technology. A fire fighter possessing the right qualifications and experience may also be registered as a professional technologist with the Engineering Council of South Africa. Most fire fighters also train to become paramedics as well as acquire skills in other specialist fields such as rescue scuba diving (Career, 1989).

The career advancement prospects for fire fighters appear to be rigid and somewhat limited in their application. The entry level requirement is a Standard 8, and entry rank is that of Fire Fighter. Progression is then to Senior Fire Fighter, Station Commander, and finally, Division Commander.

After four years as a Fire Fighter, promotion to Senior Fire Fighter is permitted, provided that a Fireman's Certificate, a pass in Physical Training (a "B" pass), and a heavy duty Driver's Licence (code 10) have been obtained. After eight years as a fire fighter, there is a possibility of being promoted without a Fireman's Certificate, provided a pass in Physical Training (a "C" pass) and a heavy duty Driver's Licence (code 10) have been obtained.

A fire fighter can be a Second Class or a First Class fire fighter. This does not affect rank, but does influence remuneration. The fire fighter is required to pass certain proficiency tests to become Second Class, and subsequently to become First Class.

There are four grades within the ranks of Fire Fighter and Senior Fire Fighter respectively. Each year they automatically go up a grade, unless they are found to be incompetent. The various notches do not affect rank, but do affect pay. The higher the grade, the higher the income.

The promotional opportunities once the position of Senior Fire Fighter has been attained, are Station Commander, and then Division Commander. Promotion into these two very senior positions is only possible once there is a vacancy, and as this is infrequent, the average fire fighter normally remains in the position of Senior Fire Fighter until retirement. In order to get promoted into these senior positions, criteria such as qualifications, courses attended and passed, and performance would be reviewed. This slow, rigid career path may have a critical impact on job satisfaction levels (Pines, Aronson & Kafry, 1981).

1.2 PROBLEM STATEMENT

Firstly, the relationship between burnout and job satisfaction will be investigated. The strength of the relationship between burnout and job satisfaction indicates that they are overlapping (Harrison, 1980; Karger, 1981; McNeely, 1983) yet not identical dimensions (Drory & Shamir, 1988; Landsbergis, 1988; Maslach & Jackson, 1981b; Riggall, Godley & Hafer, 1984). This should be expected since both are affective work responses. Despite this relatively firm association, the nature of the link between job satisfaction and burnout has been largely unclear, and has potential for research. The present study was undertaken to address this problem, both from a theoretical viewpoint, and within a specific organisational setting. The question that arises here is whether a relationship exists between burnout and job satisfaction amongst the sample under investigation.

Stated in terms of a general research hypothesis, there is a relationship between the dimensions of burnout and job satisfaction, as identified by a survey of the literature. The nature of such a relationship needs to be specified with a view to theory corroboration, as well as possible organisational interventions. The research envisaged is therefore of a basic, hypothesis-generating nature.

The second research question that arises is whether a significant number of fire fighters are in fact experiencing symptoms of burnout, or whether this is not a problem with the sample under investigation. If the subjects are experiencing burnout, this will be in line with the world-wide trend of burnout being experienced by emergency services personnel, and fire fighters in particular (Pendleton, Stotland, Spiers & Kirsch, 1989).

The next question that logically arises is whether the burnout instrument utilised (Pines, Aronson and Kafry's 1981 Burnout Index) predicts job satisfaction, as measured by a job satisfaction instrument (Smith, Kendall and Hulin's 1969 Job Descriptive Index). An attempt will thus be made to validate a burnout measurement instrument.

Considerable research now indicates that social support reduces, or buffers, the adverse psychological impacts of exposure to stressful life events and ongoing life strains with others (Cohen & Wills, 1985; Kessler & McLeod, 1985; Turner, 1983). Relationships with others can significantly lower the risk of psychological disturbance in response to stress exposure (Thoits, 1986). Thus, another question that arises is whether the "buddy" relationship amongst fire fighters remains unaffected by varying levels of burnout. Also, whether this relationship does in fact buffer the effects of burnout and arrest the development of job dissatisfaction.

The final question that arises is whether demographic variables predict either burnout or job satisfaction.

1.3 AIMS OF THE RESEARCH

From the above problem statement, the following aims are formulated:

The general aim of this research is to determine the relationship between burnout and job satisfaction.

In terms of the literature review, the scientific aims are to provide support for the empirical aims, and in particular:

- * to describe the burnout construct and its relationship to fire fighters;
- * to describe the job satisfaction construct and its relationship to fire fighters;
- * to provide a theoretical integration between the two constructs under investigation, and to link them to the concept of social support; and
- * to describe any demographic correlates that are related to the above in the literature.

In terms of the empirical investigation, the specific aims are:

- * to determine whether an increase in burnout will lead to a decrease in job satisfaction;
- * to determine whether the sample under investigation is experiencing significant levels of burnout;
- * to determine whether a burnout instrument is a valid predictor of job satisfaction;
- * to determine whether differing levels of burnout will affect satisfaction with co-workers;
- * to determine whether demographic variables will predict some aspects of burnout and job satisfaction; and
- * to formulate recommendations to industry.

1.4 RESEARCH MODEL

The research model of Mouton and Marais (1988) is utilised, in which research projects are conducted within the broader contexts of particular paradigms and disciplines. In terms of this model, social sciences research is "a collaborative human activity in which social reality is studied objectively with the aim of gaining a valid understanding of it (Mouton & Marais, 1988 : 7).

The research aims to incorporate the five dimensions of social science, namely sociological, ontological, teleological, epistemological and methodological. These five aspects are conceptually linked and mutually determined, and are aspects of one and the same process, namely research.

According to Mouton and Marais (1988), their model is described as a system theoretical model. Figure 1.1 describes the three subsystems which interrelate with each other and with the research domain of the specific discipline. These subsystems are the intellectual climate, the market of intellectual resources and the research process itself.

The term intellectual climate is used to refer to the variety of meta theoretical values or beliefs which are held by those practising within a discipline at any given stage. These can usually be traced to non-scientific contexts, and are not directly related to the theoretical goals of the practice of scientific research.. The origin of many of these values may be traced back to traditions in philosophy and are frequently neither testable, nor were they meant to be tested. For this research project, these assumptions are formulated with respect to burnout, job satisfaction, social support theory and fire fighting as an occupation.

The market of intellectual resources refers to "the collection of beliefs which has a direct bearing upon the epistemic status of scientific statements" (Mouton & Marais, 1988: 20). Two major types are : theoretical beliefs about the nature and structure of domain phenomena on the one hand, and methodological beliefs concerning the nature and structure of the research process.

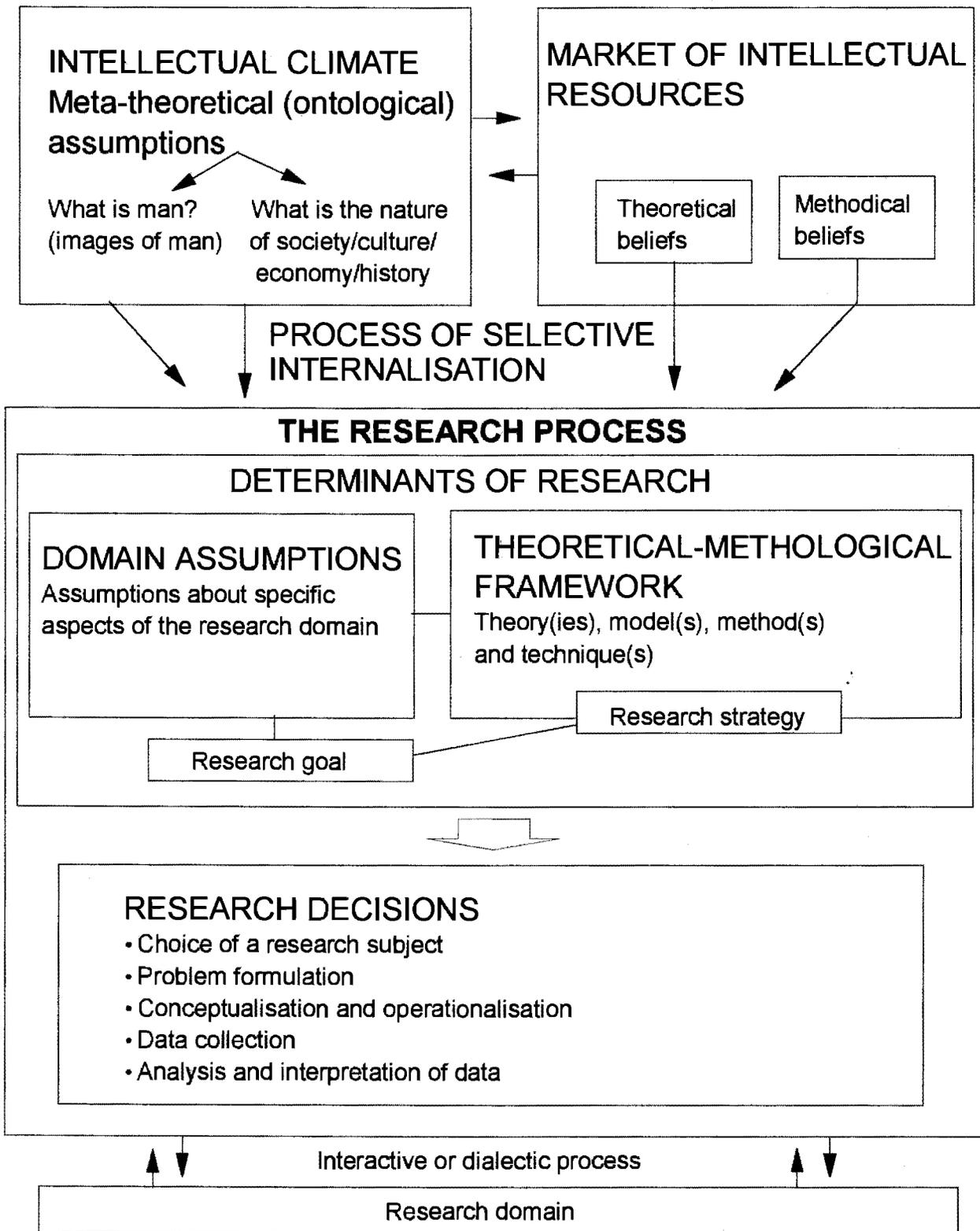


Figure 1.1 An integrated model of social sciences research (Mouton & Marais, 1988:23).

For the purpose of this research, hypotheses are presented, as well as theoretical models and theories and a conceptual description concerning burnout and job satisfaction.

In the research process itself, the researcher internalises specific inputs from the paradigm(s) to which he or she subscribes, in order to enable him or her to "interact with the research domain in a fruitful manner, and to produce scientifically valid research" (Mouton & Marais, 1988: 21). A distinction is made between the determinants of research decisions on the one hand, and the decision-making process on the other.

With respect to the determinants of the research decisions, a description of the research design is given, in terms of its descriptive nature. In terms of the decision making process, five typical stages are distinguished by Mouton and Marais (1988). These are:-

- * The choice of a research topic or problem
- * Formulating the research problem
- * Conceptualisation and operationalisation
- * Data collection
- * Analysis and interpretation of data

This research follows these defined stages. Furthermore, the research aims are formulated with regard to the two phases of the literature review and the empirical study. Regarding the theoretical methodological framework, phase one refers to burnout and job satisfaction, and phase two to the determination of the relationship that exists between these two constructs. With regards to the decision-making process, the research method is described in two phases, each with specific distinguishable and consecutive steps.

1.5 PARADIGM PERSPECTIVES OF THE RESEARCH

Mouton and Marais (1988) refer to paradigms as collections of meta-theoretical, theoretical and methodological beliefs which have been selected from the intellectual climate and the market of intellectual resources of a particular discipline. The concept "paradigmatic research" therefore refers to research which is conducted within the framework of a given research tradition or paradigm.

The philosophical problem arises of whether paradigms are mutually exclusive or whether inter-paradigmatic overlap exists. The fact that the same research model (quantitative or qualitative) appears to agree with the majority of paradigms in the social sciences, could possibly be taken as an indication that the boundaries between the different paradigms are diffuse (Mouton, 1983). For the purposes of this research, a multi-paradigmatic approach will be adopted.

The perspective from which the phenomenon of burnout has been described ranges from psycho-dynamic to societal (Paine, 1981). Concerning paradigms, Patrick (1979) discusses at length the physical, cognitive, emotional and behavioural symptoms characteristic of burnout. Physical symptoms range from headaches, chronic fatigue and lowered resistance to illnesses, to alcoholism and drug abuse (Berkeley Planning Associates, 1977; Patrick, 1979).

Cognitive symptoms typically range from cynicism to stereotyping to depersonalising clients (Freudenberger, 1977; Maslach, 1978; Patrick, 1979). Emotional symptoms may include emotional exhaustion and feelings of helplessness as well as dissatisfaction with the job (Maslach, 1976, 1978; Maslach & Jackson, 1981b). Lastly, the behavioural symptoms reported range from complaining and absenteeism to leaving the job or profession (Berkeley Planning Associates, 1977).

Thus, examining burnout from one paradigm (e.g. Behaviourist) does not sufficiently encompass the many and varied facets of this phenomenon, and it becomes necessary to operate within the boundaries of a number of paradigms, i.e. to adopt a "multi-paradigmatic" approach.

Job satisfaction will be presented primarily from the behaviouristic paradigm (Ivey & Simek-Downing, 1980). This paradigm is concerned with the observable, immediate and durable action in the life of the individual. It assumes that the human condition can be studied objectively and predicted, and that the success of predictions and interventions can be measured. It postulates that an individual's behaviour is directly related to events and stimuli in the environment, and that behaviour develops and maintains itself through a system of rewards or reinforcers and punishments. Also, behaviour change must be relevant to the individual.

The empirical study will be presented from the functionalistic paradigm (Morgan, 1980). This paradigm is primarily regulative and pragmatic in its basic orientation. It is concerned with understanding society in a way which generates useful empirical knowledge. Society is depicted as having a concrete, real existence, and a systemic character oriented to produce an ordered and regulated state of affairs. It also encourages an approach to social theory that focuses upon understanding the role of the individual in society, and behaviour is always seen as being contextually bound in a real world of concrete and tangible social relationships.

Thematically, the empirical study will be concerned with the relationship between the two constructs of burnout and job satisfaction.

In a disciplinary context, this research focuses on psychology, employing both clinical and industrial psychology as fields of application. In terms of the empirical study, the focus is on psychometrics and statistical analysis.

1.6 RESEARCH DESIGN

Selltiz, Jahoda, Deutsch and Cook (1965: 50) define research design as "the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure". According to Mouton and Marais (1988: 33), "the aim of a research design is to plan and structure a given research project in such a manner that the eventual validity of the research findings is maximised".

Research design is, therefore, synonymous with rational decision making during the research process. Irrespective of how structured or unstructured a research project is likely to be, it is the duty of the researcher to ascertain which general nuisance variables may render the results invalid, and to take every possible step to ensure that these factors are either minimised or eliminated.

In this research design, the internal validity on a contextual level is ensured through:

- * the use of models and theories selected in a representative manner
- * the use of measuring instruments selected in a representative manner

The aim of the research design is to determine if the specific chosen variable, known as the independent variable, will influence another variable, known as the dependent variable. In this research, the independent variable is burnout, and the dependent variable is job satisfaction.

The focus of this research will be on the individual. As such, the language used to depict gender will be as non-discriminatory as possible, and will refer to the individual as "he" or "she".

The presentation of this research can be categorised as descriptive. The integration of the literature review in the conclusion and recommendations will be contextualised regarding the presented problem statements.

1.7 RESEARCH METHOD

In order to remain scientific and objective, the research method will follow certain distinct and separate phases.

PHASE 1 LITERATURE REVIEW

Step 1 Burnout

A definition of burnout will be provided, together with its symptoms and a model. In particular, burnout amongst fire fighters will be examined.

Step 2 Job satisfaction

Job satisfaction will then be investigated, including a definition, historical background and theoretical considerations. An empirical link will be outlined between job satisfaction and burnout, and correlations between the two constructs will be explored.

Step 3 Social support

The concept of social support will then be examined, as considerable research now indicates that social support reduces, or buffers, the adverse psychological impacts of stress or burnout. Social support from co-workers has been indicated as particularly important for fire fighters.

Step 4 Demographic correlates

Demographic variables pertaining to burnout and job satisfaction will be reviewed.

PHASE 2 EMPIRICAL STUDY

Step 1 Determination and description of the sample population

Step 2 Choosing the measuring instruments

Step 3 Administration of the measuring instruments

Step 4 Scoring of the measuring instruments

Step 5 Statistical processing of data

Step 6 Formulation of hypotheses

Step 7 Reporting and interpretation of results

Step 8 Integration and conclusion of research

Step 9 Limitations of the research

Step 10 Recommendations

1.8 CHAPTER DIVISION

This research comprises four chapters. The first chapter is the scientific review of the research, and includes an overview of the research, as well as its background. It covers the problem statements and aims of the research, including the hypotheses. The research model and paradigm perspectives are examined, and the research design and method outlined.

The second chapter involves a literature review for the purpose of providing evidence to support the aims of the research. Burnout, job satisfaction as well as social support are investigated, and evidence is found to support the aims.

The third chapter is the empirical study, and includes a description of the sample under investigation, the measuring instruments selected, as well as the method of administration and scoring of the instruments. Statistical processing of accumulated data is described, and finally, the hypotheses are postulated.

The fourth chapter is concerned with reporting and integration of the results of the research. Statistics such as correlational analysis, cluster analysis, stepwise multiple regression analysis, as well as descriptive statistics are reported on. The research is integrated and concluded, and limitations are outlined. Finally, recommendations arising out of the results are formulated.

In summary, the chapter division is such:-

Chapter 1	Scientific review of the research
Chapter 2	Literature review
Chapter 3	Empirical study
Chapter 4	Results

1.9 CHAPTER SUMMARY

This introductory chapter has provided a broad overview of the research, as well as its background. Problem statements and aims have been outlined. The research model and paradigm perspectives have been described, and the research design and method have been clarified.

Phase 1 of this research follows, which will be a detailed literature review, aimed at providing support for the empirical aims outlined in Chapter 1.

This chapter encompasses a literature review which seeks to support the empirical aims of this research. In particular, this chapter aims:-

- * to describe the burnout construct and its relationship to fire fighters.
- * to describe the job satisfaction construct and its relationship to fire fighters.
- * to provide a theoretical integration between the two constructs under investigation, and to link them to the concept of social support; and
- * to describe any demographic correlates that are related to the above in the literature.

2.1 BURNOUT

Burnout is the first construct that is reviewed, and a description is provided. Theoretical considerations are outlined, as well as its specific relationship to fire fighters.

2.1.1 Description of burnout

Whilst a survey of the literature reveals a plethora of definitions of burnout, there is a common thread which may reveal a working definition of burnout that is shared by most people (Maslach, 1982).

First of all, there is general agreement that burnout occurs at an individual level. Second, there is agreement that burnout is an internal psychological experience involving feelings, attitudes, motives and expectations. Thirdly, there is agreement that burnout is a negative experience for the individual, in that it concerns problems, distress, discomfort, dysfunction and / or negative consequences (Maslach, 1982).

Beyond these basic points, the consensus begins to break down. Nevertheless, there are some key dimensions of burnout for which there is agreement. Perlman and Hartman (1982) define burnout as a response to chronic emotional stress with three components : (a) emotional and / or physical exhaustion; (b) mental exhaustion / lowered job productivity; and (c) depersonalisation. They believe that burnout would benefit from a focus on its underlying primary dimensions, treating burnout as a multi-dimensional construct, not a single explanatory term.

Looking more closely at these components, exhaustion is also described as a wearing down, loss of energy, depletion, debilitation and fatigue. Although sometimes this exhaustion is a physical one, more often a psychological or emotional exhaustion is described as central to burnout: a loss of feeling and concern, a loss of trust, a loss of interest, a loss of spirit.

A second dimension is a negative response towards oneself and one's personal accomplishments, also described as mental exhaustion. Symptoms include lowered job productivity, depression, low morale, withdrawal and an inability to cope.

A third dimension found is a negative response towards others: depersonalisation, negative or inappropriate attitudes toward clients, loss of idealism, and irritability. Most discussion of this dimension emphasises its movement (in a negative direction) over time.

Thus, burnout is used as an umbrella term, referring to three related but loosely coupled reactions to a job (Jackson, Schwab & Schuler, 1986).

The perspectives from which the phenomenon of burnout has been described, range from psychodynamic to societal (Paine, 1981). Hypothesised causes have included characteristics of clients, employee characteristics, supervisory practices, organisational structures (both social and physical), professionalisation programmes, political processes, and cultural norms. Hypothesised consequences have been equally diverse, including lowered job performance and consequent poor care for clients, disruption of family life and personal relationships, poor health,

absenteeism and turnover (Cherniss, 1980; Gaines & Jermier, 1983; Jackson, 1984; Maslach & Jackson, 1982; Paine, 1981; Perlman & Hartman, 1982; Pines, Aronson & Kafry, 1981; Schwab, 1983).

Although individual characteristics and coping strategies play an important role in the amount of burnout an individual might experience, a number of employment practices occurring within organisations tend to promote the development of the syndrome. Among these practices are limited input by employees into the decision-making process, disproportionate workloads among employees with similar job descriptions, the inability of individuals to reach career goals (such as promotion and recognition), poor communication between administrators and employees, inadequate staff development for maintaining skills and personal development, dysfunctional support systems, de-emphasis on relaxation programmes, and inadequate matching of personal characteristics to job demands (Beehr & Newman, 1978; Cherniss, 1980; Davis-Sacks, 1986; Dorin, 1986; Erera, 1984; Frew & Bruning, 1987; Matthews, 1990; Ray, 1983; Savicki & Cooley, 1987).

Patrick (1979) discusses at length the physical, cognitive, emotional and behavioural symptoms characteristic of burnout. Physical symptoms range from headaches, chronic fatigue and lowered resistance, to illnesses, alcoholism and drug abuse (Berkeley Planning Associates, 1977; Patrick, 1979).

Cognitive symptoms typically range from cynicism, negativism and a tendency to be inflexible, to stereotyping and depersonalising clients (Freudenberger, 1977; Maslach, 1978; Patrick, 1979). Emotional symptoms may include emotional exhaustion and feelings of helplessness (Maslach, 1976, 1978; Maslach and Jackson, 1981b). Lastly, the behavioural symptoms reported range from complaining and absenteeism to leaving the job or profession (Berkeley Planning Associates, 1977).

When examining the three components comprising the definition of burnout (emotional and/or physical exhaustion; mental exhaustion / lowered job productivity; and depersonalisation), the symptoms are as follows:-

Emotional exhaustion involves feelings of depression, helplessness, hopelessness and entrapment, leading in extreme cases to mental illness or thoughts about suicide (Beck, Weissman, Lester & Trenxler, 1974). It may cause incessant, uncontrollable crying or the loss of coping and control mechanisms. There is a feeling of emotional depletion, as well as irritability and anxiety. Futility and despair increase. Satisfaction from work and other activities diminishes. Feelings of happiness and hope are replaced by loneliness, discouragement and disenchantment.

Physical exhaustion is characterised by low energy, chronic fatigue, weakness and weariness. People who have burned out report such things as accident-proneness, increased susceptibility to illness, frequent headaches, nausea, muscle tension in shoulders and neck, back pains, and changes in eating habits and weight. Also mentioned in the literature are psychosomatic complaints, increased frequency of illness (Freudenberger, 1977), nagging colds, and frequent attacks of virus or flu (Armstrong, 1978). A paradoxical combination of weariness and insomnia is often reported (Pines, Aronson and Kafry, 1981).

Mental exhaustion or lowered job productivity is characterised by the development of negative attitudes towards one's self, toward work, and toward life. People who develop burnout often report dissatisfaction with their work and way of life, and a lowered self-concept. They feel inadequate, inferior and incompetent.

They may also develop a negative, dehumanising attitude toward the recipients of their services. Social psychologists have developed a sizeable literature on the concept of depersonalisation (Pines and Solomon, 1977) which is defined as a decreased awareness of the human attributes of others and a loss of humanity in interpersonal interactions.

Dissatisfaction with work often leads people to arrive late, leave early, extend work-breaks, or avoid work entirely. There is also the possibility of postponing client contacts, resisting client phone calls and office visits, stereotyping clients, and an inability to concentrate on what the client is saying, feeling intolerant of clients' anger, feeling immobilised and helpless, cynicism regarding clients and a blaming attitude. Gentry, Foster and Fruehling (1972) also found evidence of depression, hostility and anxiety, as well as high incidents of turnover and absenteeism due to minor illness and vague somatic complaints.

Pines and Kafry (1978) showed that burnout was negatively correlated with indices of job satisfaction and positively correlated with a desire to leave the job. In a literature review, Savicki and Cooley (1982) further confirm that burnout has been related to chronic fatigue, lowered resistance to illness, complaining, absenteeism and quitting the job or profession in a variety of professions and settings.

2.1.2 Theoretical considerations

Most theories within the sphere of burnout are tied to a predominantly psychological level of analysis (Handy, 1988). A few psychoanalytically - oriented theorists have proposed intra-psychic theories which repudiate the role of environmental stressors (Fischer, 1983). However, the majority of researchers have advanced transactional models (Cherniss, 1980; Cooper, 1986; Golembiewski, Munzenrider & Stevenson, 1986; Perlman & Hartman, 1982)).

While the various theories differ in complexity and in the explicitness with which individual and environmental variables are differentiated, they all centre on the stressed individual and then either work backward to analyse the causes of stress, or forward to investigate the individual's response to stress.

Two basic themes emerge from the various definitions and models currently in use. First, burnout is generally conceptualised as the product of a complex transaction between individual needs and resources, and the various demands, constraints and facilitators within the individual's immediate environment. Secondly, it is

conceptualised as highly subjective phenomena in which perceived stressors are more important than actual environmental conditions (Handy, 1988).

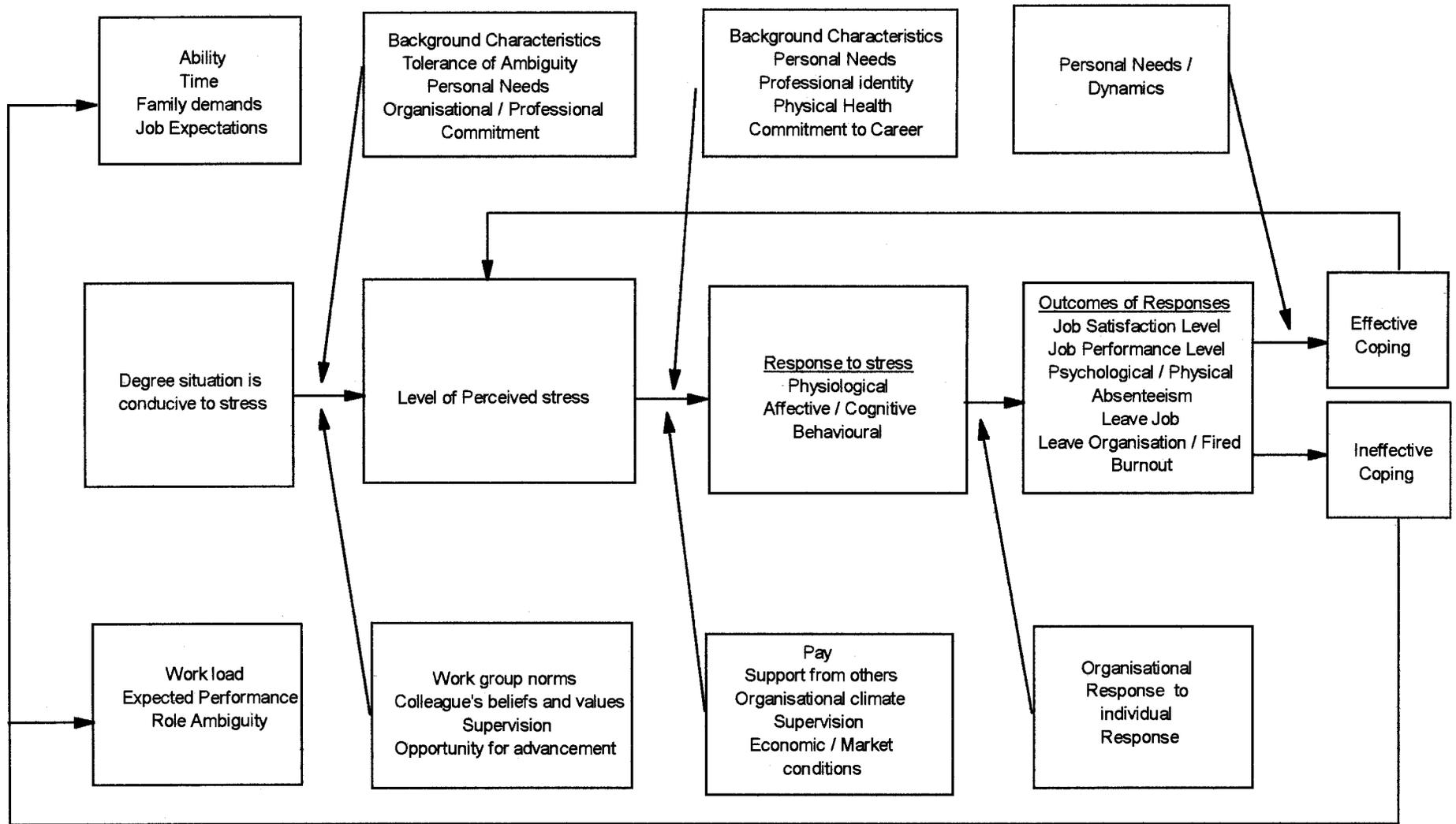
Perlman and Hartman (1982), after conducting a review of the burnout literature, proposed a broad model, including almost all variables which have been studied in burnout research. Figure 2.1 presents this model, which identifies personal and organisational variables which may be related to burnout.

The three dimensions of burnout reflect the three major symptom categories of stress: (a) physiological, focusing on physical symptoms (physical exhaustion); (b) affective-cognitive, focusing on attitudes and feelings (emotional exhaustion, depersonalisation); and (c) behavioural, focusing on symptomatic behaviours (depersonalisation, lowered job productivity / mental exhaustion). This model is based upon a paradigm presented by House and Wells (1978) and is similar to models proposed by Beehr and Newman (1978) and Matteson and Ivancevich (1979). The model has a cognitive / perceptual focus with interpretation of an individual's environment and personal variables at its core.

As Perlman and Hartman's (1982) model indicates, individual characteristics, and work and social environments are important for the perception and impact of burnout with effective or ineffective coping influencing this. The model contains four stages. The first is the degree to which a situation is conducive to stress. Two major types of situations exist in which stress is likely to occur. Firstly, an individual's skills and abilities may not be sufficient to meet perceived or real organisational demands and secondly, an individual's work may not meet his/her expectations, needs or values. Burnout is likely when there exists an inadequate fit between the person and the work environment.

The second stage in the model involves perceived stress. Moving from stage one to stage two is dependent on a person's background and personality, as well as role and organisational variables. Little research exists which reviews the transition from stage one to stage two. Thus, the relationships in the model concerning

PERSONAL VARIABLES



ORGANISATIONAL VARIABLES

Figure 2.1 A perceptual-feedback stress paradigm

effects of individual and organisational variables on perceived stress represent hypotheses.

Stage three depicts the three major categories of response to stress or burnout, while stage four represents outcomes. Burnout, as a multifaceted experience of chronic emotional stress, is placed in stage four.

The significant variables related to burnout can be organised within the model. The organisational and individual characteristics would be represented at the top and bottom sections of the model and would have an impact on: (a) perceptions of the organisation and role by an individual, (b) response of the individual to these perceptions, and (c) response of the organisation to symptoms displayed by the individual (in stage three) which would then lead to (d) outcome variables listed in stage four.

It is at this point that the multidimensional nature of burnout becomes apparent. As the organisation responds to these symptoms, a variety of multidimensional outcomes are possible, each commonly labelled in the research and management domains with a single descriptor, e.g., job satisfaction, turnover, absenteeism, burnout.

2.1.3 Burnout and fire fighters

People in frequent, life-threatening challenges, e.g. fire fighters, experience prolonged stress which may have negative effects on both job performance and personal adjustment (Glass, Singer and Pennebaker, 1973). Stress resulting from an imbalance between personal resources and situational needs, may affect the person's behaviour, psychological and physiological well being (McGrath, 1970).

Fire fighters, like other emergency services personnel, make life-and-death decisions, experience limited career opportunities and cope with rotating shift work. Approximately 44% of fire fighter fatalities in the United States in 1982 were attributable to stress (Anson & Bloom, 1988). Fiedler, Frost and Swartout

(1981) found that the quality of interaction between supervisors and lower-ranking fire fighters was an important stressor reported by their sample.

While those attracted to emergency work, such as fire fighters, may be more emotionally stable than the general population, and more likely than the ordinary citizen to withstand intense pressure (Dunning, 1985; Swanepoel & Van Outshoorn, 1988)), they are nevertheless affected by their work. Emergency workers are vulnerable to an increased incidence of diseases of adaptation (Dunning, 1985). For most workers, disaster work is at least temporarily stressful, and has significant psychological impact. In fact, for some it may lead to long-term psychological difficulties. The helpers themselves "may become the other, unrecognised victims at the time of the disaster" (Raphael, Singh & Bradbury, 1986 : 324).

According to Mitchell (1988), a study using the Milan Personality Inventory shows that the police officer / fire fighter / paramedic personality is significantly different from the average population. Emergency personnel are far more obsessive / compulsive than the average worker. They are detail-oriented to the extent of perfectionism. When they fail to do a perfect job, they become depressed and anxious. The reason that they want to do a perfect job is because many of the decisions they make, and many of the actions they take, can affect others' lives. As Mitchell (1988) describes, emergency services personnel are risk-takers, and are more action-oriented than average, and need direction to function well.

Thus, after describing the burnout construct and its relationship to fire fighters, it can be seen that this stress-related disorder poses a potential risk for fire fighters. The symptoms of burnout may range from being fairly minor, to severely debilitating, and the management of this condition should be a high priority for fire department administrators, in order to optimise their employees' performance on the job.

2.2 JOB SATISFACTION

Job satisfaction is the next construct under review, and once again a description is provided. Theoretical considerations are outlined, and job satisfaction with particular reference to fire fighters is considered. An integration of the two constructs under investigation follows.

2.2.1 Description of job satisfaction

Job satisfaction of employees is a topic that has received considerable attention by researchers and practitioners alike. Job satisfaction can be defined simply as "positive attitudes toward the job" (Vroom, 1964 : 99) or as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences" (Locke, 1976 : 130). Overall, job satisfaction is a very general evaluation of one's job; intrinsic job satisfaction is an appraisal of the nature of the work involved in the job, including such matters as challenge, variety and autonomy; extrinsic job satisfaction is an appraisal of such matters as pay, hours and physical conditions like lighting (Lindquist & Whitehead, 1986).

Research on job satisfaction has shown clearly that "more varied, complex and challenging tasks are higher in worker gratification than less skilled routine jobs" and that "the more skilled the vocation, the more its members enjoy their jobs" (Katz & Kahn, 1978 : 364).

Most writers distinguish between job satisfaction and job morale. Morale refers to a group's well-being, whereas job satisfaction refers to the individual's emotional reactions to a particular job (Gruneberg, 1979). Thus Locke (1976) defines job satisfaction as being a pleasurable or positive emotional state, resulting from the appraisal of one's job or job experiences. There is no one agreed definition, however, and Wanous and Lawler (1972) list nine different operational definitions, each based on a different theoretical orientation and each resulting in different measures.

The major difference between definitions is in terms of the different ways in which aspects of job satisfaction are combined. When the relationship between job satisfaction for different aspects of the job and overall job satisfaction is analysed, considerable differences in the extent of the correlation are found (Gruneberg, 1979). Wanous and Lawler (1972) also found three of the nine measures of satisfaction correlated significantly with absenteeism, whilst others did not. As the investigators conclude, 'had not a number of operational measures been used here, conclusions about the job satisfaction-absenteeism relationship would have been determined by the choice of which job satisfaction measures to use' (Wanous & Lawler, 1972 : 103).

The effect of worker morale on productivity has been apparent since the Hawthorne studies which spawned decades of research on job design, management style, and productivity (Koeske, Kirk, Koeske & Rauktis, 1994). Recently, increasing attention is being given to the assessment of job satisfaction as one factor in a complex person-work environment relationship.

Typically, large-scale surveys of worker morale, job stress and burnout have included some measures of job satisfaction. Some have found job satisfaction strongly related to structural factors, such as autonomy and bureaucratisation (Arches, 1991). Many report that job satisfaction is associated with job-related strain, intention to quit (Kraut, 1975; Michaels & Spector, 1982), and job turnover (Barber, 1986; Dougherty, Bluedorn & Keon, 1985; Jayaratne & Chess, 1984; Mobley, Griffeth, Hand & Meglino, 1979; Muchinsky & Tuttle, 1979; Porter & Steers, 1973; Spector, 1985). Iaffaldano and Muchinsky (1985) also suggested that low job satisfaction is associated with lower productivity and poorer job performance, though the empirical support is equivocal.

Whilst no specific study examining job satisfaction in fire fighters in South African could be found, Hofmeyr (1997), in conjunction with International Survey Research, conducted a general survey of 22 000 South African employees from a cross-section of industries and regions. It was found that employee perceptions and attitudes in South Africa have become more negative between 1994 and 1996

in all categories surveyed. The most negative category surveyed was 'pay', whilst 'working relationships' was the most positive.

In the past few years, South Africans have had to adjust to a new government, and changed political and social priorities, as well as economic pressures brought about by national and international demands. These changes have impacted on employee perceptions and morale. On the one hand, the expectations of many employees might have been raised by the events of 1994. Some of these will not have been met. Others have been affected by affirmative action programmes which are likely to have an influence on their career prospects. Environmental factors, in particular crime and violence, are having a negative impact on employees' overall mood. Many are likely to feel less secure and under more pressure than they did a few years ago (Hofmeyr, 1997).

If employee attitudes have deteriorated, as the survey suggests, this has important implications for companies. It is accepted that employee satisfaction is vital, as motivated and committed employees can be a major contributor to organisational success. Employee satisfaction has become a key performance indicator for a large proportion of the world's most successful companies, and a key corporate priority for organisations trying to achieve or sustain leadership positions in their industries and markets (Hofmeyr, 1997).

Job satisfaction has also been found to correlate to perceived job characteristics (Hackman & Lawler, 1971; Hackman & Oldham, 1975); leadership style, specifically consideration (Downey, Sheridan & Slocum, 1975), and absenteeism (Porter & Steers, 1973), although there is some controversy about absenteeism (Nicholson, Brown, & Chadwick-Jones, 1976). Meadow (1981) found that the ability to influence one's job was correlated with both job satisfaction and burnout.

Job satisfaction has been associated with size of the organisation; individual demographics such as age, gender, marital status and education (Glenn & Weaver, 1982; Jayaratne, Chess & Kunkel, 1986; Jayaratne, Tripodi & Chess, 1983); role

theory (Harrison, 1980; Jayaratne & Chess, 1984); and social support (Jayaratne, Chess & Kunkel, 1986; Jayaratne, Tripodi & Chess, 1983)

2.2.2 Theoretical considerations

Theories of job satisfaction have been divided by Campbell, Dunnette, Lawler and Weik (1970) into two categories; content theories and process theories. Content theories give an account of what needs, values or expectations are important to individuals in determining their degree of job satisfaction. Maslow's (1943) needs hierarchy theory, and its development by Herzberg (1966) into the two-factor theory of job satisfaction, fall under the domain of content theory.

Process theories try to give an account of the process by which variables such as expectations, needs and values interact with the characteristics of the job to produce job satisfaction. Three distinct sub-classes of theory emerge here; (a) Expectations and equity theory, which argues that job satisfaction occurs when one compares what one puts into a job and the rewards one receives, with those of others, and finds that one is equitably treated; (b) Reference group theory, which takes into account the way in which one refers to other individuals in deciding what is equitable; and (c) Need and value fulfilment theories, which account for job satisfaction in terms of the discrepancy between the individual's needs and values, and what the job has to offer.

An analysis of the content theories of Maslow (1943) and Herzberg (1966) reveals many methodological and conceptual problems. As far as Maslow's (1943) needs hierarchy theory is concerned, it is postulated that we have needs in ascending order. No real evidence exists to support the theory, intuitively appealing as it might be (Gruneberg, 1979) Herzberg's (1966) theory, which postulates that the causes of satisfaction and dissatisfaction are separate and distinct, can be related to Maslow's (1943) theory. Thus those factors which cause dissatisfaction when not satisfied are the lower level needs of Maslow's hierarchy, those factors which cause satisfaction when satisfied involve the higher order needs, Again, the evidence

does not support the theory. The critical incident technique is suspect and studies using other techniques strongly support the view that motivators are important both in satisfaction and dissatisfaction (Gruneberg, 1979).

Whatever the merits, or otherwise, of Herzberg's (1966) theory, it is undoubtedly of great historical importance in shifting the emphasis away from the human relations school's concern with human contacts at work, to the importance of the job itself as crucial to an understanding of job satisfaction. Moreover, Herzberg (1966) has been a prime instigator of the movement to redesign jobs in order to allow individuals to have possibilities of psychological growth.

One of the major criticisms of Herzberg is that he plays down the importance of individual differences in coming to an understanding of job satisfaction and it is here that the process theories have an important contribution to make. They claim that it is the interaction between the individual's expectations, needs and values and what the job offers which gives rise to satisfaction and dissatisfaction. Merely looking at the job itself, therefore, in terms of psychological growth, is a mistake, without looking at the individual who is to fill the job and who will vary in terms of the values he / she wishes fulfilled in the job (Locke, 1976).

Equity theory argues that job satisfaction arises when the individual compares what he /she puts into the job and what he / she gets out of a job, with other people's inputs and outputs. Where the reward is equitable compared to other people, satisfaction occurs; where it is seen as inequitable, dissatisfaction occurs.

How the individual comes to compare himself or herself with others is the concern of the reference group theorists. They point to the importance of peer groups in determining what the individual regards as reasonable to expect from the job in terms of rewards, and what is reasonable to give in terms of effort. Yet as Korman (1977) points out, reference group theory is as yet unable to specify why some individuals choose one reference group, whereas other, apparently similar individuals, choose another. Personality factors must, therefore, be an important aspect of understanding the kind of rewards and efforts that an individual seeks

and expects from a job. Again, as Locke (1976) points out, expectations that individuals have, do not necessarily determine job satisfaction. Expectations may, nevertheless, be of critical importance in job satisfaction by determining which values and needs the individual is going to seek to satisfy in the job situation.

Process theorists such as Vroom (1964), operating from a needs / value fulfilment reference point, have tried to account for job satisfaction in terms of matching individual needs to what the job provides. Two models are considered, the subtractive and the multiplicative, but both have their limitations. The subtractive model fails to take account of the importance of different needs, whilst the multiplicative model fails to distinguish how much a need is wanted and how much of the need is wanted (Gruneberg, 1979).

Finally, in considering any theory of job satisfaction, whether content or process oriented, the changing values and adaptations that individuals make over time must be taken into account. Job satisfaction research has largely given a picture of job satisfaction as something static, but as Davis and Cherns (1975) point out, job satisfaction involves a dynamic interaction between the individual and his / her environment. The work of Van Maanen and Katz (1976), despite its limitation, supports this view.

Whatever the differences and limitations of using one approach, it seems clear that job satisfaction involves the matching of the individual's needs, values and expectations to what the job offers. In such a complex field as job behaviour, it is likely that no single theory accounts for all the phenomena all the time. Sometimes expectations, sometimes values, will be the main focus of interest; sometimes examining the individual's personality, sometimes examining the cultural background, will be the most fruitful approach. At present, there is no generally acceptable overall theory of job satisfaction.

2.2.3 Job satisfaction and fire fighters

Fire fighters are involved in life and death decision-making situations, and under-performance and lack of job satisfaction due to burnout could adversely affect the welfare of the people that are being provided with the service.

Fire fighters have been selected in studies of job satisfaction, because fire fighting is a hazardous occupation, with exposure to thermal and chemical hazards, injury, violence, and a variety of psychological stressors (Guidotti & Clough, 1992), and hence correlations with job satisfaction can be investigated.

Despite the negative correlation that researchers have found between burnout and job satisfaction, Noran (1995) suggests that fire fighters enjoy their work, and experience danger in positive and self-affirming ways, due to sociological and anthropological reasons. Corneil (1991) considers the fire service a distinct sub-culture, with its own values, beliefs, norms, rituals and language, resistant to outsiders. Kaprow (1991) suggests that this closed society may give fire fighters a sense of control over their environment, as well as their work, resulting in job satisfaction.

Despite the increasing amounts of commentary and research regarding job satisfaction, the literature pertaining specifically to fire fighters is sparse. This represents a serious theoretical problem, and this research should contribute to the literature available concerning job satisfaction and fire fighters.

2.3 BURNOUT AND JOB SATISFACTION - A THEORETICAL INTEGRATION

Several research studies have examined burnout in organisations, as well as potential causes and consequences (Eisenstat & Felner, 1984; Handy, 1988; Kahill, 1988; Perlman & Hartman, 1982). These investigations have identified some of the origins and outcomes of burnout, but few have used research designs which address the question of causality (Wolpin, Burke & Greenglass, 1991). In other words, is job satisfaction an antecedent or a consequence of burnout?

The strength of the relationship between burnout and job satisfaction described elsewhere (Brookings, Bolton, Brown & McEvoy, 1985; Duxbury, Armstrong, Drew & Henly, 1984; Jayaratne & Chess, 1983; Justice, Gold & Klein, 1981; Lindquist & Whitehead, 1986; Rimmerman, 1989) indicate that they are overlapping (Harrison, 1980; Karger, 1981; McNeely, 1983) yet not identical dimensions (Drory & Shamir, 1988; Landsbergis, 1988; Maslach & Jackson, 1981b; Riggall, Godley & Hafer, 1984). This should be expected since both are affective work responses. Despite this relatively firm association, the nature of the link between job satisfaction and burnout is still unclear (Wolpin, Burke & Greenglass, 1991).

Some researchers have considered burnout to be a cause of job satisfaction (Burke, 1987; Burke & Greenglass, 1988; Burke, Shearer & Deszca, 1984; Cunningham, 1983; Iwanicki, 1983; Jayaratne, Chess & Kunkel, 1986); others have considered job satisfaction to be a cause of burnout (Dolan, 1987; Leiter, 1988; Penn, Romano, & Foat, 1988, Pines, Aronson, & Kafry, 1981; Rafferty, Lemkau, Purdy, & Rudisill, 1986; Rottier, Kelly & Tomhave, 1984; Stout & Williams, 1983). In addition, although most studies have found significant relationships between the two, some (Belcastro & Hays, 1984; Pines & Kafry, 1981; Quattrochi-Tubin, Jones & Breedlove, 1982; Whitehead, 1986) have reported no relationship.

Harrison (1980) used a job satisfaction measure to measure burnout, thus equating the two constructs. Burnout, however, is not just the reverse of job satisfaction (i.e. burnout does not equal mere job dissatisfaction, as indicated by correlations that tend to be in the range of -0,40 to -0,50).

Almost all of the research studies reviewed were cross-sectional and correlational. The majority used the Maslach Burnout Inventory (Maslach & Jackson, 1981a) to measure burnout, but job satisfaction was measured by a wide variety of scales. Wolpin, Burke and Greenglass (1991) concluded that it is still difficult to draw firm conclusions about the causal relationship between burnout and job satisfaction.

Wolpin, Burke and Greenglass (1991) attempted to unravel the relationship and to determine whether job satisfaction was an antecedent or a consequence of burnout. Their research, building heavily on a model of burnout proposed by Cherniss (1980) considers job satisfaction to be a consequence of burnout and examined this relationship in a longitudinal study design. Since the experience of burnout in organisations is such a complex phenomenon, increasing use has been made recently of both more comprehensive models and longitudinal research design (Jackson, Schwab & Schuler, 1986; Shirom, 1989).

Wolpin, Burke and Greenglass (1991) use multivariate analysis, including correlations, cross-lagged correlations, structural regressions and path analysis to investigate the relationship. Their results conclude that dissatisfaction with one's job increases in proportion to the increase in sources of stress and psychological burnout experienced. As a result of employing a longitudinal design, burnout appears to cause lower job satisfaction, and not vice-versa. Although much research does not permit causal inferences, it portrays an existing situation that warrants further research.

Although job satisfaction has been extensively studied for several decades (Locke, 1976), there is a scarcity of studies completed exclusively with helping professions (Jayaratne & Chess, 1984). Research has considered job satisfaction in this area,

but most investigators however, have either assumed that if workers were burned out they were also dissatisfied, or they included items designed to identify feelings of dissatisfaction in the instruments they constructed to measure burnout (Jones, 1981).

Symptoms cited frequently as indicative of burnout include negative job attitudes (Pines & Maslach, 1978), low morale, high turnover and absenteeism (Maslach, 1976). Numerous studies, though not all, have found strong relationships between each of these factors and the self-reported job satisfaction levels of workers (O'Toole, 1973). Logically, the individual who is cynical and / or experiencing chronic physical and emotional exhaustion is unlikely to report deriving high job satisfaction from frustrating working conditions, which the burnout literature identifies as a major source of their distress (Pines & Maslach, 1978).

Given the parallel nature of pathologies reported in the literature that is simultaneously symptomatic of burnout and low job satisfaction, some writers have concluded that burnout "as evidenced by its causes and symptoms, is akin to the anomic conditions found among industrial workers" (Karger, 1981: 281). Thus, burnout is not a new phenomenon at all; it is simply a term that expresses the relatively recent awareness in the helping professions that professional practitioners, like other workers, may be debilitated by the conditions of their employment (McNeely, 1983).

Despite the limited research to date on the relationship between burnout and job satisfaction, there is evidence to suggest that the nature of the job is a significant factor (Pines, Etzion & Kafry, 1982). Different work environments can significantly affect the staff burnout rates within organisations. Maslach and Pines (1979), Pines and Kafry (1978), and Pines and Kanner (1982) show that burnout is negatively correlated with indices of job satisfaction, and positively correlated with a desire to leave the job. Hopelessness and loss of idealism with the job have also been found to be significantly correlated with burnout (Pines, Aronson & Kafry, 1981).

According to Dolan (1987), job satisfaction must be distinguished from job involvement. A person who is involved in his / her job is one who takes it seriously, for whom important values are at stake in the job, whose moods and feelings are significantly affected by job experiences and who is mentally preoccupied with his / her job. Thus, a person who is highly involved in his / her job should be more likely to feel extremely satisfied or extremely dissatisfied with it, while an uninvolved person would have less extreme reactions to the same or analogous job experiences.

A review of the literature reveals that there is a positive relationship between job satisfaction and job involvement (Rabinowitz & Hall, 1977). They further state that there is a positive complex relationship between higher order needs of the individual and job satisfaction. Thus, job involvement is clearly related to job satisfaction.

According to Riggan, Godley and Hafer (1984), burnout and reduced levels of job satisfaction may not be obverse sides of the same coin; however, burnout and job satisfaction are significantly inversely related.

The effects of job satisfaction in relation to burnout have been examined and a review of the literature shows a clear correlation between the two constructs.

2.4 SOCIAL SUPPORT

Social support has been studied as a moderator of the impact of negative events (Vilhjalmsson, 1993). Several reviews have shown the benefits of social support for psychological and physical health in the face of general life stressors (Cobb, 1976; Dean & Lin, 1977; Kaplan, Cassel & Gore, 1977) and for occupational stress in particular (LaRocco, House & French, 1980).

Several researchers stress the importance of social support (Cherniss, 1980; Lenrow, 1978; Pines, Aronson & Kafry, 1981) and some have reported empirical data on its negative relationship with burnout (Pines, Aronson & Kafry, 1981;

Shinn & Morch, 1982). Roy and Steptoe's (1994) study amongst male fire fighters reveals the protective effect of social support.

Because of the importance of social support in the context of this research, it has been included in the literature review as a concept closely aligned with burnout and job satisfaction. In terms of the aims of the literature review, social support will be linked with the two constructs under investigation. In terms of the empirical aims of the investigation, it will be determined whether differing levels of burnout will affect satisfaction with co-workers, and as such, social support may provide a buffering effect for the sample population.

Thus, a description of social support is provided, as well as theoretical considerations. The concept of social support, with particular reference to fire fighters is also outlined.

2.4.1 Description of social support

The idea of social support has been described alternately as rich and subtle or as diffuse and vague (Vaux, 1988). Support seems to encompass a multitude of activities, relationships and subjective appraisals. Activities deemed supportive might include comforting a distressed friend, encouraging someone facing a difficult task, listening while someone describes a problem he or she faces, accepting self-disclosure in a spirit of trust, lending money or materials, giving advice, making suggestions, sharing a task, and providing information.

Support viewed in terms of relationships might include having friends, visiting neighbours, having a confidante, being married, spending time with friends, being involved in informal social organisations, or having a relatively large network of people on whom one can call for assistance.

Alternatively, support might be viewed in terms of subjective appraisals that focus on the quality of one's relationships (with a spouse, family, friends, work colleagues, or neighbours) or on the degree to which important social needs (for example, for affiliation and intimacy) are being met, or to the degree to which one

feels cared for and valued. In short, social support has been viewed from diverse perspectives involving multifarious relationships, activities and evaluations.

According to Cobb (1976), social support is information leading subjects to believe that they are cared for and loved, esteemed and valued, and that they belong to a network of communication and mutual obligation. From his research, it appears that social support can protect people in crisis from a wide variety of pathological states: from low birth weight to death, from arthritis to tuberculosis to depression, alcoholism and social breakdown.

The multifaceted nature of social support precludes a simple conceptual definition. Consequently, both the construct and its relationship to other constructs such as burnout and job description remain vague. Despite this diversity, most definitions have focused on the helping elements and processes of the social-relational systems in which the individual is located

A number of researchers have relied on lists of relationships, functions or activities in efforts to delineate social support (Caplan, 1974; Cobb, 1976; House, 1981). Such accounts, which provide a foundation for theoretical definitions, can be very helpful in developing measures, yet the difficulty of trying to capture such a complex idea in a single statement should not be underestimated. Thoits (1986) proposed that support is the degree to which a person's basic social needs are gratified through interaction with others. These needs were identified as including affection, esteem or approval, belonging, identity and security. Needs are met by the provision of socio-emotional aid (for example, affection, understanding and esteem) and instrumental aid (for example, advice, information, money and assistance).

Common to all of these taxonomies is an acknowledgement of the relevance of emotional or perceived support on the one hand, and of actual aid or its availability on the other.

House (1981) has distilled four broad classes of social support from the array of conceptualisations in the literature. These are (1) *emotional support* involving empathy, love and trust; (2) *instrumental support* involving behaviours that directly aid the person in need; (3) *informational support* composed of information useful in coping with personal and environmental problems; and (4) *appraisal support*, involving information relevant to self-evaluation or social comparisons, exclusive of any affect that might accompany such information. House acknowledged that emotional support is the common element across most conceptualisations, and that it is what most people mean when they speak of being supportive.

The view taken by Vaux (1988) is that no single and simple definition will prove adequate because social support is a metaconstruct; a higher-order theoretical construct comprised of several legitimate and distinguishable theoretical constructs. He distinguishes three social support constructs: support network resources, supportive behaviour and subjective appraisals of support. These three elements are linked in a dynamic process of transactions between the individual and his or her social environment. Theoretical definitions of these constructs are presented below:

a) Support Network Resources

The support network is that subset of the larger social network to which a person routinely turns or could turn for assistance in managing demands and achieving goals.

b) Supportive Behaviour

These are specific acts generally recognised as being intentional efforts to help a person, either spontaneously or upon request. These include both providing tangible goods and services and expressing affection and evaluation. Six modes of supportive behaviour reflect an emerging consensus: emotional, feedback, advice/guidance, practical, financial/material, and socialising.

c) Support Appraisals

Support appraisals are subjective, evaluative assessments of a person's supportive relationships and the supportive behaviour that occurs within them. As such, they are the primary indicator of how well support functions are being served. Thus appraisals may take many forms including satisfaction, feeling cared for, respected, or involved, and having a sense of attachment, belonging, or reliable alliance.

Thus, after reviewing several conceptual definitions of social support, it may be seen as a complex, transactional process involving an active interplay between a focal person and his or her support network. The individual must develop and sustain network resources, subject to the opportunities and constraints of his particular life context. Often, he must actively seek assistance from network members and manage support incidents so that proffered supportive behaviour meets his current needs. He must actively appraise his relationships with others, both in terms of ongoing interactions and those that occur within support incidents. These appraisals may lead in turn to efforts to renew network resources. Recognising social support as a complex dynamic process is the first step in understanding its role in buffering the effects of stressors and contributing to individual well-being.

Cherniss (1980) has spoken of the elusiveness of collegiality as being a potential cause of burnout. Farber's (1982) study of teachers indicated that a sense of community or collegiality is rarely felt. Whereas Maslach and Pines (1977) found staff meetings to be sources of emotional support in day-care settings, ~~the~~ highly

clinical and technical nature of mental health staff meetings was found to be a contributor to burnout (Pines & Maslach, 1978).

Participants in Farber and Heifetz's (1981) study indicated that collegial support was essential to alleviate stress, as was formal clinical supervision. Rimmerman (1989) found that family support and supervision (external support), as well as satisfaction on the job (internal support) might serve as protective buffers in reducing work pressures and burnout.

Formal supervision is also an important interpersonal influence that can contribute to burnout. Farber and Heifetz's (1981) participants reported that they relied on it for support. Harrison (1980) singled out quality of supervision as a major correlate of burnout. Social feedback in the form of both collegial communication and interaction with one's supervisor were very important environmental variables in two studies (Kafry & Pines, 1980; Pines & Kafry, 1978).

Considerable research now indicates that social support reduces, or buffers, the adverse psychological impacts of exposure to stressful life events and ongoing life strains (Cohen & Wills, 1985; Etzion, 1984; House, 1981; Kessler & McLeod, 1985; Seers, McGee, Serey & Graen, 1983; Turner, 1983; Williams & House, 1985). Relationships with others can significantly lower the risk of psychological disturbance in response to stress exposure. (Thoits, 1986).

Social support is an important mediator of stress (Cobb, 1976; Cohen & Wills, 1985; House, Landis & Umberson, 1988) and of disaster stress in particular (Green, Grace & Gleser, 1985; Solomon, Regier & Burke, 1989). Cobb (1976) examined a range of empirical studies that appeared to show the widespread benefits of social support in protecting individuals from a host of stressful conditions. He was, together with other theorists, influential in promoting the stress-buffer model of social support.

2.4.2 Theoretical considerations

According to Cobb's (1976) stress-buffer model, social support acts to protect individuals from the effects of stressful conditions. Generally, this has been interpreted to mean that the relationship between stressful life experiences and psychological distress would be diminished under conditions of greater social support.

By providing emotional sustenance, supportive others help individuals master their own emotional problems by mobilising their psychological resources. Additionally, by providing these people with tangible aid, resources, information and cognitive guidance, the supporters further enhance the individual's ability to cope with stressful situations. Ideally, according to Caplan (1974), one belongs to several supportive groups at home and at work, in church and in recreational or avocational sites.

Social support systems serve as buffers for the individual; they help to maintain the psychological and physical well-being of the individual over time. According to Pines, Aronson and Kafry (1981), creative use of social support systems provides an effective prevention mechanism against burnout.

A second general model grew out of research on the buffer model. According to the direct effect model, social support has salutary psychological and health effects independent of the stress process. These two models have guided research on social support. Despite the apparent simplicity of these models, it has proved quite difficult to generate, evaluate, and integrate relevant empirical findings (Vaux, 1988). Although coherent patterns of findings are more likely to emerge as the quality of studies improves, confusion and disagreement persist. According to Vaux (1988), many, if not most of these difficulties have a common source - the failure to recognise social support as a dynamic transactional process involving resources, behaviour and appraisals.

From this perspective, five conclusions may be drawn. There is a good deal of evidence that social support can have a direct and positive effect on well-being, both generally and independently of life stressors. There also is convincing evidence that social support can buffer the effects of stressors. Direct and buffer effects, respectively, tend to occur with measures that focus on affiliation and resources or on appraisals of availability or quality of support. The effects remain unpredictable, being shaped by personal, social and contextual factors in ways that are still unclear (Vaux, 1988).

2.4.3 Social support and fire fighters

Fire fighters interact with co-workers, supervisors and administrators in the work environment. These interactions may range from facilitative to stressful. Research has focused on several aspects of social interaction at work.

Fire fighters apparently prefer tight co-worker networks (Beaton & Murphy, 1993; Hartsough, 1985; Herbeson, Rando & Plant, 1984; Steinmetz, Kaplan & Miller, 1982). In a study by Fullerton, McCarroll, Ursano and Wright (1992), all of the fire fighters indicated that support from co-workers or "buddies" was important. Many of them indicated that support from fellow workers in decision making was particularly important. Working with a "buddy" facilitated staying on task and remembering training. In addition, it provided reassurance about decisions. Roy and Steptoe's (1994) study amongst male fire fighters reveals the protective effect of social support.

The majority of research on social support has focused on two themes: that social support buffers individuals from the effects of stressors, and that it contributes to well being independently of stressors. Therefore support might have a salutary effect on well-being by preventing the occurrence of stressors, buffering their effects, counteracting their effects, and functioning independently of stressors. Social support systems, particularly in the form of co-workers, seem particularly germane for fire fighters.

2.5 DEMOGRAPHIC CORRELATES

Personal characteristics have been shown to relate to job satisfaction, but relationships have been weak and variable (Seashore & Taber, 1975). Job satisfaction has been associated with individual demographics such as age, gender, marital status and education (Glen & Weaver, 1982; Jayaratne, Chess & Kunkel, 1986; Jayaratne, Tripodi & Chess, 1983; Lawler, 1971; Ronen, 1978).

In this research, the demographic correlates of absenteeism, tenure, rank, number of years since last promotion, age, race, marital status and fitness level were examined, using stepwise multiple regression analysis.

2.6 INTEGRATION OF LITERATURE REVIEW

This literature review has provided empirical evidence to support the aims of the research.

Firstly, a definite correlation between burnout and job satisfaction has been established. According to the research, burnout and job satisfaction are significantly inversely related (Burke, 1987; Burke & Greenglass, 1988; Burke, Shearer & Deszca, 1984; Cunningham, 1983; Iwanicki, 1983; Jayaratne, Chess & Kunkel, 1986; Jones, 1981; O'Toole, 1973; Pines, Aronson & Kafry, 1981; Pines & Maslach, 1978; Riggall, Godley & Hafer, 1984; Wolpin, Burke & Greenglass, 1991). This supports the aim that an increase in burnout will lead to a decrease in job satisfaction.

Secondly, it has shown that people in frequent, life-threatening challenges, e.g. fire fighters, experience prolonged stress which may lead to burnout (Glass, Singer & Pennebaker, 1973). Thus, this supports the aim that the probability of the sample under investigation experiencing burnout is high.

Thirdly, a review on the social support literature shows that social support buffers, or reduces the adverse impact of stress and burnout (Cherniss, 1980; Cohen & Wills, 1985; Farber & Heifetz, 1981; House, Landis & Umberson, 1988; Kafry & Pines, 1980; Kessler & McLeod, 1985; Pines & Kafry, 1978; Thoits, 1986; Turner, 1983).

In particular, social support from co-workers has been indicated as important for fire fighters (Beaton & Murphy, 1993; Fullerton, McCarroll, Ursano & Wright, 1992; Hartsough, 1985; Herbeson, Rando & Plant, 1984; Steinmetz, Kaplan & Miller, 1982). Thus, the review supports the aim of this research that satisfaction with co-workers will be unaffected by varying levels of burnout.

Finally, research shows a link between demographic variables, and burnout and job satisfaction. This supports the aim that demographic variables will predict burnout and job satisfaction.

In the final analysis, it can be concluded that a review of the literature shows that a literature review supports the aims of this research, as outlined in Chapter One.

2.7 CHAPTER SUMMARY

This chapter has thus outlined the two constructs of burnout and job satisfaction and described their relationship to fire fighters. It has also provided an integration between the two constructs, and linked them to the concept of social support. Finally, it has described relevant demographic correlates.

The next chapter is the empirical study, which deals with the first six steps of the research. This includes determination and description of the sample population, choosing the measuring instruments, administration and scoring of the instruments, statistical processing of the data, and finally, the formulation of hypotheses.

This empirical procedure outlines the research sample under investigation, and the rationale for its selection. It also examines the measuring battery utilised, and outlines the psychometric properties of the two instruments used, namely the Pines, Aronson and Kafry (1981) Burnout Index, and the Smith, Kendall and Hulin (1969) Job Descriptive Index. It then examines the method of data collection, as well as the data analysis. Finally, the research hypotheses are formulated.

The empirical study consists of 10 steps, namely:

- | | |
|---------|--|
| Step 1 | Determination and description of the sample population |
| Step 2 | Choosing the measuring instruments |
| Step 3 | Administration of the measuring instruments |
| Step 4 | Scoring of the measuring instruments |
| Step 5 | Statistical processing of data |
| Step 6 | Formulation of hypotheses |
| Step 7 | Reporting and interpretation of results |
| Step 8 | Integration and conclusion of research |
| Step 9 | Limitations of the research |
| Step 10 | Recommendations |

This chapter is concerned with steps 1 to 6. Chapter 4 details steps 7 to 10.

3.1 STEP 1: DETERMINATION AND DESCRIPTION OF THE SAMPLE POPULATION

The population of this empirical investigation represents members of a Central Fire Department in a major coastal city in South Africa. From this, a sample (N = 102)

was drawn by means of random sampling (102 employees were available within a delineated period, taking into account shift workers, absenteeism and sick leave). This sample was representative of other fire departments in the area, as the staff are rotated between the different departments on a regular basis, and do not remain in any one station for a lengthy period of time.

The sample consisted of males only. At the time of the study, there was only one female fire fighter, and as such, she was not considered representative of female fire fighters in general. Three language groups were represented: English, Afrikaans and Zulu. Four population groups were represented: Black, Coloured, Asiatic and White.

Categories such as fitness level, age, marital status, tenure etc. were chosen for investigation, in order to determine whether any correlations existed between these demographic variables, and the constructs of burnout and job satisfaction.

3.1.1 Rank

Approximately half (49,0%) of the sample were fire fighters. No Divisional Commanders were represented in the sample. Because of the low number of subjects in this rank, the probability of them being selected was small.

RANK	N	PERCENTAGE
Fire Fighter	34	33,4%
Senior Fire Fighter	50	49,0%
Station Commander	18	17,6%

Table 3.1 Demographic distribution according to rank

3.1.2 Tenure

One third (33,3%) of the sample had worked at the fire department for less than 5 years, and two thirds (66,6%) of the sample had worked there for less than 10 years. Only 12,8% of the sample had been there for over 15 years.

TENURE	N	PERCENTAGE
Under 5 years	34	33,3%
6 - 10 years	34	33,3%
11 - 14 years	21	20,6%
15 + years	13	12,8%

Table 3.2 Demographic distribution according to tenure

3.1.3 Number of years since last promotion

One third of the population have received no promotion. Approximately half of the sample (51,0%) have received a promotion in the past 5 years. 7,85% of the sample have received no promotion for the past 10 years.

YEARS SINCE LAST PROMOTION	N	PERCENTAGE
No promotion	34	33,3%
Less than 3 years	26	25,5%
3 - 5 years	26	25,5%
6 - 9 years	8	7,85%
10 + years	8	7,85%

Table 3.3 Demographic distribution according to number of years since last promotion

3.1.4 Age

The majority (87,3%) of the sample were below 40 years of age.

AGE	N	PERCENTAGE
20 - 29 years	43	42,2%
30 - 39 years	46	45,1%
40 - 49 years	13	12,7%

Table 3.4 Demographic distribution according to age

3.1.5 Race

Four population groups were represented Just over half (52,0%) were white. Approximately one third (31,3%) were Asiatics. The balance of under 20,0% were Black and Coloured

RACE	N	PERCENTAGE
Black	7	6,9%
Coloured	10	9,8%
Asiatic	32	31,3%
White	53	52,0%

Table 3.5 Demographic distribution according to race

3.1.6 Marital status

The majority (58,8%) of the sample was married, with only 8,8% being divorced. This suggests that burnout may not be linked to divorce rate.

MARITAL STATUS	N	PERCENTAGE
Married	60	58,8%
Single	33	32,4%
Divorced	9	8,8%

Table 3.6 Demographic distribution according to marital status

3.1.7 Fitness level

Fitness test results were obtained from personnel records. For a group of subjects who should be at their physical peak, only 5,9% scored an "A" on fitness tests. The majority (79,4%) scored "B" and "C", and in fact 14,7% failed. It would seem that either the fitness test has no correlation with the burnout scale, or the fitness test does not actually distinguish physical fitness.

FITNESS LEVEL	N	PERCENTAGE
A	6	5,9%
B	35	34,3%
C	46	45,1%
F (Fail)	15	14,7%

Table 3.7 Demographic distribution according to fitness level

3.2 STEP 2: CHOOSING THE MEASURING INSTRUMENTS

The selection of the measuring instruments was guided by the literature survey. It can be categorised as descriptive research in which the relevant models and theories of burnout and job satisfaction were presented in an integrated manner.

Various measuring instruments were considered regarding their applicability to the relevant models and theories of the research. Particular emphasis was placed on the validity and reliability of the various instruments. According to Lewin (1979: 77), a measure is valid "if it really measures what it is supposed to measure", and it is reliable "if it always produces the same result under the same conditions".

The following measuring instruments were chosen in this research design to measure burnout and job satisfaction:

- * The Pines, Aronson and Kafry (1981) Burnout Index
- * The Smith, Kendall and Hulin (1969) Job Descriptive Index

3.2.1 The Burnout Index

The Burnout Index (BI) will be discussed with reference to the development, rationale, description, administration, interpretation, validity, reliability and motivation for inclusion in this research.

3.2.1.1 Development of the Burnout Index

Pines, Aronson and Kafry's (1981) research on burnout centred at the University of California, Berkeley, and involved 3 916 people. Participants were students and professionals from the United States, Canada, Japan and Israel. The sample was studied from 1976 to 1980, and it was from this research that the measuring instrument in its present form arose. The developers of the instrument

acknowledge that the usual problems associated with correlating self-report data apply to much of the research that they have reported on.

3.2.1.2 Rationale of the Burnout Index

According to Pines, Aronson and Kafry (1981), burnout is the experience of physical, emotional and mental exhaustion. It is characterised by emotional and physical depletion and by the negation of one's self, one's environment, one's work and one's life.

They have developed a measuring instrument that seeks to measure each of these three constructs: physical, emotional and mental exhaustion. The rationale of the Pines, Aronson and Kafry (1981) Burnout Index is that the higher a respondent measures on this index, the more symptoms of physical, emotional and mental exhaustion he or she will exhibit. Conversely, the lower a respondent scores on the index, the less physical, emotional and mental exhaustion he or she will exhibit.

3.2.1.3 Description of the Burnout Index

The Pines, Aronson and Kafry (1981) Burnout Index (BI) is a self-report, questionnaire format that requires participants to respond to items on a Likert-type frequency scale. It comprises 21 items (evaluated on a 7-point frequency scale), presented in random order, whose mean value is calculated to derive the overall score of a respondent. Cut-off points are used as a guide to the severity of the burnout being experienced, as well as to the required action needed.

The items of the Index represent the three constructs of exhaustion, and are presented in the Index as follows:-

1. **Physical Exhaustion :** being tired, being physically exhausted, feeling wiped out, feeling run-down, being weary, feeling weak, feeling energetic.
2. **Emotional Exhaustion:** feeling depressed, being emotionally exhausted, feeling burned out, feeling trapped, being troubled, feeling hopeless, feeling anxious.
3. **Mental Exhaustion:** (negation of one's life, self, and others) being happy, being unhappy, having a good day, feeling worthless, feeling optimistic, feeling disillusioned and resentful about people, feeling rejected.

The 21 items of the Burnout Index are presented in random order and are each evaluated on a 7-point frequency scale. The scale has the following anchors:

- | | | |
|---|---|-----------|
| 1 | = | never |
| 2 | = | once |
| 3 | = | rarely |
| 4 | = | sometimes |
| 5 | = | often |
| 6 | = | usually |
| 7 | = | always |

The overall burnout score is the mean value of the responses to the items, with four items reversed (feeling energetic, being happy, having a good day, and feeling optimistic)

3.2.1.4 Administration of the Burnout Index

The Burnout Index is a self-administered instrument. The items are printed on an answer sheet, which the respondent uses to record his or her answers. The respondent is asked to read the directions and then to rate the frequency of his or her experiences about work or life, how he or she feels in general (e.g. being physically exhausted, feeling hopeless etc.). There is no time limit for the Burnout Index, although research shows that it usually takes 5 - 10 minutes to complete (Pines, Aronson & Kafry, 1981). The respondent is encouraged to complete all the answers. Since it is for the most part self-administering, it may be completed in group sessions, individually, or even at home.

The computation of the scores is a manual one, and involves the following steps:

Add the values of the following items:

1, 2, 4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 21, (A) _____

Add the values of the following items:

3, 6, 19, 20 (B) _____, subtract (B) from 32 to get (C) _____

Add A and C to get (D) _____. Divide D by 21.

This gives the total burnout score.

3.2.1.5 Interpretation of the Burnout Index

The interpretation of scores on the Burnout Index is as follows:-

- | | | |
|-------|---|---|
| 1 | - | A state of euphoria, which is highly unlikely |
| 2 - 3 | - | The respondent is doing well. He / she must ensure that completely honest answers were given |
| 3 - 4 | - | The respondent is exhibiting minor symptoms of burnout. He / she needs to examine his / her work and life, and evaluate priorities, and consider possible changes |
| 4 - 5 | - | The respondent is experiencing burnout to the extent that it is mandatory to do something about it |
| 5+ | - | The respondent is in an acute state of burnout, and needs immediate help |

3.2.1.6 Validity of the Burnout Index

With respect to validity, significant correlations ($p < 0,05$) generally between 0,20 and 0,40 were found for job satisfaction, desire to leave one's job, and negative attitude towards clients (Stout & Williams, 1983).

Although three types of exhaustion are distinguished, the BI is conceived as a one-dimensional questionnaire of burnout. Most researchers who employ the BI take the one-dimensionality of the instrument for granted. Two factorial validity studies failed to distinguish more than one burnout dimension in the BI (Schaufeli & Van Dierendonck, 1993). In contrast, Enzmann and Kleiber (1989) found some indications for a three-factor structure in their German version. They labelled their

factors Demoralisation, Exhaustion and Loss of Motive ('Antriebsverlust'). To date, confirmatory factor-analytic studies of the BI are lacking.

Although only a few studies have been carried out on the congruent validity of both the MBI and the BI, the results are quite comparable. Burnout as measured with the BI is strongly positively associated with MBI emotional exhaustion and MBI depersonalisation, and is somewhat less strongly but negatively associated with MBI personal accomplishment (Schaufeli & Van Dierendonck, 1993).

Discriminant validity investigations that assess the specificity of burnout, as measured by the questionnaire, are also rare. A notable exception is Meier (1984) who showed that a considerable overlap exists between burnout and depression, by employing a multitrait-multimethod methodology. However, he has been criticised for ignoring the multidimensional nature of burnout (Schaufeli & Van Dierendonck, 1993).

Despite the acceptance of the BI as a measurement instrument of burnout, a careful evaluation of its construct validity is lacking. Such analysis is particularly important when translated burnout inventories are applied to other national or cultural settings. This is particularly relevant for the South African context, should the BI ever be translated into any of the official languages, besides English.

Scores on the Burnout Index and on the Maslach Burnout Inventory's (MBI) (Maslach, 1982) emotional exhaustion and depersonalisation scales were found to be moderately correlated ($r = 0,50$) in two studies (Concoran, 1985; Stout & Williams, 1983), suggesting that the two instruments were measuring the same phenomenon.

3.2.1.7 Reliability of the Burnout Index

Test-retest reliability co-efficients are 0,89 for a 1 month interval, 0,76 for a 2 month interval, and 0,66 for a 4 month interval. Internal consistencies assessed by the alpha co-efficient range between 0,91 and 0,93.

The BI is a self-report, and by its nature has several problems (Shinn, 1982). There is a concern with social desirability and with internal consistency reliability, and the extent to which questions measuring the same construct are correlated with one another (other forms of reliability, such as stability over time, may also be important). Research on burnout in general relies heavily on the self-report, and would do well to diversify its portfolio of assessment tools (Shinn, 1982).

3.2.1.8 Motivation for inclusion of the Burnout Index

Initially, Pines, Aronson and Kafry (1981) proposed to limit the term burnout to the helping professions. However, this distinction was not followed up. Thus, in their definition, Pines and Aronson (1988) do not restrict burnout to certain occupational groups, and the measurement of fire fighter burnout can be achieved with this instrument. The Burnout Index has been applied to a wide variety of occupations, including managerial ones, in several industrialised Western countries (Etzion & Pines, 1986; Kafry & Pines, 1980; Pines et al, 1981).

Pines, Aronson and Kafry's (1981) Model of Burnout has been selected for this research study as it uses a broader conceptualisation of chronic stress, in which working with others may be a causal factor. However, it is also an expression of satisfaction with life in general (Arthur, 1990).

In terms of conceptual and operational congruence, the literature on burnout defines the three main components of burnout, emotional, physical and mental exhaustion, as follows:-

Emotional exhaustion involves feelings of depression, helplessness, hopelessness and entrapment, leading in extreme cases to mental illness or thoughts about suicide (Beck, Weissman, Lester & Trenxler, 1974). It may cause incessant, uncontrollable crying, or the loss of coping and control mechanisms. There is a feeling of emotional depletion, as well as irritability and anxiety. Futility and despair increase. Feelings of happiness and hope are replaced by loneliness, discouragement and disenchantment.

The Pines, Aronson and Kafry (1981) Burnout Index measures these components in terms of asking whether the respondent is feeling depressed, is emotionally exhausted, feels trapped, is troubled, feels hopeless, anxious, burned out etc. Thus, the instrument specifically attempts to measure what the literature defines as "emotional exhaustion".

Physical exhaustion, the second main component of burnout, is characterised by low energy, chronic fatigue, weakness and weariness (Freudenberger, 1977). The Burnout Index measures these symptoms in terms of asking whether the respondent is feeling tired, physically exhausted, run-down, weary, weak, etc. Thus, the instrument specifically attempts to measure what the literature defines as "physical exhaustion".

Finally, mental exhaustion, the last component of burnout, is characterised by the development of negative attitudes towards one's self, toward work, and toward life. People often report dissatisfaction with their work and way of life, and a lowered self-concept. They feel inadequate, inferior and incompetent (Pines and Solomon, 1977). The Burnout Index measures these symptoms in terms of asking whether the respondent feels worthless, feels optimistic, feels disillusioned and resentful about people, feels rejected etc. Thus, the instrument specifically attempts to measure what the literature defines as "mental exhaustion".

Thus, conceptual and operational congruence exists between the theoretical definitions of burnout, and the items on the Burnout Index, with specific reference to the three components of burnout - emotional, physical and mental exhaustion.

3.2.2 The Job Descriptive Index

The Job Descriptive Index will be discussed with reference to the development, rationale, description, administration, interpretation, validity, reliability and motivation for inclusion in this research.

3.2.2.1 Development of the Job Descriptive Index

Research contributing to the development of job satisfaction instruments has been the hallmark of Industrial / Organisational Psychology (Locke, 1976). Standardised job satisfaction scales date back into the 1930's. Since the 1960's, two standardised job satisfaction questionnaires, the Job Descriptive Index (JDI) (Smith, Kendall & Hulin, 1969), and the Minnesota Satisfaction Questionnaire (MSQ) (Weiss, Dawis, England and Lofquist, 1967), have been in the forefront of job satisfaction measurement. Programmatic research on these measures has succeeded in documenting their psychometric properties (Rentsch & Steel, 1992).

Smith, Kendall and Hulin (1969) originally intended to investigate only four areas of satisfaction, being work, pay and promotions (combined), supervision and co-workers. However, preliminary investigation indicated clearly that pay and promotions were two distinct although correlated sub-factors. Therefore, their analysis has been designed around five areas of job satisfaction: work, pay, promotions, supervision and co-workers. Whilst these factors do not specify completely the general construct of job satisfaction, they are the most distinct factors.

3.2.2.2 Rationale of the Job Descriptive Index

Numerous studies have clearly indicated that there are several distinct areas of job satisfaction, supporting the notion of multi-dimensionality (Smith, Kendall and Hulin, 1969). Measures of these sub-areas should be relatively independent, and the worker should be able to discriminate between them.

Smith, Kendall and Hulin (1969) identify five sub-areas of job satisfaction: the type of work, the pay, the opportunities for promotion, the supervision and the co-workers on the job. The rationale of this instrument is that the higher the respondent scores on the five sub-areas, the higher his or her level of job satisfaction. Conversely, the lower the scores on the five sub-areas, the less the level of job satisfaction.

3.2.2.3 Description of the Job Descriptive Index

The JDI measures five sub-areas of job satisfaction: the type of work, the pay, the opportunities for promotion, the supervision and the co-workers on the job. For each sub-area, there is a list of adjectives or short phrases, and the respondent is instructed to indicate whether each word or phrase applies with respect to the particular facet of his or her job in question. The answer can be:-

- * Y (Yes)
- * N (No)
- * ? (Cannot decide)

The sub-constructs of these five areas as described in the instrument are as follows:-

- (a) **WORK** Fascinating, routine, satisfying, boring, good, creative, respected, pleasant, useful, tiresome, healthful, challenging, on one's feet, frustrating, simple, endless, gives sense of accomplishment.
- (b) **PAY** Income adequate for normal expenses, barely live on income, bad, income provides luxuries, insecure, less than deserved, highly paid, underpaid.
- (c) **PROMOTION** Good opportunity for advancement, opportunity somewhat limited, promotion on ability, dead-end job, good chance for promotion, unfair promotion policy, infrequent promotions, regular promotions, fairly good chance for promotions.
- (d) **SUPERVISOR** Asks one's advice, hard to please, impolite, praises good work, tactful, influential, up-to-date, doesn't supervise enough, quick tempered, tells one where

one stands, annoying, stubborn, knows job well, bad, intelligent, leaves one on one own, lazy, around when needed.

- (e) **CO-WORKERS** Stimulating, boring, slow, ambitious, stupid, responsible, fast, intelligent, easy to make enemies, talk too much, smart, lazy, unpleasant, no privacy, active, narrow interest, loyal, hard to meet.

3.2.2.4 Administration of the Job Descriptive Index

The Job Descriptive Index is self-administering. The items are printed on the answer sheet which the respondent uses to record his or her answers. The respondent is asked to read the directions. There is no time limit and the respondent is encouraged not to omit any answers. Since it is self-administering, the Job Descriptive Index may be completed individually or in a group situation.

Since the system for scoring the JDI departs slightly from traditional methods, it is appropriate to give a short explanation of the method used. Ordinary scoring systems would be like the one shown in the "traditional weight" column of Table 3.8. The scoring of the JDI is shown under "Revised weight" of Table 3.8.

Response	Traditional Weight	Revised Weight
Yes to a positive item	3	3
No to a negative item	3	3
? to any item	2	1
Yes to a negative item	1	0
No to a positive item	1	0

Table 3.8 Traditional and revised weights for direct scoring of JDI items

In this investigation, the dimensions "hot" (under work content), and "satisfactory profit sharing" under pay, were omitted. A fire fighter's working environment is, by its nature, physically hot, and there may be language connotations involved with the word "hot". The profit sharing is not an option in the remuneration package. Because these items were omitted, it was not possible to obtain a composite score, and the raw scores of the five sub-scales had to be used in the analysis.

3.2.2.5 Interpretation of the Job Descriptive Index

As mentioned above, a composite score for the Job Descriptive Index was not possible, and so raw scores had to be used in the interpretation. Maximum possible scores were used as comparisons to respondents scores:

Sub-scale	Maximum score
Content of work	51
Supervisor	54
Pay	24
Promotions	27
Co-workers	54

Table 3.9 Maximum possible scores on the JDI

3.2.2.6 Validity of the Job Descriptive Index

The validation techniques used by Smith, Kendall and Hulin (1969) to develop the JDI are a textbook example of how to build construct validity into a self-report measure (Yeager, 1981). As such, more than 50 percent of the articles published in seven leading journals between 1970 and 1978 used the JDI to measure job satisfaction. The widespread use of the JDI has been attributed to the careful development of the instrument by Smith, Kendall and Hulin (1969) and the fact that it can be applied across a wide variety of demographic groups (Golembiewski

and Yeager, 1978). A revised version of the JDI has been recently released, but only a few items were actually changed. Thus it is assumed that this work is applicable to both the original and revised versions of the JDI (Buckley, Carraher & Cote, 1992).

There have been few attempts to assess the validity of the JDI. The few attempts which do exist (e.g. Dunham, Smith & Blackburn, 1977; Evans, 1969; Gillet & Schwab, 1975) consistently report that the JDI, when compared to alternative measures of job satisfaction, had good convergent and discriminant validity and reliability.

However, claims about the validity of the JDI may be suspect, as previous attempts to validate the JDI have several limitations. First, most of the studies utilise Campbell and Fiske's (1959) methodology to analyse multitrait-multimethod (MTMM) data. This methodology has several limitations that can restrict its usefulness (Buckley, Carraher & Cote, 1992). The most serious limitation is its difficulty in detecting and accounting for the existence of method variance (especially when similar methods are used). When method variance is both uncontrolled and undetected, this methodology can result in inflated estimates of convergent validity and confound estimates of discriminant validity.

A more appropriate methodology is to use confirmatory factor analysis which can detect and model method effects even if maximally dissimilar methods are not used. Confirmatory factor analysis (CFA) provides specific estimates of trait, method, and error variance irrespective of the correlation between the methods (Buckley et al. 1992).

Most studies also do not attempt to generalise validation results across a larger number of samples than the traditional single sample study (Buckley et al. 1992). Proponents of meta-analysis (Hunter, Schmidt & Jackson, 1982) point out the necessity of generalising results across samples because of the deficiencies involved in addressing complex theoretical issues with any one empirical research

study. Such deficiencies include variation due to the sample which is examined, bias due to the construction and administration of measurement instruments, recording and computational errors, and the lack of external validity.

As it is such a widely used instrument, the measurement qualities of the JDI are a major concern, and continual assessment of the validity of the JDI is important.

3.2.2.7 Reliability of the Job Descriptive Index

There have been numerous attempts to examine the measurement qualities of the JDI since the pioneering work of Smith, Kendall and Hulin (1969). Most of this work has concentrated on the assessment of reliability. For example, Drasgow and Kanfer (1985) have noted that the JDI exhibits measurement equivalence across a number of different sub-populations. After adding experimental items to evaluate the JDI, Roznowski (1989) found these new items to be assessing the same underlying dimensions as the originals; she lauded the JDI for having maintained excellent factorial clarity since its inception. Most of this work has shown the JDI to be a reliable measure.

3.2.2.8 Motivation for inclusion of the Job Descriptive Index

The instrument selected for this particular research is the JDI, one of the most widely used instruments in the organisational sciences today (O'Connor, Peters & Gordon, 1978). Programmatic research has succeeded in documenting its psychometric properties (Rentsch & Steel, 1992).

The advantages of the JDI are, firstly, that it is directed toward specific areas of satisfaction, rather than global or general satisfaction. This provides for situations where there are discernible differences which the respondent can report with some assurance.

Secondly, the verbal level required to answer the JDI is fairly low. It does not require that the respondent be able to make abstractions or understand long, vague

sentences with several qualifications, but only that he or she understands the general meaning of single words or short phrases. This is an advantage in South Africa, where the level of education of different race groups is stratified and diverse.

Thirdly, the JDI does not ask the respondent directly how satisfied he or she is with his or her work, but rather it asks him or her to describe the work. Thus, the responses have a job-referent, rather than a self-referent. In describing his or her job, the respondent does, however, provide information which may be used to infer his or her satisfaction. The descriptive format is used because describing some specific aspect of a job is easier than trying to describe internal states of feeling, particularly for less verbal and for poorly educated subjects (Smith, Kendall & Hulin, 1969).

In terms of conceptual and operational congruence, the literature on job satisfaction clearly indicates that there are several different areas of job satisfaction (Smith, Kendall & Hulin, 1969). This supports the notion of multi-dimensionality. Measures of these sub-areas should be relatively independent, and the employee should be able to discriminate between them. The Job Descriptive Index examines five of the sub-areas of job satisfaction: work, pay, promotions, supervision and co-workers. A full explanation of the items under each sub-area can be found in section 3.2.2.3. Whilst these factors do not specify completely the general construct of job satisfaction, they are the most distinct factors (Smith, Kendall & Hulin, 1969).

Thus, conceptual and operational congruence exists between the theoretical sub-areas of job satisfaction, and the items on the Job Descriptive Index, with specific reference to the five sub-areas of work, pay, promotions, supervision and co-workers.

3.5 STEP 5: STATISTICAL PROCESSING OF DATA

Data obtained from this research was subjected to the following statistical analyses using a statistical package for the Social Sciences (SAS Programme):-

- (1) Pearson's Correlation Co-efficient (r).
- (2) Cluster Analysis
- (3) Stepwise Multiple Regression Analysis

In terms of the hypotheses that follow, this research seeks to investigate the relationship between burnout and job satisfaction. Correlational analysis will determine the relationship between the independent and dependent variables, or between dependent variables, as correlations often tell you that variables are related (Hypotheses 1, 3 and 4). Cluster analysis will further support these suppositions. For example, this analysis should reveal trends between burnout and job satisfaction. In other words, trends within sub-groups can be identified (Hypotheses 1, 3 and 4). Multiple regression analysis will also be used to check for inter-correlations, in particular amongst the demographic variables (Hypotheses 5 and 6)

3.6 STEP 6: FORMULATION OF HYPOTHESES

The present study is largely exploratory in nature. Although the literature reviewed in previous chapters reveals research in the areas of burnout and job satisfaction, the writer is not aware of any research which directly and specifically investigates the correlation between the two, in a South African fire fighting context. The hypotheses statements are as follows:-

Hypothesis 1

H₀ An increasing level of burnout, as measured by the Pines, Aronson and Kafry (1981) Burnout Index, will have no effect on levels of job

satisfaction, as measured by the Smith, Kendall and Hulin (1969) Job Descriptive Index.

- H₁ An increasing level of burnout, as measured by the Pines, Aronson and Kafry (1981) Burnout Index, will lead to a decreasing level of job satisfaction, as measured the Smith, Kendall and Hulin (1969) Job Descriptive Index.

Hypothesis 2

- H₀ Fire fighters do not experience significant levels of burnout, as measured by the Pines, Aronson and Kafry (1981) Burnout Index.
- H₂ Fire fighters experience significant levels of burnout, as measured by the Pines, Aronson and Kafry (1981) Burnout Index.

Hypothesis 3

- H₀ The Pines, Aronson and Kafry (1981) Burnout Index will not predict job satisfaction as measured by the Smith, Kendall and Hulin (1969) Job Descriptive Index.
- H₃ The Pines, Aronson and Kafry (1981) Burnout Index will predict job satisfaction as measured by the Smith, Kendall and Hulin (1969) Job Descriptive Index.

Hypothesis 4

- H₀ Satisfaction with co-workers, as measured by the sub-scale on the Smith, Kendall and Hulin (1969) Job Descriptive Index, will be affected by varying levels of burnout, as measured by the Pines, Aronson and Kafry (1981) Burnout Index.

H₄ Satisfaction with co-workers, as measured by the sub-scale on the Smith, Kendall and Hulin (1969) Job Descriptive Index, will be unaffected by varying levels of burnout, as measured by the Pines, Aronson and Kafry (1981) Burnout Index.

Hypothesis 5

H₀ Demographic variables will not predict some aspects of burnout, as measured by the Pines, Aronson and Kafry (1981) Burnout Index.

H₅ Demographic variables will predict some aspects of burnout, as measured by the Pines, Aronson and Kafry (1981) Burnout Index.

Hypothesis 6

H₀ Demographic variables will not predict some aspects of job satisfaction, as measured by the Smith, Kendall and Hulin (1969) Job Descriptive Index.

H₆ Demographic variables will predict some aspects of job satisfaction, as measured by the Smith, Kendall and Hulin (1969) Job Descriptive Index.

3.7 CHAPTER SUMMARY

This chapter discussed the first six steps of the empirical investigation. The sample population's determination and description; the choice, administration and scoring of the measuring instruments; the statistical processing of data and the formulated hypotheses were outlined.

Chapter 4 discusses steps 7 to 10 of the empirical investigation.

Chapter 4 contains the reporting of results with the specific aim of integrating the results and formulating recommendations.

4.1 STEP 7: REPORTING AND INTERPRETATION OF RESULTS

This chapter, which outlines the results of the research, commences with an analysis of the burnout composite score. It then examines the results of correlational analysis between the burnout sub-scales and the job satisfaction sub-scales. The results of cluster analysis between burnout and job satisfaction is then detailed and discussed.

Stepwise multiple regression analysis is utilised to examine demographic variables as predictors of burnout and job satisfaction. Finally, the research is integrated and concluded, and both limitations and recommendations of the research are formulated.

4.2 BURNOUT COMPOSITE SCORE

The Burnout Composite Score comprises three sub-scales:- a) physical exhaustion; b) emotional exhaustion; and c) mental exhaustion. The analysis of data takes the form of basic, hypothesis-generating research, based on the general hypotheses formulated. The results are reported and interpreted as follows:-

SCORE	N	PERCENTAGE (%)
< 2	7	6,9%
2 - 3	44	43,1%
3 - 4	41	40,2%
4 - 5	10	9,8%
5 +	0	0,0%
TOTAL	102	100%

Table 4.1 Analysis of burnout composite score

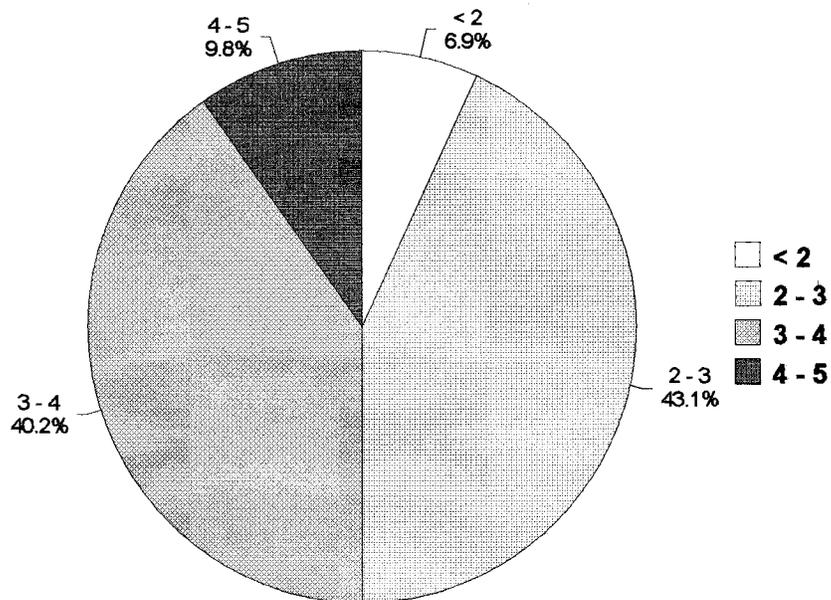


Figure 4.1 Depiction of burnout composite score

A significant portion of the sample (50%) scored 3 or higher on the Burnout Index, and are experiencing symptoms of burnout ranging from extremely mild, to relatively severe. 9,8% are experiencing burnout to the extent that it is necessary to do something about it.

4.3 CORRELATIONAL ANALYSIS

The sub-scales of the Burnout Index were correlated with the sub-scales of the Job Descriptive Index, using Pearson's Correlation Co-efficient. The co-efficients are presented in Table 4.2 and a detailed analysis follows thereafter.

	Job Satisfaction Sub-Scales				
Burnout Sub-Scales	Content of Work	Supervision	Pay	Promotions	Co-Workers
Physical Exhaustion	-0,37893 ***	-0,29659 **	-0,20109 *	-0,34886 **	-0,17399
Emotional Exhaustion	-0,41333 ***	-0,26506 **	-0,29969 **	-0,37090 ***	-0,20014 *
Mental Exhaustion	-0,44325 ***	-0,31369 **	-0,20138 *	-0,33109 **	-0,15675

(* p < 0,05)

(** p < 0,01)

(*** p < 0,0001)

Table 4.2 Correlational analysis between the burnout sub-scales and the job satisfaction sub-scales

4.3.1 Physical exhaustion and job satisfaction

	Physical Exhaustion	
	Pearson r	Significance
Satisfaction with content of work	-0,37893	0,0001
Satisfaction with supervisor	-0,29659	0,0025
Satisfaction with pay	-0,20109	0,0427
Satisfaction with promotions	-0,34886	0,0003
Satisfaction with co-workers	-0,17399	0,0803

Table 4.3 Correlational analysis between physical exhaustion and the JDI sub-scales

Physical exhaustion is significantly inversely related ($p < 0,05$) to satisfaction with content of work, supervision, pay and promotions. Therefore, the more physically exhausted the subjects are, the more dissatisfied they are likely to be with the content of their work, their supervision, their pay and promotions.

There is no significant correlation between physical exhaustion and satisfaction with co-workers. The relationship amongst co-workers appears to remain unaffected by fluctuating levels of burnout, suggesting that it is an insulator against burnout, providing a valuable coping resource.

Physical Exhaustion	Emotional Exhaustion		Mental Exhaustion	
	Pearson r	Significance	Pearson r	Significance
	0,78849	0,0001	0,59935	0,0001

Table 4.4 Correlational analysis between physical exhaustion and the BI sub-scales

The more physically exhausted the subjects are, the more emotionally and mentally exhausted they appear to be too. It appears that all three sub-scales of the Burnout Index are positively inter-correlated, and could be measuring some amount of the same variable.

4.3.2 Emotional exhaustion and job satisfaction

	Emotional Exhaustion	
	Pearson r	Significance
Satisfaction with content of work	-0,41333	0,0001
Satisfaction with supervisor	-0,26506	0,0071
Satisfaction with pay	-0,29969	0,0022
Satisfaction with promotions	-0,37090	0,0001
Satisfaction with co-workers	-0,20014	0,0437

Table 4.5 Correlational analysis between emotional exhaustion and the JDI sub-scales

Emotional exhaustion is significantly inversely related ($p < 0,05$) to satisfaction with content of work, supervision, pay and promotions. Therefore, the more emotionally exhausted the subjects are, the less likely they are to be satisfied with the content of their work, their supervision, pay and promotions.

The correlation with co-workers borders on significance ($p < 0,05$). If the significance is looked at in context with the other burnout sub-scales and satisfaction with co-workers, It can be said that the significance between burnout and satisfaction with co-workers is negligible. Once again, the relationship amongst co-workers appears to remain unaffected by fluctuating levels of burnout, suggesting that the relationship amongst co-workers provides a moderating effect against burnout.

Emotional Exhaustion	Physical Exhaustion		Mental Exhaustion	
	Pearson r	Significance	Pearson r	Significance
	0,78849	0,0001	0,75221	0,0001

Table 4.6 Correlational analysis between emotional exhaustion and the BI sub-scales

The more emotionally exhausted the subjects are, the more likely they are to be both physically and mentally exhausted. Once again, there appears to be a strong inter-correlation between the three sub-scales of the Burnout Index, and they could be measuring some amount of the same variable.

4.3.3 Mental exhaustion and job satisfaction

	Mental Exhaustion	
	Pearson r	Significance
Satisfaction with content of work	-0,44325	0,0001
Satisfaction with supervisor	-0,31369	0,0013
Satisfaction with pay	-0,20138	0,0425
Satisfaction with promotions	-0,33109	0,0007
Satisfaction with co-workers	-0,15675	0,1156

Table 4.7 Correlational analysis between mental exhaustion and the JDI sub-scales

Mental exhaustion is significantly inversely related ($p < 0,05$) to satisfaction with content of work, supervision, pay and promotions. Therefore, the more mentally exhausted the subjects are, the less likely they are to be satisfied with the content of their work, their supervision, pay and promotions. Once again, no significant correlations were found between mental exhaustion and satisfaction with co-workers. There seems to be no effect on this relationship, despite fluctuations in burnout, and it would appear to have a moderating effect on burnout.

Mental Exhaustion	Physical Exhaustion		Emotional Exhaustion	
	Pearson r	Significance	Pearson r	Significance
	0,59935	0,0001	0,75221	0,0001

Table 4.8 Correlational analysis between mental exhaustion and the BI sub-scales.

Yet again, there appears to be a strong inter-correlation between the three sub-scales of the Burnout Index and they could be measuring some amount of the same variable.

4.3.4 Summary of correlational analysis

The results of the correlational analysis conducted may be summarised as follows:-

The more physically, emotionally and mentally exhausted the subjects are, the less satisfied they are likely to be with the content of their work, their supervision, their pay and promotions.

For both physical and mental exhaustion, the relationship with satisfaction with co-workers is not significant ($p < 0,05$), and for the purposes of this research, the relationship between emotional exhaustion and satisfaction with co-workers can be said to be negligible. The relationship amongst co-workers thus appears to remain unaffected by fluctuating levels of burnout, suggesting that the relationship amongst co-workers provides a moderating effect against burnout.

There is a strong inter-correlation between the three types of exhaustion, and there seems to be a common denominator present in all three (i.e. they measure some amount of the same variable). It therefore may only be necessary to measure one type of exhaustion, as the results do not appear to differentiate between the physical, emotional or mental aspects, but rather give a measure of the 'exhaustion' factor.

4.4 CLUSTER ANALYSIS

The cluster analysis conducted examined the construct of burnout, and its relationship to the job satisfaction sub-scales of satisfaction with content of work, supervisor, pay, promotions and co-workers.

4.4.1 Burnout and satisfaction with content of work

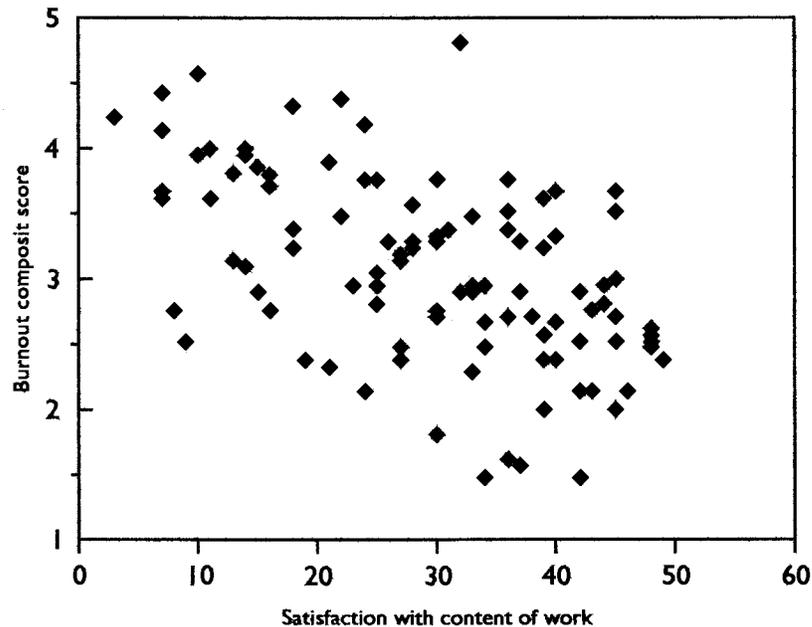


Figure 4.2 Burnout and satisfaction with content of work

Figure 4.2 indicates that more than half of the people who are experiencing burnout (a score on the Burnout Index of 3 or more) are scoring low on the sub-scale of satisfaction with content of work. Of the subjects not experiencing burnout (a score on the BI of below 3), most are clustering towards the top end of the sub-scale of satisfaction with work.

In other words, the less burnout they are experiencing, the more satisfied they appear to be with the content of their work. Likewise, the more burnout they are experiencing, the less satisfied they appear to be with the content of their work.

This would verify the inverse relationship found using Pearson's co-efficient. As correlational analysis revealed, the greater the level of burnout experienced, the less satisfied the subjects are with the content of their work.

The potential risk to life and exposure to traumatic incidents, coupled with many hours of boredom waiting on standby, and the fatigue experienced by many shiftworkers, may increase the propensity for burnout. According to Murphy, Beaton, Cain and Pike (1994), shift-work affects job performance, normal sleep patterns, social and family life, and is the equivalent of chronic jet lag. Thus shift workers are at risk for stress-related disorders (Tasto, Colligan, Skjei & Polly, 1978).

Yet despite the inverse relationship that researchers have found between burnout and job satisfaction, Noran (1995) suggests that fire fighters enjoy the content of their work, and experience danger in positive and self-affirming ways, due to sociological and anthropological reasons.

Corneil (1991) considers the fire service a distinct sub-culture, with its own values, beliefs, norms, rituals and language, resistant to outsiders. Kaprow (1991) suggests that this closed society may give fire fighters a sense of control over their environment, as well as the content of their work, resulting in job satisfaction.

If one looks at Figure 4.2, the satisfaction with content of work scores are spread fairly evenly across the x-axis, with a slight tendency towards the more positive end. In other words, as a group, even although there is an inverse relationship between burnout and satisfaction with content of work, there is not a major problem with satisfaction with content of work, confirming Noran (1995) and Corneil's (1991) findings.

4.4.2 Burnout and satisfaction with supervisor

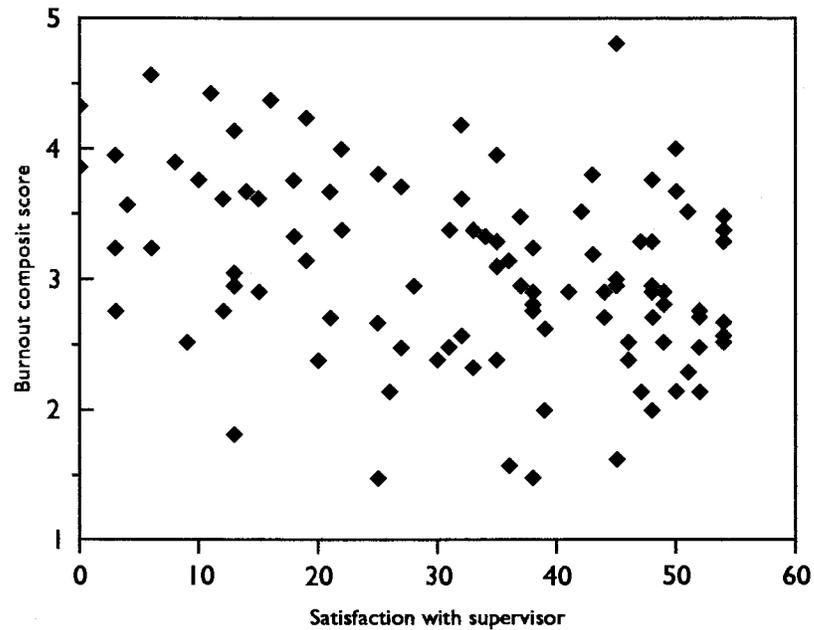


Figure 4.3 Burnout and satisfaction with supervisor

Figure 4.3 indicates that the people who are experiencing burnout (a score of 3 or more on the Burnout Index) are spread evenly across the job satisfaction sub-scale of satisfaction with supervisor. Cluster analysis indicates that subjects who are experiencing burnout are not necessarily unhappy with their supervisor. There may be other moderating variables contributing to those who are unhappy with their supervisors, and in fact, burnout may not be a contributing factor.

Of those people not experiencing burnout (a score of below 3 on the BI) the majority of subjects are clustering at the top end of the sub-scale of satisfaction with supervisor. This would appear to verify the correlational analysis that the less the level of burnout, the more satisfied the subjects are with their supervisor. However, the inverse does not appear to be as clear cut. In other words, a high level of burnout does not mean the score of satisfaction with supervisor will necessarily drop. Therefore, supervisors may be providing a buffer effect against stress and burnout.

Thus, it would appear that even although 50% of the subjects may be experiencing symptoms of burnout (a score of 3 or more on the BI), their supervisors do not appear to be the main contributors to their dissatisfaction.

According to Hofmeyr (1997), the supervisor plays a key role in the satisfaction and well-being of subordinates. A good manager-employee relationship can counteract other frustrations being experienced by employees, and overall satisfaction is often tied to the strength of the relationship between manager and employee.

In his survey of 22 000 South African employees, Hofmeyr (1997) found that employees' attitude towards "supervision" has deteriorated in the past few years. Almost half the employees surveyed feel that they are seldom recognised by their supervisor for work well done. Two-thirds feel their supervisor is usually receptive to changes suggested by employees. One in three feel that their supervisor does not make clear-cut decisions.

One implication of these findings is that companies may have to take more seriously the idea of the supervisor as coach and mentor, someone who gives regular feedback and recognition, supports and develops subordinates and builds teamwork. This is particularly the case if one agrees that the supervisor - subordinate relationship is central to employee well-being.

It may be that for the majority of fire fighters, the supervisor has a valuable role to play as a buffering effect from stress and burnout. The supervisors in this instance may be providing support through informal counselling to their subordinates. As the supervisors have come up through the ranks, and have experienced and are usually still experiencing the hazards of the job, they can empathise with their subordinates and give them advice and encouragement. This mentoring relationship could be one of the most powerful insulators in halting a gradual progression towards burnout. In fact, with skilled application, it could even serve to reduce stress and burnout experienced.

Fiedler, Frost & Swartout (1981) found that the quality of interaction between supervisors and lower ranking fire fighters was a most important stressor reported by their sample. Thus, in this sample where the relationship appears satisfactory, every effort should be made to enhance and develop the relationship.

4.4.3 Burnout and satisfaction with pay

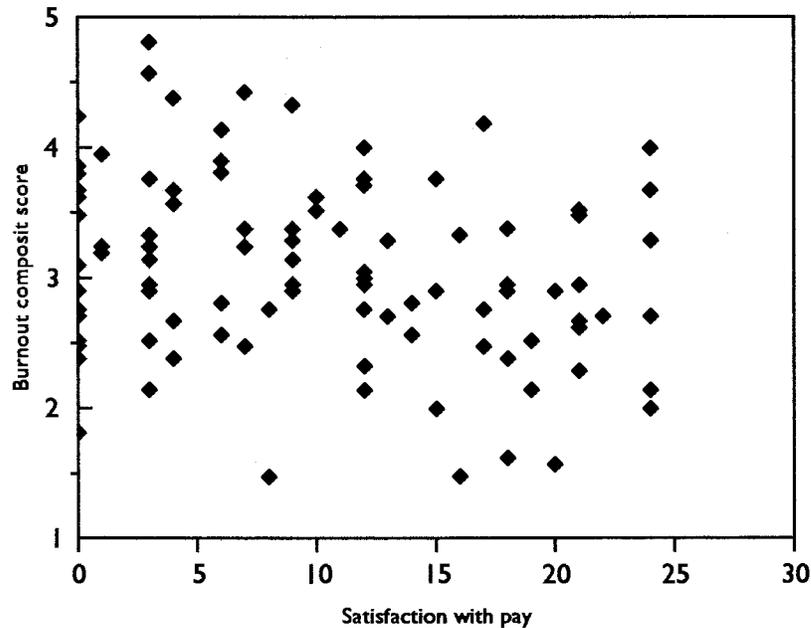


Figure 4.4 Burnout and satisfaction with pay

Figure 4.4 indicates that the subjects experiencing burnout (a score of 3 or more on the Burnout Index) are clustering around the lower end of the job satisfaction sub-scale of pay, indicating a major dissatisfaction with pay. In other words, a high level of burnout is inversely related to the job satisfaction sub-scale of satisfaction with pay. This would verify the inverse relationship found using Pearson's Co-efficient.

A point to note is that almost 14% of the sample scored zero. This is almost identical to the zero score of satisfaction with promotions. Content of work and

co-workers had no zero scores, and the supervision sub-scale only had two zeros. This suggests a serious dissatisfaction with pay, as well as promotions. In fact, even some subjects who were not suffering from burnout scored zero on the satisfaction sub-scale.

According to Hofmeyr's (1997) study of 22 000 South African employees, in terms of pay, employees in 1996 were far less satisfied with their pay than they were two years earlier. The majority feel their pay is uncompetitive, and almost sixty percent feel that they are underpaid for the work they do. Furthermore, most feel their company is not doing a good job of matching pay to performance. Also of concern is the finding that almost half those surveyed do not know how their pay is determined. In the survey, pay was the most negative area measured, with an overall favourable response of 22%.

According to Hofmeyr (1997), pay tends to be an indicator for concerns and problems being experienced by employees. If employees are dissatisfied with organisational life, this tends to be reflected quickly in perceptions of pay. In interpreting attitudes towards pay, organisations may argue that their pay is competitive, and that employees are being unduly negative. However, if employees perceive that their pay is poor, this becomes their 'reality' and companies need to take that reality seriously. In fact, fire fighters' pay may not be as low as they perceive it to be, but their perception of it may be a reflection of the prevailing poor economic climate in South Africa generally. Pay is a 'dissatisfier' in terms of Herzberg's (1966) Hygiene Theory, and as long as perceptions remain negative, employees will have a reason to feel disaffected.

It is also worth noting that perceptions of pay in South Africa are consistently more negative than perceptions of pay in other countries such as Canada, the United States, Germany and the United Kingdom (Hofmeyr, 1997). If pay in South Africa is a more serious dissatisfier than in a number of other countries, it might mean that before employees can become motivated, attention will have to be paid to the hygiene factors. Alternatively, workers may feel frustrated by a lack of

responsibility, achievement and growth, and are using pay to express this frustration.

Thus, there appears to be a general dissatisfaction with pay, and it appears to be a significant contributor to a lack of job satisfaction experienced by the subjects under investigation.

4.4.4 Burnout and satisfaction with promotions

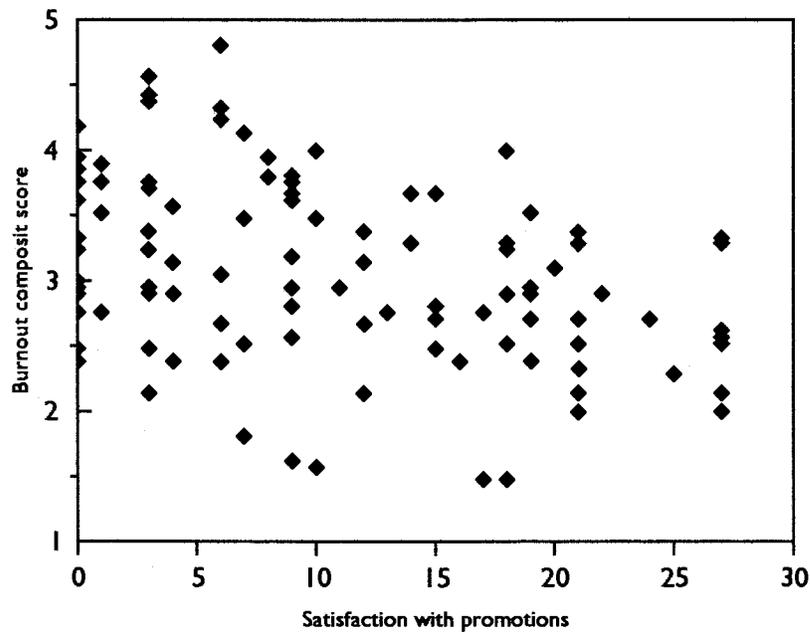


Figure 4.5 Burnout and satisfaction with promotions

Figure 4.5 indicates that subjects who are experiencing burnout (a score of 3 or more on the Burnout Index) are clustering around the lower end of the job satisfaction sub-scale of promotions. In other words, an increasing level of burnout results in a decrease in satisfaction with promotions. This would verify the inverse relationship found using Pearson's Co-efficient. The greater the level of burnout experienced, the less satisfied the subjects are with their promotions.

The hierarchy of the Fire Department consist of four "rungs" on the "ladder", which does not allow for rapidly attainable promotional prospects. Also, as there is only one fire department in each region, the possibility of changing fire departments becomes very limited. A fire fighter is trained in a highly specialised field, and as such, cannot simply change companies and climb an alternative "corporate ladder". Once trained and settled in a fire fighting career, the individual becomes enmeshed in a job that is very difficult to leave. The older these subjects get, the less easy it is for them to pursue a different career.

Thus, whilst upward progress may seem interminable, and the position of Divisional Commander only attained by a select few, the average fire fighter has no alternative but to remain with the system. There is a negligible market for his skills outside the confines of a fire department within a local authority.

This frustration with slow and limited upward mobility may be a source of the burnout experienced by these subjects. The fact that turnover is low may be attributable to the fact that there are no alternative jobs available, rather than to the fact that these subjects do not wish to leave. The motive to leave may exist, but the opportunity may not.

As noted with the discussion on burnout and satisfaction with pay, almost 14% of the sample scored zero on satisfaction with promotions. Promotions, together with pay, appear to be providing the greatest cause of dissatisfaction, and as such, are issues which need the attention of relevant parties within the local authority.

4.4.5 Burnout and satisfaction with co-workers

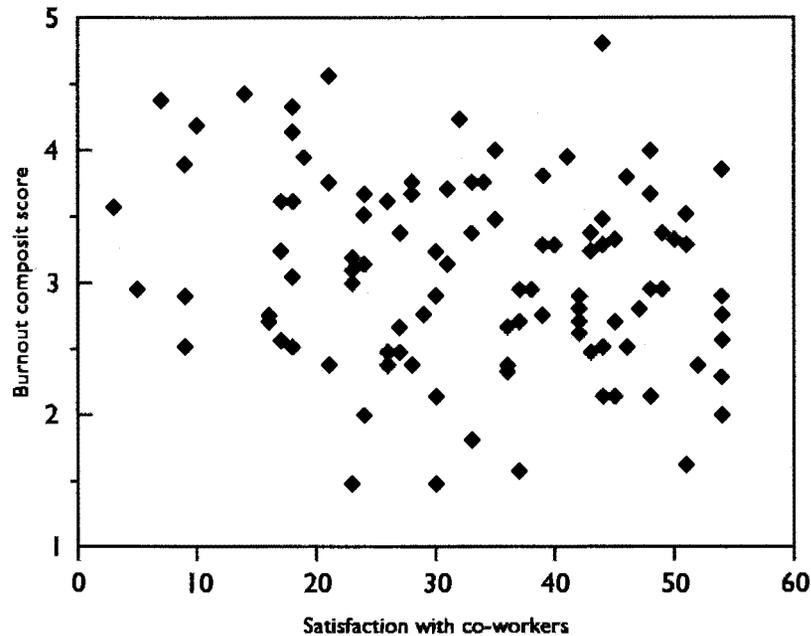


Figure 4.6 Burnout and satisfaction with co-workers

Figure 4.6 indicates that the subjects experiencing burnout (a score of 3 or more on the Burnout Index) are clustering on the higher end of the sub-scale of satisfaction with co-workers. This indicates that the majority of subjects who are experiencing burnout are still satisfied with their co-workers.

In terms of cluster analysis, there appears to be no inverse relationship between burnout and satisfaction with co-workers. In fact, high levels of burnout do not seem to affect relationships with co-workers. This confirms the correlational analysis using Pearson's Co-efficient, and points to co-workers providing a buffering effect against burnout. The majority of subjects, no matter what their levels of burnout are, appear to be satisfied with their co-workers.

As with the case of the supervisors, the co-worker informal "buddy" system would appear to act as a powerful coping resource to alleviate the negative effects of burnout.

These subjects face fire, death and other traumatic events side by side with their co-workers. They may often put their lives in their co-worker's hands, and a slip-up could result in injury or death. Levels of trust and co-operation need to be particularly high.

As participants in Farber and Heifetz's (1981) study indicated, collegial support was essential to alleviate stress. Social feedback in the form of collegial communication and interaction was an important environmental variable in Kafry and Pines (1980) and Pines and Kafry (1978) studies.

Considerable research indicates that social support buffers, or reduces the adverse effects of exposure to stress (Cohen & Wills, 1985; Kessler & McLeod, 1985; Turner, 1983). Relationships with others can significantly lower the risk of psychological disturbance in response to stress exposure (Thoits, 1986).

In Hofmeyr's (1997) study, satisfaction with co-workers was the most positive area measured, with an overall favourable response of 71%, but it shows a significantly negative trend since 1994. Most employees (86%) feel that where they work, people get along well together. Three out of four employees feel that relationships between employees of different races or ethnic groups are good, but this is lower than in 1994. There has also been a decline in the percentage of employees who feel that they are treated with respect and fairness. Only sixty percent of employees now feel that this is the case.

This study of fire fighter reveals a high level of satisfaction with co-workers, although no comparison can be made to satisfaction levels with previous years. In general, research shows that fire fighters prefer tight co-worker networks (Beaton & Murphy, 1993; Hartsough, 1985; Herbeson, Rando & Plant, 1984; Steinmetz, Kaplan & Miller, 1982). In a study by Fullerton, McCarroll, Ursano & Wright (1992) all of the fire fighters indicated that support from co-workers was important. Working with a "buddy" facilitated decision making, staying on task and remembering training. The fire department can use this satisfaction with co-workers as a buffer against burnout.

In fact, in the correlational analysis, satisfaction with co-workers was the only sub-scale on the JDI that was not correlated significantly ($p < 0,05$) with all sub-scales of the Burnout Index. In other words, high levels of burnout did not imply a lowered satisfaction with co-workers. Thus, in times of severe stress and burnout, these subjects probably rely even more heavily on each other as a coping resource.

4.5 STEPWISE MULTIPLE REGRESSION ANALYSIS

Stepwise multiple regression analysis was conducted to assess demographic variables as predictors of both burnout and job satisfaction.

4.5.1 Demographic variables as predictors of burnout

(a) Physical exhaustion

Demographic variable	Multiple regression co-efficient	Significance
Tenure	$R^2 = 0,0523$	$p < 0,0606$

Table 4.9 Stepwise multiple regression analysis of physical exhaustion and demographic variables

Tenure is bordering on the 0,05 level of significance ($p < 0,06$) in predicting physical exhaustion. $R^2 = 0,0523$. In other words, 5,23% of the variance in physical exhaustion is accounted for by tenure. No other demographic variable met the 0,15 significance level for entry into the model.

(b) Emotional exhaustion

Demographic variable	Multiple regression co-efficient	Significance
Tenure	$R^2 = 0,065$	$p < 0,0359$

Table 4.10 Stepwise multiple regression analysis of emotional exhaustion and demographic variables

Tenure is significant at the 0,05 level ($p < 0,0359$) in predicting emotional exhaustion. $R^2 = 0,065$. In other words, 6,5% of the variance in emotional exhaustion is accounted for by tenure. No other demographic variable met the 0,15 significance level for entry into the model.

(c) Mental exhaustion

No demographic variable predicted mental exhaustion, as no variable met the 0,15 significance level for entry into the model.

4.5.2 Demographic variables as predictors of job satisfaction

No demographic variables predicted any of the job satisfaction sub-scales, as no variable met the 0,15 significance level for entry into the model.

4.5.3 Summary of stepwise multiple regression

a) Demographic variables as predictors of burnout

The only demographic variable that is a possible predictor of physical exhaustion is tenure. Tenure also significantly predicts emotional exhaustion. No demographic variable predicts mental exhaustion.

- b) Demographic variables as predictors of job satisfaction

No demographic variables predict job satisfaction.

4.6 STEP 8: INTEGRATION AND CONCLUSION OF RESEARCH

According to Sparrius (1992), there is an absence of research in South Africa amongst rescue service workers, of which fire fighters form a part. Oosthuizen (1994) found a high degree of stress in ambulance men, and Swanepoel and Van Outshoorn (1988) found that brigadesmen, on the basis of personality, are better able to cope with stress. De Villiers (1988) examined stress in fire brigade personnel, and Dietrich and Hattingh (1993) investigated critical incident stress in emergency services personnel. Odendal and Van Wyk (1988) translated a burnout inventory into Afrikaans and Barber (1991) examined the socio-economic desirability of the privatisation of fire services. However, research pertaining specifically to fire fighters in South Africa, with particular reference to burnout and job satisfaction, is scarce.

Although extensive burnout research has been conducted, perhaps most notably by Maslach (1982), Pines, Aronson and Kafry (1981), Freudenberger (1977) and others in the United States, their applicability to the South African situation is uncertain. This lack of data and adequate bases of comparison, point to the appropriateness of a quantitative study in the South African context.

Six hypotheses were proposed. Firstly, it was hypothesised that an increasing level of burnout, as measured by the Pines, Aronson and Kafry (1981) Burnout Index, will lead to a decreasing level of job satisfaction, as measured by the Smith, Kendall and Hulin (1969) Job Descriptive Index. The sub-scales of the Burnout Index were correlated with the sub-scales of the Job Descriptive Index, using Pearson's Correlation Co-efficient. Significant negative correlations ($p < 0,05$)

between 0,20 and 0,44 exist between all three sub-scales of burnout, and the job satisfaction sub-scales of content of work, supervision, pay and promotions.

These results correspond with other research that found significant negative correlations between burnout and job satisfaction (Meadow, 1981; Pines and Kafry, 1978; Pines and Maslach, 1978; Riggan, Godley & Hafer, 1984; Savicki & Cooley, 1982; Streepy, 1981; Stout & Williams, 1983). These results support the first aim of the research, and thus this hypothesis can be accepted.

In terms of burnout and satisfaction with content of work, pay and promotions, cluster analysis reveals that the higher the levels of burnout, the less satisfied the subjects are. If one looks at burnout and satisfaction with supervisor, this inverse relationship does not appear as apparent. Those who have low levels of burnout appear to be satisfied, implying an inverse relationship. However, those experiencing high levels of burnout do not seem to be clustering around the lower end of dissatisfaction, but are rather spread fairly evenly across the sub-scale. This indicates that subjects experiencing burnout are not necessarily unhappy with their supervisor. In fact, the supervisor may be providing a buffering effect against burnout.

In terms of satisfaction with co-workers, cluster analysis here clearly reveals that subjects who are experiencing burnout are not necessarily dissatisfied with their co-workers, and it would appear as though they are providing a strong insulator against stress.

Thus, cluster analysis confirms the inverse relationship existing between the sub-scales of content of work, pay and promotion, and to a slight degree supervision, and provides further support for this hypothesis.

Secondly, it was hypothesised that fire fighters experience significant levels of burnout, as measured by the Pines, Aronson and Kafry (1981) Burnout Index. The results of this research show that a significant number (50%) of the sample

studied are exhibiting significant levels of burnout. 9,8% of the sample are experiencing burnout to the extent that it is necessary to do something about it. These statistics represent a significant proportion of the sample under investigation. The results support the second aim of the research, and this hypothesis can thus be accepted.

Thirdly, it was hypothesised that the Pines, Aronson and Kafry (1981) Burnout Index will predict job satisfaction, as measured by the Smith, Kendall and Hulin (1969) Job Descriptive Index. Both correlational analysis and cluster analysis indicate that the Burnout Index is a valid predictor of the job satisfaction sub-scales of content of work, supervision, pay and promotions. Thus, the Pines, Aronson & Kafry (1981) Burnout Index has been found to be a valid instrument in predicting certain job satisfaction sub-scales of the Smith, Kendall and Hulin (1969) Job Descriptive Index. This hypothesis can be accepted, although norm groups still need to be developed for the South African context.

Fourthly, it was hypothesised that satisfaction with co-workers, as measured by the sub-scale on the Smith, Kendall and Hulin (1969) Job Descriptive Index, will be unaffected by varying levels of burnout, as measured by the Pines, Aronson and Kafry (1981) Burnout Index. Correlational analysis shows no significant correlation between burnout and satisfaction with co-workers, indicating that satisfaction with co-workers is unaffected by varying levels of burnout. This supports the view that social support buffers or reduces the adverse impact of burnout (Beaton & Murphy, 1993; Cherniss, 1980; Cohen & Wills, 1985; Farber & Heifetz, 1981; Fullerton, McCarroll, Ursano and Wright, 1992; Hartsough, 1985; Herbeson, Rando & Plant, 1984; Steinmetz, Kaplan & Miller, 1982).

Cluster analysis also confirms this, as satisfaction with co-workers remains positive, even with people experiencing high levels of burnout. Thus, social support in the form of co-workers appears to buffer the effect of burnout. This supports the fourth aim of the research, and this hypothesis can thus be accepted.

Fifthly, it was hypothesised that demographic variables will predict some aspects of burnout, as measured by the Pines, Aronson and Kafry (1981) Burnout Index. Stepwise multiple regression analysis reveals that tenure is the only demographic variable that predicts physical and emotional exhaustion, and no demographic variable predicts mental exhaustion. This hypothesis is thus rejected.

Finally, it was hypothesised that demographic variables will predict some aspect of job satisfaction, as measured by the Smith, Kendall and Hulin (1969) Job Descriptive Index. Stepwise multiple regression analysis reveals that no demographic variable is successful in predicting this construct. Thus, this hypothesis is rejected.

With regard to the hypotheses of the study, hypotheses 1 - 4 were accepted and hypotheses 5 and 6 were rejected. Thus, the research questions have been answered and the aims of the study achieved.

4.7 STEP 9: LIMITATIONS OF THE RESEARCH

As this research is one of the first to use Pines, Aronson & Kafry's (1981) Burnout Index in South Africa, several limitations exist. The first is that being an American standardised instrument, the available norms are not applicable in the South African context. Norms therefore have to be developed and validated for South African samples, and fire fighters and emergency service workers in particular.

Also, the instrument was administered in English to a sample that did not all have English as a first language. The instrument would need to be translated into both Afrikaans and Zulu, or into the first language of the sample under investigation, and then validated. According to Schaufeli and Van Dierendonck (1993) such analysis is particularly important when translated burnout inventories are applied to other national or cultural settings.

Recently, Afrikaans (Odendal & Van Wyk, 1988); Arabic (Abu-Hilal & Salameh,

1992); Italian (Sirigatti, Stefanile & Menoni, 1988); French (Girault, 1989); German (Enzmann & Kleiber, 1989); Spanish (Gil-Monte & Schaufeli, 1992) and Polish (Schaufeli & Janczur, 1994) versions of Maslach's (1981a) Burnout Inventory have been analysed.

Unfortunately, the number of subjects included in these studies is too small for extensive psychometric evaluations, such as confirmatory factor analysis (Marsh, Balla & McDonald, 1988). This researcher has been unable to find evidence of a translation of the Pines, Aronson and Kafry's (1981) Burnout Index that has construct validity,

A further problem, which is common to all self reports, is that one is relying on the subject's perception of himself or herself. This is a subjective opinion, and in the fire department, where physical fitness is a priority, the respondent could perhaps have been tempted to rate himself more highly than he should have. According to Pines, Aronson and Kafry (1981), the problem with self-reports may be that the results are influenced by such general factors as the honesty of the respondents, or conversely, the respondents' desire to say things in order to put himself or herself in a more favourable light. More objective methods of measuring burnout and job satisfaction need to be investigated

According to Ursprung (1986), more behaviourally based measures of burnout should be sought. Examining patterns of absenteeism, tardiness, substance abuse, response time or productivity at work could be useful in this respect. Ratings by third parties (colleagues or supervisors) could also be useful alternatives.

Perlman and Hartman (1982), suggest the use of a burnout instrument, in combination with other instruments, to allow multiple measures. Some obvious suggestions would include devices pertaining to self-esteem, Type A behaviour and marital satisfaction, besides the job satisfaction measure employed here.

Referring to the physical fitness aspect, one sees that there is no incentive to

achieve an "A" on the evaluation. Additionally, no penalty is imposed if a subject fails a fitness evaluation. The fire department needs to re-evaluate the fitness ratings, as this is a critical aspect of the job. As there is a negative correlation between the physical exhaustion sub-scale and the other burnout sub-scales, results of the fitness test could possibly be used as a predictor of experienced burnout.

Another quantitative factor that is currently not measured is response time to an incident. No measurement is taken, because it is assumed that the response time falls within a four minute specification. This measurement could provide valuable information on performance, as repeated slow response times by certain subjects could be indicative of a potential problem developing, and possibly even be an indicator of burnout.

A problem with the use of the Job Descriptive Index was that this study was unable to use a composite score for job satisfaction, and had to rely on comparisons of sub-scale data. The reason for this is that two items were omitted from the measurement instrument. The first item was "My job is hot" from the construct 'satisfaction with content of work'. This was because of the inherently physically hot nature of the job, as well as possible language connotations. The second item was satisfaction with "profit share" under the "pay" section, as fire fighters do not have this as part of their remuneration package.

Also, because this was a convenience sample, generalisability to other fire departments, and also to other first-line rescue personnel (e.g. police officers and paramedics) may not be possible. A convenience sample is primarily concerned with relationships within the group studied, rather than with the opinions and attitudes of a larger group. The sample used in this kind of research is non-representative. However, lack of generalisability of results can be overcome through use of replicated studies (Lewin, 1979).

4.8 STEP 10: RECOMMENDATIONS

As Grigsby and McKnew (1988) observe, in terms of the extreme toll that burnout has been shown to take on organisations in terms of increased turnover, job performance problems, job dissatisfaction and increased alcohol and drug abuse, companies stand to benefit from an increased understanding of the burnout syndrome amongst its employees. The purpose of this research was to investigate the relationship between burnout and job satisfaction in fire fighters in a local authority, and to begin to search for solutions to burnout in this significant sector of emergency services personnel.

Perlman and Hartman (1982) suggest that many questions remain to be answered if burnout's causes, antecedents, incidence, intensity and correlates, as well as how best to approach its containment and prevention are to be identified.

A definitive model of burnout needs to be developed, as well as a validated measuring instrument for South Africa conditions. The Burnout Index has been proved a valid predictor of job satisfaction sub-scales on the Job Descriptive Index for the group under investigation, but norms need to be developed for other groups, including fire fighters, emergency services personnel, and in fact, any other organisational setting.

Sufficient descriptive data gathered from heterogeneous groups of fire fighters, or emergency services personnel should allow the formation of norms, thus giving end points for making statements about levels of burnout and its intensity. By "anchoring" burnout data, the relative level of burnout in one sample could be determined by comparison to norm groups. These norm groups could be categorised by sex, education level, marital status, etc.

Since the Burnout Index has been validated for the organisation under investigation, it can be used by the Human Resources department to determine levels of burnout experienced by employees at the Fire Department. A specific

cut-off point on the Burnout Index needs to be determined for this organisation, above which suitable intervention strategies will be employed.

Also, do different types of research methodologies yield comparable or conflicting data on burnout? For example, does the interview versus questionnaire method obtain equally valid data on burnout? What is the value of longitudinal research? In what stages of a career are researchers likely to gain the most useful information about preventing burnout? Do certain measurement procedures increase individuals' awareness of and sensitivity to burnout, or help create and perpetuate its existence?

Furthermore, are conceptualisations of burnout held by workers different from the definition presented here? What do staff mean when they use the term burnout, and do different groups in different professions or organisations use the term differently?

Since social support is one of the few known coping mechanisms which can help contain or prevent stress, knowledge of the effects of burnout on friendship and social support is important. Social support research has identified particular forms of support, including attachment, social integration, reassurance of worth, guidance and nurturance (Russell, Altmaier & Van Velzen, 1987).

Researchers need to determine which particular forms are most useful in preventing burnout. Such relationships may be moderated in interesting ways by demographics (e.g. gender, experience, tenure) that elucidate further the support / well being connection. Such research might begin to provide supervisors with knowledge of behaviour to apply in specific situations with subordinates.

Supervisors can provide a strong role model for subordinates, and every effort should be made to strengthen the mentor / mentee relationships that exist. Supervisors could be formally trained in mentoring subordinates, and benefit from acquiring more professional counselling and guidance skills and abilities.

Cassel (1976) advocates the mobilisation of social support as a more feasible direction for intervention, rather than attempting to reduce exposure to environmental stressors - a viewpoint that has persisted and that underlies much of the interest in social support.

It is recommended that the fire department promote the value of the "buddy" system amongst its supervisors and employees, and actively encourage the informal support system structures. Group motivational activities should be strategically implemented, as this supportive relationship may well be the most valuable burnout prevention asset that the fire department possesses. In fact, active fire fighting contains all the elements of a team building exercise, and the fire department could make use of this opportunity and provide formal feedback / debriefing sessions with a professional facilitator.

Research should also investigate whether burnout is a state or trait. It may be that there are some individuals who are likely to burn out in whatever type of organisation or role in which they work (burnout as a state). A percentage of those who burn out may do so because of transitory personal, organisational, system or role traits which are amenable to change.

Research also needs to look at the relationship between education, training and individual expectations of work, with what occurs while on the job (Cherniss, 1980). Education and training can give the employees sufficient knowledge and skills to become competent in their job, and therefore overcome any stress arising from an inability to do the work. It can also give employees realistic expectations of the different aspects of the job as well as career prospects and role expectations.

Research on success or failure of intervention strategies aimed at preventing or containing burnout is needed. Such interventions will be varied and could include training at university level, better and different selection techniques by organisations, orientation programmes for new staff, improving individual's knowledge and expectations about working, increased individual knowledge of how to cope at a personal level and how to function within a complex

organisation, staff development, staff support, role changes, and working with management. This research needs to evaluate intervention at both the organisation / system and individual levels.

Solomon (1986) emphasised pre-trauma preparation, rather than in response to a particular incident, i.e. after the event has already occurred. He emphasised cognitive and affective preparation in handling stress as a resource for responding to emergency situations. Such stress rehearsal and stress inoculation techniques are relevant to the wide spectrum of emergency workers and set a precedent for including adaptive cognitive appraisal techniques in training of emergency workers.

However, while pre-trauma preparation is the ideal, contingency strategies need to exist to cope with trauma that has already occurred. Existing symptoms of burnout may be alleviated by professional counselling. In fact, one local fire department in Gauteng makes use of a professional counsellor to counsel fire fighters suffering from stress and depression, as well as providing a trauma burnout prevention service.

Intervention without evaluation is ongoing and important, but determining optimal strategies of such intervention (its rigorous evaluation) is paramount. Efficiency in the application of organisational development techniques is needed and questions within organisations, such as how strong support networks and flexibility in job functioning can be built in, need to be explored. How to reduce routine boredom is another topic for investigation, as well as how opportunities for individual development can be offered, while diminishing work overload and reinforcing skills for effective stress resolution (Freudenberger, 1989).

A burnout reducing technique that could be utilised here, would be to reduce excessive overtime work. The very nature of the job is extremely demanding, both mentally and physically, and a maximum overtime limit could be used as a coping mechanism.

Also, the shift roster could be examined, and perhaps a more optimal form of shift work established. Shift work is fraught with stress inducing factors, and improving it could seriously contribute to alleviating aggravating influences on the subjects (Murphy, Beaton, Cain & Pike, 1994).

Company structures could also be adjusted to allow for generous time off, in the form of leave and days off. This would allow the subjects time to recover from burnout inducing incidents.

Organisational policies within the fire department such as pay and promotions need to be re-evaluated, as these two factors appear to be contributing significantly towards job dissatisfaction. As discussed previously in 4.4.3, the fire fighter d dissatisfaction with pay may merely be a perception problem, and a reflection of a broader economic decline. Therefore, employees should be surveyed on how improvements could be made to their remuneration packages (without necessarily paying them more). Salary sacrifices and flexible remuneration packages might well be the direction that the fire department should take.

The issue of promotional prospects requires attention. There are only four levels of progression, from induction to retirement, ranging from fire fighter to division commander. Also, because the skills acquired as a fire fighter are only really applicable to that particular occupation, a fire fighter's mobility out of the fire service is limited, which may result in frustration, resentment and job dissatisfaction.

Barber (1991) examined the socio-economic desirability of the privatisation of fire services in South Africa. He points to the productive efficiencies achieved by the two largest private contracted fire services in his investigation. Both of these companies indicated that they could satisfy societal needs across a wider range of activities, at lower cost than their public sector counterparts. He concludes that privatisation is an economically desirable action.

Many of the services previously offered by local authorities are beginning to be privatised (eg. design of fire fighting systems in building and factories) and this may offer a possible career advancement or developmental opportunities. However, privatisation is not extensive enough yet and is more applicable to a long term solution.

In the final analysis, both burnout and job satisfaction have been related to turnover, absenteeism, chronic fatigue, increased use of alcohol and drugs, family and marital problems and numerous other adverse effects. These relationships would suggest that any people-oriented, service delivery system or organisation, such as a fire department, could increase its effectiveness by identifying burnout and instigating preventive and / or remedial programming (Stout & Williams, 1983).

4.9 CHAPTER SUMMARY

This chapter thus concludes the final four steps of the research design. The results were reported, with the specific purpose of integrating them with the aims of the research, both from a theoretical and empirical point of view. Limitations of the research were outlined, and recommendations formulated.

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APPENDIX 1

**THE PINES, ARONSON & KAFRY (1981)
BURNOUT INDEX**

(BI)

How often do you have the following experiences?

Please use the following scale, and answer :

1	2	3	4	5	6	7
Never	Once	Rarely	Sometimes	Often	Usually	Always

- _____ Being tired
- _____ Feeling depressed
- _____ Having a good day
- _____ Being physically exhausted
- _____ Being emotionally exhausted
- _____ Being happy
- _____ Being "wiped out"
- _____ Feeling "burned out"
- _____ Being unhappy
- _____ Feeling rundown
- _____ Feeling trapped
- _____ Feeling worthless
- _____ Being weary
- _____ Being troubled
- _____ Feeling disillusioned and resentful about people
- _____ Feeling weak
- _____ Feeling hopeless
- _____ Feeling rejected
- _____ Feeling optimistic
- _____ Feeling energetic
- _____ Feeling anxious

APPENDIX 2

**THE SMITH, KENDALL & HULIN (1969)
JOB DESCRIPTIVE INDEX**

(JDI)

Please think carefully about the following descriptions and how they relate to your job.

Please answer in the following way:

- Y (Yes) If the item describes the particular aspect of your job
 N (No) If the item does not describe the particular aspect of your job
 ? If you cannot decide

WORK	SUPERVISOR	CO-WORKERS
<input type="checkbox"/> Fascinating	<input type="checkbox"/> Asks my advice	<input type="checkbox"/> Stimulating
<input type="checkbox"/> Routine	<input type="checkbox"/> Hard to please	<input type="checkbox"/> Boring
<input type="checkbox"/> Satisfying	<input type="checkbox"/> Impolite	<input type="checkbox"/> Slow
<input type="checkbox"/> Boring	<input type="checkbox"/> Praises good work	<input type="checkbox"/> Ambitious
<input type="checkbox"/> Good	<input type="checkbox"/> Tactful	<input type="checkbox"/> Stupid
<input type="checkbox"/> Creative	<input type="checkbox"/> Influential	<input type="checkbox"/> Responsible
<input type="checkbox"/> Respected	<input type="checkbox"/> Up-to-date	<input type="checkbox"/> Fast
<input type="checkbox"/> Pleasant	<input type="checkbox"/> Doesn't supervise enough	<input type="checkbox"/> Intelligent
<input type="checkbox"/> Useful	<input type="checkbox"/> Quick tempered	<input type="checkbox"/> Easily make enemies
<input type="checkbox"/> Tiresome	<input type="checkbox"/> Tells me where I stand	<input type="checkbox"/> Talk too much
<input type="checkbox"/> Healthful	<input type="checkbox"/> Annoying	<input type="checkbox"/> Smart
<input type="checkbox"/> Challenging	<input type="checkbox"/> Stubborn	<input type="checkbox"/> Lazy
<input type="checkbox"/> On your feet	<input type="checkbox"/> Knows job well	<input type="checkbox"/> Unpleasant
<input type="checkbox"/> Frustrating	<input type="checkbox"/> Bad	<input type="checkbox"/> No privacy
<input type="checkbox"/> Simple	<input type="checkbox"/> Intelligent	<input type="checkbox"/> Active
<input type="checkbox"/> Endless	<input type="checkbox"/> Leaves me on my own	<input type="checkbox"/> Narrow interests
<input type="checkbox"/> Gives sense of	<input type="checkbox"/> Loyal accomplishment	<input type="checkbox"/> Lazy
<input type="checkbox"/> Around when needed	<input type="checkbox"/> Hard to meet	

PAY

- Income adequate for normal expenses
 Barely live on income
 Bad
 Income provides luxuries
 Insecure
 Less than I deserve
 Highly paid
 Underpaid

PROMOTION

- Good opportunity for advancement
 Opportunity somewhat limited
 Promotion on ability
 Dead-end job
 Good chance for promotion
 Unfair promotion policy
 Infrequent promotions
 Regular promotions
 Fairly good chance for promotion