The effect of organizational change on productivity: a case study of a safety glass manufacturing division within the PG Group.

By

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DECLARATION

This work has not been previously accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Signed ……..

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STATEMENT 1

This dissertation is being submitted in partial fulfilment of the requirements for the degree of Masters in Business Administration.

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This dissertation is the result of my own independent work/investigation, except where otherwise stated.

A bibliography and addendums are appended.

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ABSTRACT

The research problem investigates to what extent the introduction of change has affected employee motivation and job satisfaction with reference to organizational productivity.

For the purpose of this research, two sub problems have been identified. The first sub-problem is to determine the relationship between employee motivation and organisational productivity within the context of organisational change. The second sub-problem is to determine the relationship between job satisfaction and organisational productivity within the context of organisational change.

The introduction of change in this quantitative study of employee perceptions has proven to have negatively effected employee motivation and job satisfaction levels at all three businesses of the Armourplate division. Its effect on productivity has proven to vary, depending on the level of change experienced by employees by site. Where little or no change was experienced by employees on a site, employee perceived no decrease in productivity or even increased levels of productivity. High levels of change on a site resulted in employee perceptions of productivity being lower after change.

This research has shown a positive relationship between motivation and productivity as well as job satisfaction and productivity. It also indicates that these relationships also weaken after change. This suggests that Glass South Africa's senior management should consider a better and more structured change management model. This model should focus more on the human element. When high levels of future organizational change occur, any negative effect on productivity can thereby be avoided. The goal of this business can then be more easily achieved, which is to maximize profit.

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DEDICATION

This dissertation is dedicated my wife Tania, and my sons Dieter and Rolf Laudenberg, for the time sacrificed and also as a challenge to my sons to do even better. *“Vis in Proposito.”*

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LIST OF ABBREVIATIONS:

GSA	GLASS SOUTH AFRICA
CEO	CHIEF EXECUTIVE OFFICE
ISR	INTERNATIONAL SURVEY RESEARCH
MD	MANAGING DIRECTOR
NEDLAC	NATIONAL ECONOMIC DEVELOPMENT AND LABOUR COUNCIL
NPI	NATIONAL PRODUCTIVITY INSTITUTE
PFG	PLATE FLOAT GLASS
PG	PLATE GLASS
PIP	PRODUCTIVITY IMPROVEMENT PROGRAMME

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CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

"It must be considered that there is nothing more difficult to carry out, nor more doubtful of success, nor more dangerous to handle, than to initiate a new order of things" (Kotter and Schlesinger, 1991: 67).

Change has affected most South African businesses during the 1990's (UCT GSB newsletter, 2003). These changes have included, amongst others, legislative developments and the opening of the country's borders. With these changes came recession, short-term focus by management on profitability, re-engineering and downsizing of organisations. South African management values are based on performance, in terms of profit performance, cost reduction and productivity. Research has shown that these management values are not shared by many employees. As a result, McKinsey states, as cited in a UCT GSA newsletter in 2003, that managers are required to embrace a new leadership paradigm (UCT GSB newsletter, 2003) which focuses both on a profit orientated approach and an employee related approach.

Taking the above into consideration, it is important to determine the relationship between employee motivation and job satisfaction within the

context of organisational change and to analyse the contribution thereof to organisational productivity.

The current study aims to create awareness amongst the senior management of GSA Armourplate and the PG Group that future organisational change management should be more sensitive to human factors, as opposed to the current cost reduction approach. The latter must also be viewed in the context of how organisational change has impacted on employee motivation and job satisfaction. Senior management of the GSA Armourplate Division and the PG Group have implemented change for the survival and profitability of the organisation. However, they appear to have a low concern for employees with a high concern for more tangible and immediate cost savings.

The aim of this study is to determine the relationship between employee motivation and job satisfaction, within the context of the organizational change that has occurred between 2001 to 2004, and to analyse the contribution thereof to organisational productivity.

It is hoped that determining whether there is a positive relationship between job satisfaction, motivation and productivity, will create an awareness amongst senior management to increase consideration of the human element when implementing and managing any future change within the organisation. This perception-based study may also highlight shortfalls within the changing organisation, in terms of job

satisfaction and motivation, which could be addressed to improve current employee productivity.

1.2 STATEMENT OF THE RESEARCH PROBLEM

The research investigates the extent to which the introduction of change has affected employee motivation and job satisfaction, with reference to organisational productivity.

1.2.1 Sub-problems

For the purpose of this research, two sub problems have been identified:

(a) Sub-problem One

The first sub-problem is to determine the relationship between employee motivation and organisational productivity within the context of organisational change.

(b) Sub-problem two

The second sub-problem is to determine the relationship between job satisfaction and organisational productivity within the context of organisational change.

1.3 HYPOTHESES

The hypothesis is the statement of the relation between two or more variables, which gives clear implications for testing of these variables. When this testing confirms the proposition, the proposition is then considered true (Vos, Strydom, Fouche and Delport, 2002). The problem statement indicates that the purpose of this study is to determine the relationship between employee motivation and job satisfaction, within the context of organisational change and to analyse the contribution thereof to organisational productivity. Considering the above problem statement, there are two hypotheses that need to be tested:

1.3.1 Hypothesis one

There exists a positive relationship between employee motivation and organisational productivity within the context of organisational change.

1.3.2 Hypothesis two

There is a positive relationship between job satisfaction and organisational productivity within the context of organisational change.

1.4 DEFINITIONS AND CONCEPTUAL CLARIFICATION

Definitions are used to facilitate and to avoid vagueness or ambiguity according to Vos, et al (2002: 34). To facilitate the use of terms used in this research, the following words are defined as follows:

1.4.1 Employee

The definition of an employee is best supplied for this research by the Basic Conditions of Employment Act (No. 75 of 1997) as:

(a) "Any person, excluding an independent contractor, who works for another person or for the State, and who receives, or is to receive, any remuneration; and

Any other person who in any manner assists in carrying on or conducting the business of an employer" (Government Gazette: No. 18491 Vol 390. No. 75 of the Basic Conditions of Employment Act, 1997:8)

1.4.2 Organisation

For the purpose of this research, the term organisation is defined as:

" *A system consciously co-coordinated activities or forces of two or more persons*" Kreitner and Kinicki, (2002: 508) with four common factors: co-ordination of effort, common goal, division of labour and a hierarchy of authority (Kreitner and Kinicki, 2002).

1.4.3 Employee motivation

Theories of motivation suggest that organisations succeed when employees are emotionally involved and believe in what they are doing. The theories also confirm that in successful organisations employees feel that they are making a contribution to the organisation, which brings psychological satisfaction. Employee leaders need to support motivation by recognising that people differ, and so too should rewards. Leadership should build social relationships, communicate effectively and be aware of what motivates individual employees. Most theories on motivation (e.g. Herzberg's Motivation Hygiene Theory, ERG Theory, Mc Clelland's Theory) agree that the individual needs are based on Maslow's Hierarchy of Needs (Biesheuvel, 1984; Linder, 1998; Robbins, 1998; Kreitner and Kinicki, 2002; Neely and Kennerly, 2002; Schultz, Bagraim, Viedge, Werner and Potgieter, 2003 and Stacey, 2003).

1.4.4 Job

Rose (2001: 4) defines the word job as firstly "*work tasks performed*" and secondly "*on the post occupied by the person performing those tasks*."
Core job characteristics are defined by Kreitner and Kinicki (2002)
as skill variety, task identity, task significance, autonomy and feedback.

1.4.5 Job satisfaction

There are five areas of job satisfaction, namely, work, pay, supervision, promotion and fellow employees. Theories on the subject describe job satisfaction as the attitude and response to one's job. As a need is met, a new need begins and needs to be satisfied. Data of recent research shows that job satisfaction influences work behaviour and suggests that productivity and quality production are attained through job satisfaction. It is interesting to note an overall low job satisfaction in South Africa (Biesheuvel, 1984; Rose, 2001; Kreitner and Kinicki, 2002; AON, 2003, and Schultz *et al*., 2003).

1.4.6 Leadership

There are many definitions of leadership. Kreitner and Kinicki (2002: 450) say that this term would be "*Influencing employees to voluntarily pursue*

organizational goals" and *"the ability to influence a group toward the achievement of goals"* (Robbins, 1998: 347). Theories on leadership explain what makes an effective leader, in terms of traits, behaviour and situational influences, relating to task and people (Robbins, 1998).

1.4.7 Organisational change

Robbins (1998: 629) describes change as "*making things different*" and adds that planned change is "*change activities that are intentional and goal oriented.*" External forces, such as demographics, technological improvements, market forces, as well as, social and political issues, create the need for change in organisations. Internal forces can also create the need for change that comes from human resource, as well as, managerial decisions (Kreitner and Kinicki, 2002).

1.4.8 Organisational productivity

For the purpose of this research the conceptual definition to clarify the term productivity is the transfer of inputs into outputs at the lowest cost, and includes technical issues, raw materials, layout and employee job performance. Productivity is directly affected by the economic climate, markets, change, people, rewards, technology and information. The calculation of productivity is a complex issue as it is difficult to get

agreement defining the correct inputs and outputs. Factors that would improve productivity are knowledge, skills, motivation and the environment (Suttermeister, 1976; Lawlor, 1987; Campbell, Campbell & Assoc, 1988; Thomas & Baron, 1994; Dell, 1995; Robbins, 1998; Harrison, 2001; NPI/NEDLAC, 2001).

1.4.9 Job performance

Job performance is defined as ability multiplied by motivation (Suttermeister, 1976). Job performance is a behaviour influenced by motivational processes and actions, including job satisfaction (Kreitner & Kinicki, 2002). Criteria for evaluating job performance are individual task results, employee behaviours and positive individual traits (Robbins, 1998).

1.4.10 Plant

The term plant is defined for the purpose of this research as one business unit, which includes operations, sales and finance structures to support the individual business. In the PG Group, these business units are located in Cape Town, Durban and Springs to form the Armourplate or Toughened safety glass manufacturing division.

1.5 DELIMITATIONS / LIMITATIONS

This study has only been conducted within a single division of the PG group made up of three manufacturing plants and is based on employee perceptions only.

1.6 MOTIVATION FOR THE STUDY

Senior management of the GSA Armourplate Division and PG Group are implementing change for survival and profitability, but it is perceived that they have a low consideration for employees, while having a high consideration for more tangible and immediate cost savings. This may have a negative impact on employee motivation and job satisfaction, thereby having a possible negative impact on the business' productivity. It is therefore important to access the impact of change on productivity.

1.7 BENEFITS OF THE STUDY

The proving of a positive relationship between job satisfaction, motivation and productivity ought to encourage senior management to increase consideration of the human element when implementing and managing any future change within the business. This ought to ensure maximisation of profit and success in future change programmes.

The study will also highlight shortfalls within the changing organisation, in

terms of job satisfaction and motivation, which could be addressed to improve current employee productivity, should the results show a positive relationship between the variables.

1.8 METHODOLOGY

The methodology used to determine the above is a combination of information gained from the literature reviewed, as well as a cross-sectional analytical survey involving employees perceptions with regards to motivation, productivity and job satisfaction, within the context of ongoing organisational change. These variables are measured using the Maslow's hierarchy of needs model as an underlying model (Addendum 3: Matrix). This model has been selected because the review of related literature shows a common underlying theme across all three variables (motivation, job satisfaction and productivity) and its reliability in recent use in research and the success experienced by AON Limited when used in its research (AON, 2003). AON is an international professional services company that is focused on insurance brokerage, risk management, and human capital consulting.

1.9 CHAPTER SUMMARY

This chapter has discussed the importance of this research, in determining the relationship between employee motivation and job satisfaction within the context of organisational change, and to analyse the contribution thereof to organisational productivity. A division of the PG Group, namely GSA Armourplate will be used for this research.

The study aims to create awareness amongst the senior management of GSA Armourplate and the PG Group that future organisational change management should be more sensitive to human factors, as opposed to their current cost reduction approach. On the other hand, it may confirm that the change management approach taken is the correct one.

The research problem and hypotheses were stated, as well as definitions and conceptual clarifications provided for better understanding of the analysis.

The introduction, importance of, and motivation for, the research of this dissertation have been presented in this chapter. The following chapter will review the literature related to the research.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

Four variables which relate to the research problem have been identified as motivation, job satisfaction, productivity and change.

The theories of motivation suggest that organizations succeed when employees are emotionally involved and believe in what they are doing, as well as employees feeling that they are making a contribution to the organization which thereby brings psychological satisfaction (Krietner and Kinicki, 2002; Linder, 1998; Neely *et al.*, 2002; Robbins, 1998; Biesheuvel, 1984; Schultz et al, 2003 and Stacey, 2003).

Data of recent research shows that job satisfaction also influences work behaviour and suggests that productivity and quality production is attained through job satisfaction (AON, 2003; Biesheuvel, 1984; Kreitner and Kinincki 2002; Rose, 2001 and Schultz *et al.* 2003).

Research has indicated that any type of change can be painful to employees and causes stress, which will in turn decrease productivity. Change has affected most South African businesses from the 1994. Values are now based on performance, which research has shown does not seem to be shared by many employees, which managers need to take note of (AON

2003; Neely *et al.*, 2002; Senior, 2002; Swist, 1999).

The above four variables of motivation, job satisfaction, productivity and change variables require more knowledge and understanding to complete the required research. The literature review will focus on an overview of these variables.

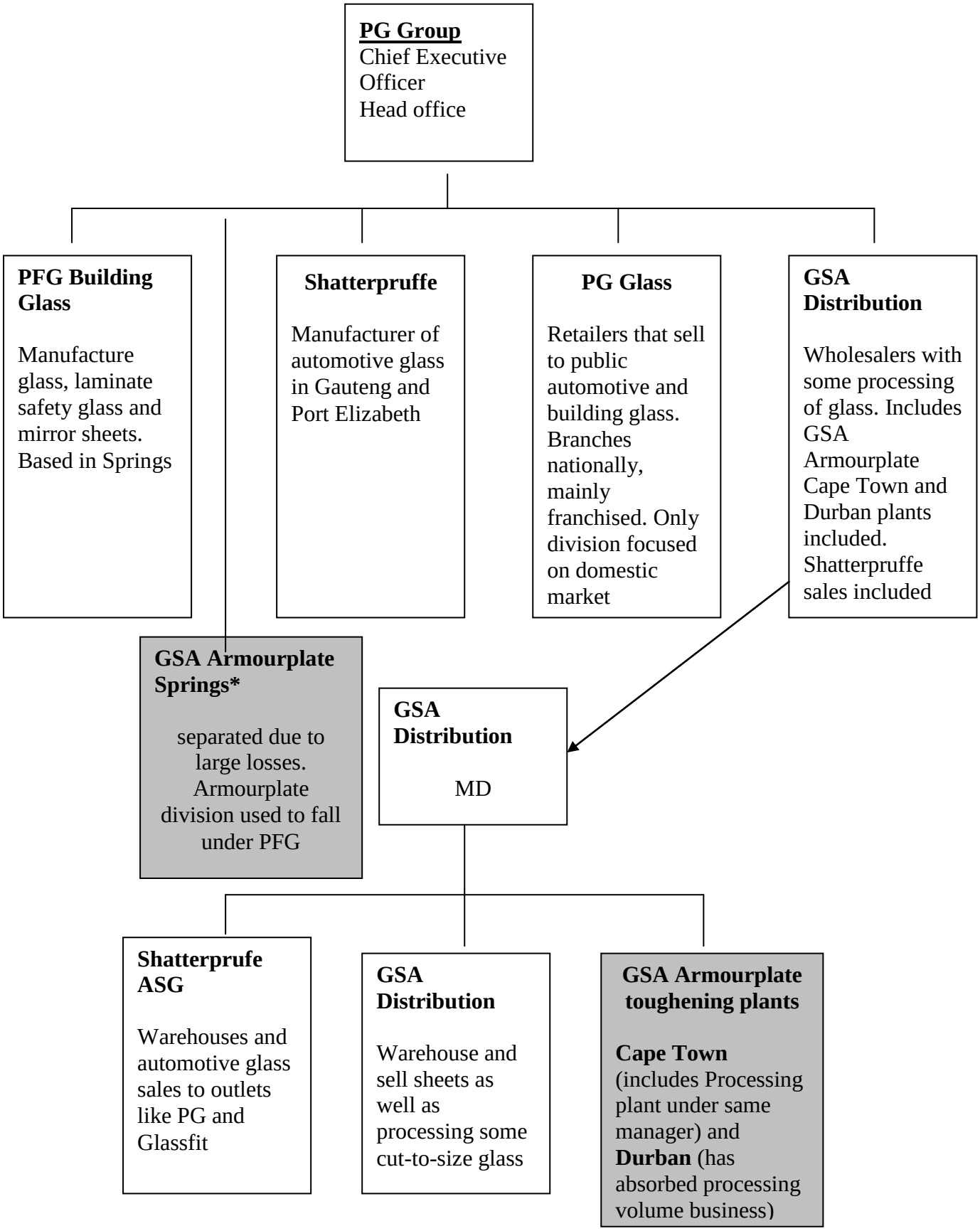
2.1 OVERVIEW OF THE PG GROUP

The PG Group is South Africa's only manufacturer of float and patterned glass, as well as, being the leading manufacturer of automotive glass and the largest distributor and installer of building and automotive glass.

The PG Group generates revenues of close on R2 billion a year, from 11 factories and some 150 outlets and stores in Southern Africa and the United States. The company has approximately 3,000 employees. Exports account for approximately 30 per cent of Group revenue. The group consists of four divisions: PFG, Shatterpuffe, PG Glass and GSA.

PFG Building Glass is the only float glass producer in Southern Africa, producing 140 000 tonnes of float glass a year and 25 000 tonnes of patterned glass. It is also the largest producer of value-added glass products in Southern Africa (Gibson, 2005).

FIGURE 2-1: OVERVIEW OF PG GROUP 2003



Source: General Manager – GSA Armourplate Durban

Shatterprufe produces four million pieces of automotive safety glass a year in four factories. It is the only South African supplier of automotive glass to the seven automotive assembly plants in South Africa. The range covers 1500 windscreen shapes and 5 000 toughened parts. Exports have increased by more than 300 per cent over the past five years. Shatterprufe sells 1.5 million windscreens and 3.5 million toughened automotive parts to its three markets namely the South African assembly plants, the Southern African after market and North American and European exports (Gibson, 2005).

PG Glass is the leader in Southern African automotive and building glass replacement industry, with 143 fitment centres across Southern Africa (Gibson, 2005).

GSA is the largest wholesale supplier of automotive glass, building glass and value-added SmartGlass products in Southern Africa. The GSA Armourplate businesses within GSA, will be analysed in this study. The Armourplate businesses manufacture a safety glass in manufacturing plants located in Springs, Cape Town and Durban.

The PG Group has experienced serious import competition, as well as, reduced export sales due to the stronger Rand-to-Dollar exchange rate relationship particularly during and after 2003. The company has also become privately owned and the new shareholders (all directors of the company) have found it difficult to settle their R400 million Rand loan / interest. Focus shifted in 2003 to cutting operational costs and trading in

more of a domestic market mix of product, after all divisions in export sales performed poorly. The exception was PG Glass, which had a complete domestic product mix.

The culture of the PG Group and GSA Armourplate is aggressive-defensive, with a power normative belief, which is non-participative, structured on the basis of the authority in members positions. *"Members believe they will be rewarded for taking charge, controlling subordinates and, at the same time, being responsive to the demands to the demands of superiors"* Kreitner & Kinicki (2002: 68). Using Senior's scale (Senior, 2002) to define the PG Group and the GSA Division's culture characteristics, the culture characteristics are as follows: high innovation and risk taking, low attention to detail, high outcome orientation, low people orientation, low team orientation, high aggressiveness and low stability.

The business on which this dissertation will be based on is one within the PG group, namely, GSA Armourplate Division.

2.3 BACKGROUND TO CHANGE WITHIN THE PG GROUP

In early 2001 a CEO took over the PG group and introduced a new strategy supporting radical change. Senior management decided to physically combine the Armourplate toughened plants in Cape Town, Gauteng and Durban which manufacture safety glass, together with the GSA Glass

Merchant glass business, which are raw cut-to-size processing plants. This was apparently done to utilise equipment and skills better, while reducing costs and maximising profits. Historically it was believed by senior management that the processing businesses were problematic businesses that lost money. There was no consultation regarding this with Armourplate Toughening plant management. An announcement was made by the GSA Managing Director (MD) in January 2003 that the processing businesses would merge with the GSA Armourplate Toughening plants to capitalise on the perceived synergies of these businesses. A new director was appointed to manage the three Armourplate sites. The Armourplate managers now managed their safety glass manufacturing plants, as well as, separate processing businesses.

Following the enormous losses the combined Springs Armourplate plant incurred over the next few months, the GSA Board of Directors became concerned that their ideas of combining toughened and raw cut-to-size businesses may not work out at the two coastal sites. It was then decided to alter course: the physical mergers that the directors had planned would not continue at the coastal plants and it was decided to restructure the Armourplate Springs plant again.

The GSA Directors and the Durban Manager looked at restructuring the Durban raw glass operations. The CEO and boards of PG and GSA accepted a Durban restructuring proposal, and retrenchment procedures began in September 2003. Five processing employees were retrenched.

High volume processing business and the required employees were also introduced into the Armourplate Safety glass manufacturing plant.

Fifty-six Springs Armourplate plant employees at all levels were also retrenched October 2003 in an effort to save costs. Cape Town operations later also retrenched employees at their processing plant. By March 2004, it was evident that the Durban Armourplate plant could not handle the extra processing work. Durban Armourplate reshuffled staff and processing business to other local GSA operations. By April 2004 both the Springs and Durban Armourplate plans reverted to making only safety glass. Cape Town still had processing, but this was located separately from the Armourplate Safety manufacturing plant and performing poorly. Employees at all sites became concerned about the changes and their future.

The Rand strengthened and negatively affected South African manufacturers, many of whom were exporting. Announcements were made by PG Group senior management on 25 November 2003 to restructure and to significantly reduce costs within the PG Group in 2004 (Addendum 4, Brief : R. Curle)

The manufacturing coastal Armourplate plants in Cape Town and Durban merged with the PG Group's GSA Distribution Division.

The November 2003 PG Group restructuring announcement was concluded by the CEO of the PG Group as follows: "*Unfortunately virtually all our corporate employees will be affected in the change, necessitating significant*

changes to our working patterns and eliminating non-core functions from our business. The Group remains in a strong market position both in all its current chosen markets and we are confident that the reorganisation, flattening of the structure ad the rationalisation of services will bring considerable benefits to the company and that the change will stimulate our people." Addendum 4, Brief : Jennings (2003: 2).

Employees became worried about the change and its impact on their jobs while senior management of the PG Group implemented change for the survival and profitability of the organisation. At the same time, senior management appear to have low concern for employees while having a high concern for more tangible and immediate cost savings. Before the enormous restructuring and change, Springs was known by all as an organization with low motivation levels. Motivation levels in Durban and Cape Town have always been perceived to be good according to Armourplate management.

Considering the above, it would be of great importance to the company to understand to what extent the introduction of all the above change has affected employee motivation and job satisfaction, with reference to organisational productivity. This can be measured through research of employee perceptions at the GSA Armourplate plants.

2.4 LITERATURE REVIEW BODY HEADINGS

- **Employee motivation** – definitions theories of motivation will be reviewed.
- **Job satisfaction** – definitions theories of job satisfaction will be reviewed.
- **Organisational productivity** – definitions theories of organizational productivity will be reviewed.
- **Organisational change** – definitions theories of organizational change will be reviewed.
- **Leadership style** – definitions theories of leadership will be reviewed.

2.4.1 Employee motivation

Employee motivation will be reviewed, analyzing various definitions, theories and models of motivation.

(a) Introduction

Linder (1998:3) claims that there was a time when employees were seen as simply an input into production for outputs of goods and services. The Hawthorne studies by Elton Mayo found that employees are not motivated to be productive by money alone and that employee behaviour is linked to

attitude. The Hawthorne studies began the human relations approach to management, where the needs and motivation of employees becomes a priority focus for managers.

Linder (1998: 3) lists ten important motivating factors as: job security, sympathetic help with personal problems, personal loyalty of employees, interesting work, good working conditions, tactful discipline, good wages, promotions and growth in the organisation, feeling of being in on things and full appreciation of work done. It is interesting to note what Linder (1998) uses Maslow's Hierarchy of Needs theory and adds Herzbergs Motivation-Hygiene theory to determine characteristics required to research motivation (Linder, 1998: 3).

(b) Definition

Motivation, derived from the Latin word "*movere*" which means to move (Kreitner and Kinicki, 2002: 176)

"*Motivation is the result of the interaction of the individual and the situation*" (Robbins, 1998: 168). Robbins (1998: 168) further defines motivation as: "*the willingness to exert high levels of effort toward organisational goals, conditioned by the effort's ability to satisfy some individual need*".

Kreitner and Kinicki (2002: 176) describe motivation as, *"those psychological processes that cause the arousal, direction, and persistence of voluntary actions that are goal directed. Managers need to understand these psychological processes if they are to successfully guide employees toward accomplishing organisational objectives."* Linder (1998: 2) describes motivation as, *"the inner force that drives individuals to accomplish personal and organizational goals"*.

The basic motivation behaviour sequence is defined as follows by Nadler and Lawlor (1989: 7):

A person's motivation is a function of:

- Effort to performance expectations,
- Performance to outcome expectations, and
- Perceived valence of outcomes.

(c) Historic overview and background on employee motivation

Neely, Adams and Kennerley (2002: 253) quote Akito Morita, company founder of Sony, who reminds one of the importance of employees in a business: *"The investor and the employee are in the same position, but sometimes the employee is more important, because he will be there a long time whereas an investor will often get in and out on a whim in order to make profit. The worker's mission is to contribute to the company's welfare, and his*

own, every day." He also states that when discussing the importance of employees in an organisation, *"They are involved in enacting corporate strategies (and they should help to develop them as well); they operate and interact with the organisation's essential business processes; and they represent a significant component of it's capabilities development too"* Neely, Adams and Kennerley (2002: 253)

Linder (1998: 2) reminds one why one needs motivated employees: *"The answer is survival. Motivated employees are needed in our rapidly changing workplaces. Motivated employees help organisations survive. Motivated employees are productive."* Linder (1998) points out that managers need to know what makes employees motivated to be effective themselves and that motivation is complex to the capricious nature of what motivates employees.

"The underlying assumption is that organizations succeed when individuals are motivated to perform, as individuals" Stacey (2003: 67). One can deduce that it is important to understand employee motivation through application of the basic motivation concepts.

(i) Maslow's Heirachy of Needs

Within every human being are five needs. Firstly, lower order (externally satisfied), physiological needs, then safety needs, followed by higher order

(internally satisfied) social needs, esteem needs and finally self- actualisation needs Kreitner and Kinicki (2002: 180).

As each need becomes satisfied, the next need becomes the dominant need. Although no need is ever fully met, satisfaction of a need reduces motivation. Therefore, to motivate a person one needs to understand which need level the person is on and focus on satisfying the five needs above Kreitner and Kinicki (2002: 180).

Linder's (1998:5) research on employees proved in ranking order that motivating factors were: Interesting work, good wages, full appreciation of work done, job-security, good working conditions, promotions and growth in the organisation, feeling of being in on things, personal loyalty to employees, tactful discipline and sympathetic help with problems. These factors are contrary to Maslow's studies that lower level motivational factors need to be met before moving to the next level (Linder, 1998:5).

Maslow's theory has been recently used worldwide by AON to identify characteristics for commitment research. Using Maslow's model, Schultz et al. (2003) relate issues to the South African workforce as follows:

- Self-actualisation – challenging work, autonomy, promotion opportunities,
- Opportunities for creativity,
- Esteem – prestigious jobs, merit based pay, merit based promotions,

- Social – work team, social functions, company sports,
- Safety – medical cover, pension plan, disability insurance, safe working conditions, and
- Physiological – attractive pay, company cafeteria, subsidies.

AON uses maslow's hierarchy of needs to confirm worker commitment, which is another term for motivation. Questions revolve around work life, growth, affiliation, rewards, safety/ security (AON, 2003).

Further theories on employee motivation follow.

(ii) Theory X and Theory Y

The contrasting assumptions were made by McGregor. Theory X is pessimistic and a traditional view about employees by managers while Theory Y is a more modern and positive assumption about employees Robbins (1998:170).

McGregor's perspective of two types of employees

1. Theory X assumes employees do not like work, avoid responsibility, are lazy and need direction to perform.
2. Theory Y assumes that employees like to work, look for responsibility and can be directed Kreitner and Kinicki (2002: 14).

In an organisation like the GSA Armourplate division there would probably be a mixture of both theories.

(iii) Motivation-hygiene theory

Herzberg's theory proposes that intrinsic factors such as work, responsibility, achievement, advancement, growth and recognition are related to job satisfaction and linked to the employees themselves. This theory also proposes that when employees are dissatisfied, they look at the extrinsic factors like the company's working conditions, management, policies, administration and interpersonal relations for the cause of dissatisfaction Kreitner and Kinicki (2002: 187).

Stacey (2003) points out that Herzberg argued that people are motivated to work by extrinsic factors such as money and intrinsic factors such as recognition and achievement and that intrinsic motivation is the more powerful of the motivators.

(iv) The ERG theory

The ERG theory was developed from Maslow's need hierarchy and focuses on three core needs: existence, relatedness and growth. What differs to Maslow's theory is that more than one need may be an issue at any one time

and if a person is unable to satisfy a higher level need, the lower level need desire increases Robins (1998: 174). Social needs will come before physiological requirements for many GSA Armourplate employees.

(v) McClelland's theory of needs

McClelland proposes that achievement; power and affiliation are three important needs that help explain motivation of people. Kreitner and Kinicki (2002: 182)

(vi) Cognitive evaluation theory

Extrinsic rewards such as pay for work effort that had been intrinsically rewarded due to pleasure of job, would decrease the level of motivation Senior (1998: 178). This would be true of the promotion of the coastal managers to take more responsibility with increased responsibility in difficult circumstances.

(vii) Skinner's reinforcement theory

Reinforcers condition behaviour. Behaviour is a function of its consequences. Positive reinforcement like rewards by leaders, avoidance learning and

punishment condition the behaviour of employees Kreitner and Kinicki (2002: 261)

(viii) Adam's equity theory

Employees compare job inputs and the job outcomes. When employees make this comparison with other employees that they work with, the employees will try to equalise Robbins (1998 : 174).

(ix) Vroom's expectancy theory

This theory is based on the assumption that the tendency of a person is to act in a certain way, depending on the attractiveness of the outcome and the strength of the expectation Kreitner and Kinicki (2002: 212).

(x) Conclusion on the theories of motivation

Stacey (2003: 66) considers the theories and concludes that: *" What all these studies point to is this. An organisation succeeds when its people, as individuals, are emotionally engaged in some way, when they believe in what their group and their organisation are doing, and when the contribution they*

make to this organisational activity brings psychological satisfaction of some kind, something more than simple basic rewards."

(c) Pitfalls of employee motivation

It is assumed that satisfying employee needs leads to increased motivation. However, Suttermeister (1976: 46) claims studies show the following relationships also exist between needs and motivation:

TABLE 2-1: JOB SATISFACTION RELATIONSHIP TO MOTIVATION.

High Need Satisfaction – High motivation
Low Need Satisfaction – Low Motivation
High Need Satisfaction – Low motivation
Low need satisfaction – High motivation

Source: Suttermeister, R.A. 1976. People and Productivity. 3rd ed. New York: McGraw-Hill Book.

Biesheuvel (1984) states that motivation can only be studied in the behaviour of individuals in total situations, and states that when one acts, one does so in response to a variety of circumstances and when these change, ones motivation may change.

Kreitner and Kinicki (2002) discuss the findings on Maslow's theory and state results from this theory are difficult to interpret, however, the theory remains popular.

NetMBA (2004: 2) points out that the critics of Herzberg's theory argue it is natural for people to take credit for satisfaction and blame dissatisfaction on external factors. It is also said that job satisfaction does not necessarily mean high levels of motivation or productivity.

(d) Employee motivation in the workplace

It is important at this point to define the difference between motivation and job satisfaction, which Biesheuvel (1984: 37) explains: *"Job satisfaction is the liking for the job while motivation is the effort to spend on a job"*. He states, however, that these are both related to each other.

(e) Motivation in South Africa

Markinor, a South African marketing and research company carried out a Global Employee Relationship survey of 2001, which documents the overall commitment of employees in South Africa (Sunday Times, 2001).

Despite negative perceptions, Brauer, (Sunday Times, 2001), claims employees would stay with their company, stretch beyond expectations, perform work better and recommend their company.

Factors that influence employee commitment to their job in descending order of influence were fairness at work, reputation of the company, concern for employees, trust in employees, day-to-day satisfaction, job definition, sense of achievement, work resources, communication, ideas appreciated and union attitude (Sunday Times, 2001).

Priorities for organisations were trust in employees, concern for employees and fairness at work. Markinor also showed strengths to be capitalized on would be the reputation of the company, day-to-day satisfaction and clear job descriptions (Markinor, 2001).

Truly loyal employees averaged 53 per cent according to Markinor's 2001 survey. 26 per cent of the total sample were high risk and a large percentage of these were under 25 years of age causing concern (Markinor, 2001).

Brauer, explains that: *"Employee commitment is a critical business measure, a powerful tool that can enable companies to function optimally and consistently measure their ability to retain their intangible assets. Companies that place workers at the core of their strategies produce higher long-term returns to shareholders than do their industry peers"* (Markinor, 2001: 2).

International Survey Research (ISR) noted after 2001 that employee commitment in South Africa was just over the global average at 68 per cent compared with the U.S. and France at 67 per cent. South Africa scored badly on job insecurity, in terms of employees concerns of being laid off at 51per

cent in comparison to world figure of 32 per cent. ISR also identified four groupings of employees: engaged, cohabiting, separated (trapped due to finance and lack of alternatives) and divorced (employees with a foot out the door seeking alternative employment) employees. South African employees fall into the last two categories (Sunday Times, 2002 a).

Using commitment as an indication of motivation, the AON 2003 commitment survey shows employees under thirty years of age have the lowest levels of commitment, while employees over 50's have the highest levels. Females had higher levels of commitment than males, while Black workers were the weakest link to the organisation in terms of race group and commitment and represented an *"at risk category".* Management and sales have a higher commitment than other job levels. Manufacturing shows high levels of commitment compared to communications, transport and the IT industry sectors. Union members have higher levels of commitment in office jobs, but non-union members show higher levels of commitment in hourly paid jobs (AON, 2003).

AON (2003) also used Maslow's Hierarchy of needs to monitor commitment or motivation levels. Rewards received the highest failure rate of 32 per cent, followed by affiliation (23 per cent), growth (22 per cent), safety and security (21 per cent) and lastly work / life harmony (16 per cent).

2.4.2 Job satisfaction

Job satisfaction will be reviewed by analysing the various definitions, theories and models of job satisfaction.

(a) Introduction

Rose (2001) notes the effects of job satisfaction on individual output and productivity, which would also result in a more content labour force less concerned with pay and less inclined to unionise. Unfortunately, the link between job satisfaction and productivity has only recently been realised.

Biesheuvel (1984:38) claims satisfaction is a consequence of successful performance. Shultz, *et al* (2003) quote the Job Descriptive Index (JDI) and note five specific areas of satisfaction namely: work, pay, supervision, promotion and people worked with.

(b) Definition

Kreitner and Kinicki (2002: 193) define job satisfaction as *"…an affective or emotional response to one's job."*

Robbins (1998: 25) explains job satisfaction as *"a general attitude towards one's job; the difference between the amount of rewards workers receive and the amount they believe they should receive."*

(c) Historic overview and background

It is important to consider the theories of job satisfaction, which revolve around employees, their work, rewards, management and pay.

(i) Equity theory

The Equity theory claims satisfaction is dependant on equity in ratio of inputs to outputs. Inputs in terms of ability and education, outputs in terms of pay, rewards etc. Inputs in work for the outputs of pay Robbins (1998 : 182).

(ii) Social influence hypothesis

The Social influence hypothesis states employee satisfaction is influenced by perception of other people's attitudes in the same or similar jobs. To explain further, this means that if an employee works around negative employees, then he / she will become negative too Kreitner and Kinicki (2002: 420).

(iii) Opponent process theory

According to Landy and Conte (McGraw-Hill, 2006), opponent process theory claims satisfaction changes with time while the job stays the same, and that equilibrium forces act to keep an emotional neutral

(iv) Work adjustment

According to Dawis and Lofquist (VPR, 2006), work adjustment is the calculation of the probability of an employee remaining in the job due to employee satisfaction and employer satisfaction with the performance of the employee in the job.

Job characteristics that were found to be important to employees in a investigation into measures of job satisfaction identified six variables (Clark, 1998: 3):

- Pay
- Hours of work,
- Future prospects
- Difficulty of the job
- Job content
- Interpersonal relationships

The study showed that monetary rewards were not as important as job security, job interest, promotion opportunities and autonomy. The survey also identified older people as more satisfied and cared more concerned with job security. Dissatisfied workers would be less likely to stay in their jobs and be productive. Women also attach less importance to pay than men and respond more to flexible working hours and social aspects of the job (Clark, 1998).

(v) Value discrepancy or needs fulfillment theory

Value discrepancy or needs fulfillment theory states that satisfaction depends firstly on the importance of the job and then the discrepancy between how much employee satisfaction is expected and received Kreitner and Kinicki (2002: 195).

(d) Background to job satisfaction

Individual, group and organisation factors that constitute job satisfaction, are:

- **Work itself** – linked closely to job satisfaction and work that is interesting as opposed to monotonous / repetitive. The Job Characteristics model lists the characteristics that affect job

satisfaction as skills variety, task identity, task significance, autonomy and feedback

- **Compensation** – employees paid more are more satisfied and less likely to leave. Incentives, rewards, benefits and perks also affect satisfaction. Employees are satisfied when pay meets, or is more than, the standard pay.

- **Supervisory style** – satisfaction is based on employee expectations and how the supervisor acts (Green, Ross and Weltz ,1999). Leader behaviour affects satisfaction in terms of the nature of work. If work is clear and unambiguous, a considerate leader is preferred. If work is not clear, a leader providing more task structure is required by employees. Supervisor's organizational power and position also affects employee satisfaction.

Characteristics used as measures of job satisfaction, according to Leavitt, Ponay and Boje (1989) are : supervision, kind of work, amount of work, co-workers, working conditions, pay, career and security and company identity.

(e) Pitfalls of job satisfaction

According to Green, Ross and Weltz, (1999):

- Research shows a weak relationship between job satisfaction and productivity/ performance.
- One hypothesis is that satisfaction does not bring about productivity but that productivity creates job satisfaction.
- Satisfaction and performance are positively correlated if performance is considered instrumental to attain rewards and rewards are seen to be fair.
- It is assumed job dissatisfaction is linked to employee turnover and absenteeism.

Bakatsa and Lea (2000) deduced from their research on job satisfaction in voluntary workers and effects on age and motivation, that the importance of the job itself, as well as, the contract to supply competence for rewards, came before supervisory skills, workplace involvement, personnel management techniques or self-actualisation.

According to research done by Biesheuvel (1984: 35), satisfaction is related to productivity in some cases but not in others.

Maslow, quoted by Leavitt, Ponay and Boje (1989: 33) noted that *"if one need is satisfied another emerges,"* and that man is a wanting animal: this

infers that job satisfaction, productivity and motivation will lower as needs are met.

(f) Job satisfaction in the workplace

Biesheuvel (1984) points out that job satisfaction plays its role mainly in the dynamics of motivating for performance and does not initiate the process. It can also be of value as a state of mind related to the job, an index of good labour relations and morale which can pay off in loyalty, freedom from conflict, low turnover and absenteeism rates. He notes that the indirect benefits to productivity of satisfaction in this form could be considerable.

Satisfaction and productivity are related when individual productivity is perceived as a way of reaching certain goals that are highly valued and therefore satisfying (Biesheuvel, 1984: 235). Under other conditions, the author warns there may be a negative relationship between productivity and job satisfaction, in line with the expectancy / valency theory. Employees can find and create job satisfaction by: knowing why they were hired, knowing how they fit in; learning to communicate in their environment; listing their achievements, reviewing their work, changing jobs or professions.

Theoretical research according to Leavitt, Ponay and Boje (1989) suggests that among the main factor contributing to job satisfaction is the extent to which the job meets personal needs and social evaluation criteria. They

continue that *"Recent research has posed a significant problem for those who see job satisfaction as significant for mental health because of the findings that people with low expectations of need fulfillment can be as satisfied as those with high expectation levels. Regardless of the factors influencing its level, there is strong evidence to suggest that job satisfaction influences significant types of work behaviour".*

Research done by Maister (2002) has proved employee satisfaction is linked to the company's financial performance, and claims empirical evidence is overwhelming that employees attitudes are directly linked to financial success.

(g) Job satisfaction in South Africa

The Sunday Times (2002 b), claims that 66 per cent of South African employees are unhappy at work or in their careers. Results were as follows: Creative employees could not deliver due to lack of trust in the workplace. Sixty per cent of respondents said they could not express their creativity at work. Forty per cent said they were depressed. Sixty nine per cent felt they were not living their passion or fulfilling their life's mission. Fifty four percent felt realising their full potential was most important in terms of making work meaningful, followed by interesting work (forty three per cent), being innovative (thirty eight per cent) and only then making money (thirty six per cent).

This Sunday Times (2002 b) research confirmed that, *"the happier people are at work the more successful they will be in their work and the higher their productivity will be. This equates to an increase in the productivity and the success of the company."* The article ends by asking why companies do not address the problem of success at the level of their greatest asset, their employees, and in having a workforce that is motivated in their jobs? According to the 2003 Employee Loyalty Report (Sunday Times, 2003 a), the five drivers for South African employees are: care and concern, fairness at work, communication, accomplishment and trust.

Research done by AON (2003: 49) shows employees want secure jobs, fair labour practice, HIV education, as well as, medication needed for employees, pay and benefits packages that meet their needs, wage gap reductions. This falls within the lower levels of Maslow's needs model. Once these are met, AON (2003) claim organisations can address higher level needs and restore pride in organisations to retain employees, grow skills through training and support from managers and co-workers to balance work and personal needs. South African companies have addressed the needs of employees fairly well according to AON's survey with the exception of the HIV/ Aids issue, rewards training, benefits and wage gap.

As an indication of job satisfaction in South Africa one can consider AON's 2003 Commitment Survey on Retention. Results showed most people are not actively looking for a new job, however fewer than 4 out of 10 would resist

a better job. Fifty-six percent intend to stay with their current employer for the next few years, while seventeen percent do not intend to stay. Only thirty-four percent would remain if offered a similar job with slightly higher pay elsewhere indicating an overall low job satisfaction in South Africa (AON, 2003: 11).

(h) Job satisfaction in GSA

Bediako's (2002) impact study of downsizing health care services paper in Leadership Health services identified from the results of a study that downsizing had a negative connotation for employees. Downsizing created shortage of staff, increased workload, increased absenteeism, high turnover, deterioration of teamwork, distrust of management. The reaction of fear and mistrust of management were identified, and areas of workload, job security and commitment were seen as causes of high job dissatisfaction. The perception of employees is that this is very much the case in the GSA toughening plant in Springs operation and could be present (to a far lesser extent) in the Durban and Cape Town plants, where there was less change experienced by employees in terms of downsizing. Badiako (2002) also suggests a strong correlation between increased workload and decreased levels of job satisfaction. With the large retrenchments at the Springs plant, this is probable too for Springs. Downsizing was also shown to have affected communication, trust, promotion and job enrichment. Badiako's (2002) summary states that: *"At no other time in history has effective use of limited*

resources by management been more critical to business success. All evidence points to the fact that the quickest way to realize increased productivity and performance following downsizing lies in the organization's ability to manage the process of downsizing effectively, and give, very careful consideration to the human dimension" (Badiako, 2002: 4).

2.4.3 Organisational productivity

Organizational productivity will be reviewed by analyzing various definitions, theories and models of organisational productivity.

(a) Introduction

Trying to survive in a competitive world creates conditions for the need for improved productivity. Lawlor (1987) provided five reasons why productivity requires serious and continuous attention:

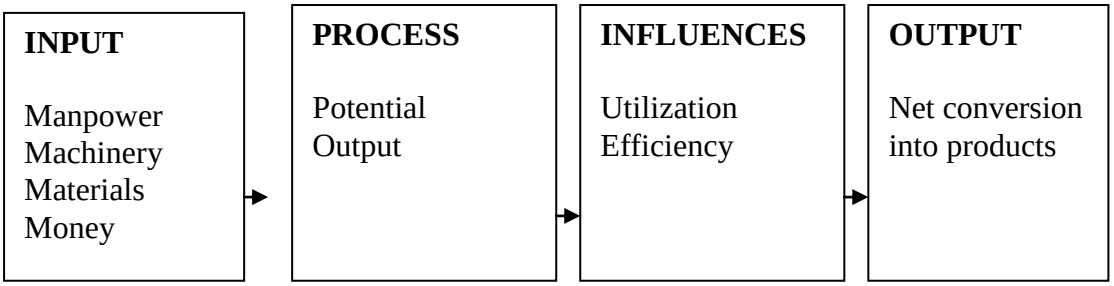
- Competitive markets require the right balance of price, quality and delivery,
- Industrialised countries need to compete with new low cost competitors or discover new designs,
- The need to generate sufficient income or wealth using limited resources,

- An appropriate organizational infrastructure requires income to support it, and
- Effects of inflation, which affects individuals, groups and organizations alike.

Halse and Humphrey (1986: 19) state there are two factors affecting productivity: physical and psychological factors.

Physical factors affecting productivity start with inputs of machine, money, materials and labour and end with the outputs or products as follows:

FIGURE 2-2: PHYSICAL FACTORS AFFECTING PRODUCTIVITY.



Source: Halse, F., Humphrey, J. 1986. Profit from Productivity. Cape Town: Juta.

Psychological factors that affect productivity are employee motivation and employee demotivators

2.4.3.2 Definition of Productivity

Productivity, according to Suttermeister (1976: 6), *"…depends on technical issues of technical development, raw materials, job layout and methods as well as the human factors such as employee job performance."* Job performance is ability multiplied by motivation (Suttermeister, 1976).

Robbins (1998) states that an organisation is productive if it achieves its goals and does so by transferring inputs to outputs at the lowest possible cost. Robins (1998) also sates that productivity implies a concern for both effectiveness and efficiency. Effectiveness being the achievement of goals and efficiency being the ratio of effective output to the input required.

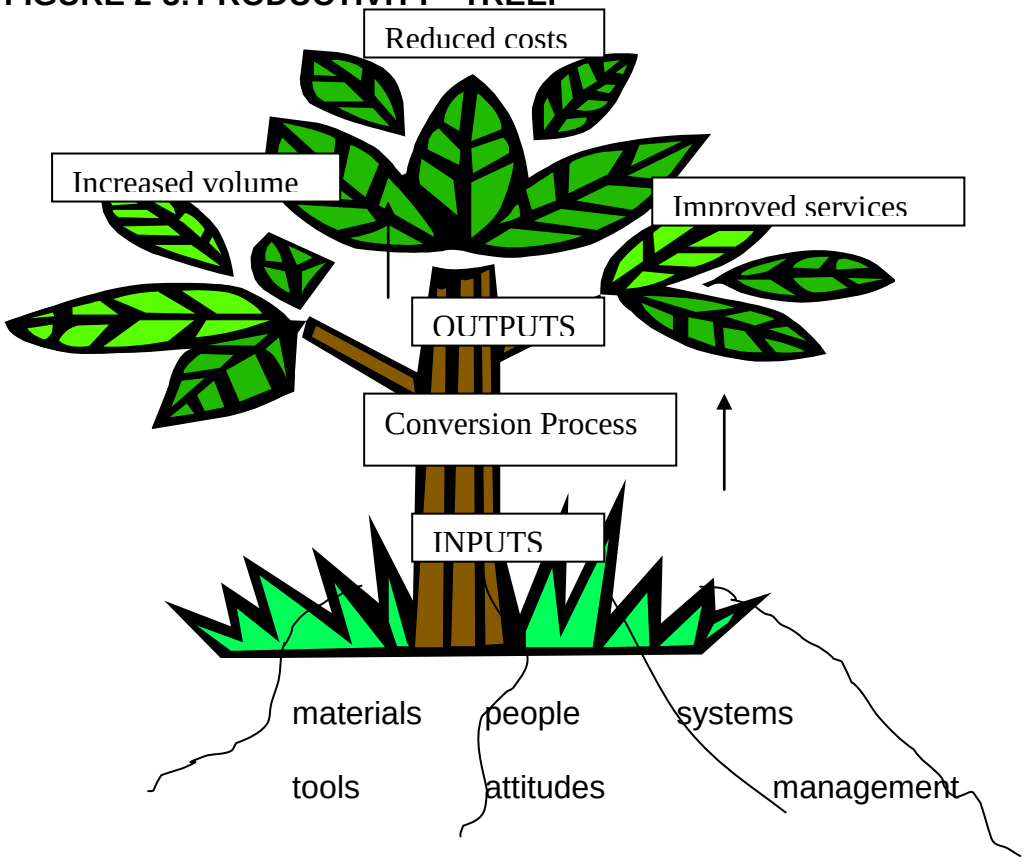
2.4.3.3. Historic overview of productivity

The concept of productivity has existed for a long time and the idea has many different applications. Using Thomas and Baron's (1994: 2) basic definition of output divided by input, requires units of input be measured. They claim that early applications of productivity measurement addressed simple repetitive jobs of short duration, which included the well-known time and motion and stopwatch studies. These techniques were designed to measure frequent actions one could easily observe and count. These techniques remain adequate in manufacturing jobs but were not suited to measure white collar workers as their work was not simple and repetitive.

(d) Background on organizational productivity

Accel-Team. com (2003 a: 1) put forward a Productivity Conceptual Model in the form of a “productivity tree” to define productivity:

FIGURE 2-3: PRODUCTIVITY TREE.



Source: Accel-Team.com. Employee Motivation, the Organizational Environment and Productivity 2003 a http://www.accelteam.com/productivity/productivity_01_what.html

Dell (1995) uses Maslow's hierarchy of needs and links this model to the ten qualities employees want from their job:

- The basic need of survival identifies that employees need to work for an efficient manager as well as for employees to think for oneself,
- The next level of security is where employees need to see the result of their work and that the work is interesting and long term,
- The next level is belonging. Employees need to be listened to and be informed,
- The fourth level is prestige. Here employees require respect and recognition, and
- At the last level of self-fulfillment, employees need challenge in their jobs and skills development.

Dell (1995) claims that the above will encourage both motivation and increase productivity.

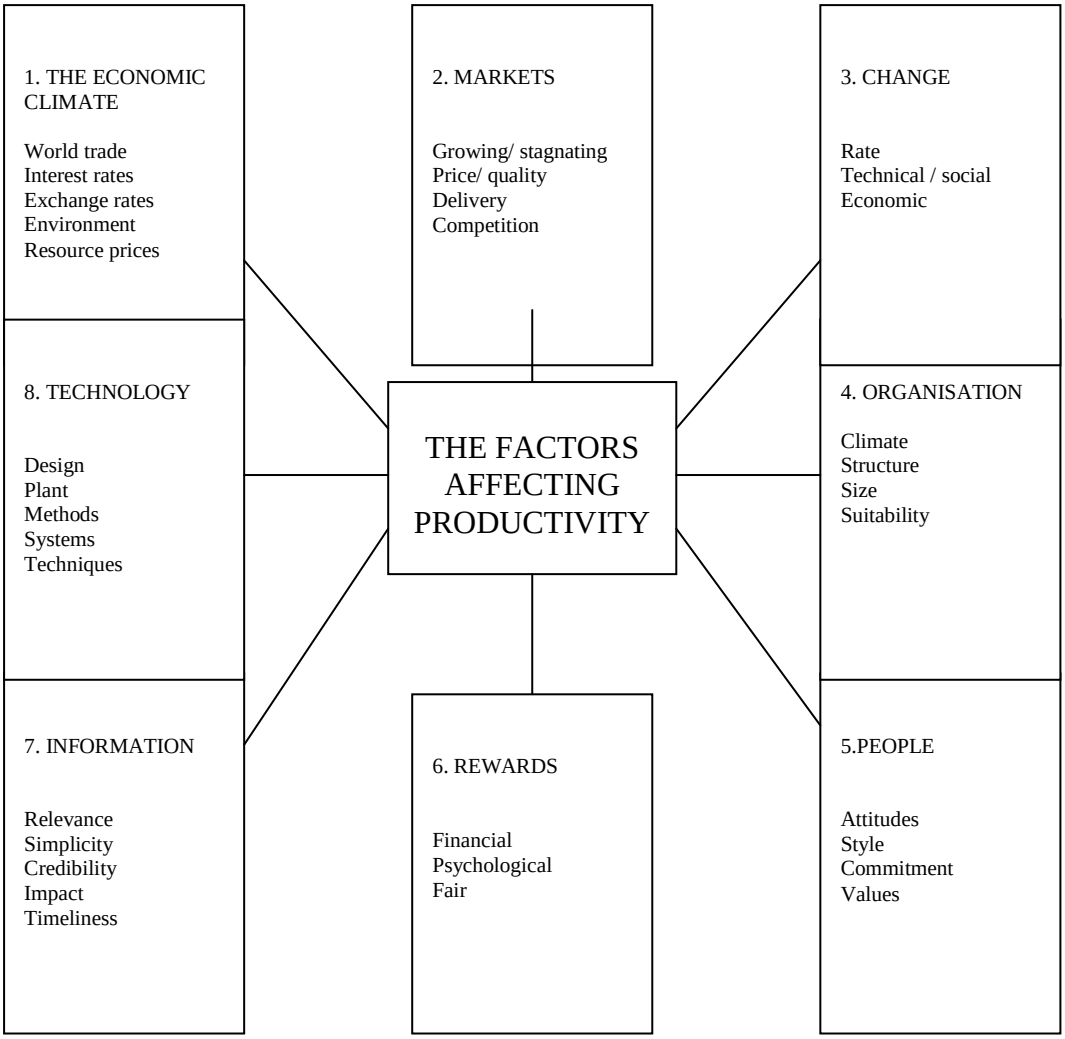
Lawlor (1987: 24) describes the productivity issue as a complex one and narrows the issue down to eight factors that have the most significant bearing on productivity:

- The economic climate: includes world trade, interest and exchange rate fluctuations and price of raw materials and energy,
- The markets: these in growth and stagnation, where one finds the right balance of price, quality and delivery needed for survival,
- The change: the rate of technical, social and economic change that needs to be understood and managed,

- The organizations: climate and structure needs to be created to enable employees to adjust to external rates of change and meet the new standards of productivity,
- The people: the attitudes, values and beliefs of employees need to be respected if there is to be a commitment to change combined with the achievements of new standards of performance,
- The rewards: performance improvements need to be rewarded financially and psychologically,
- The information: productivity improvements depend upon a good information system, which must be available, relevant, simple and credible and have an impact on employees, and
- The technology: the most recent technology will be worthless if the previous seven factors are not considered. Technology must consider design, methods, systems and techniques.

The above is also represented diagrammatically by Lawlor (1987):

FIGURE 2-4: FOCUSING PRODUCTIVITY – FACTORS AFFECTING



Source : Lawlor, A. 1987. Productivity Improvement Manual. Aldershot: Gower.

Notes:

- Factors 1,2 and 3 are external and tend to be regarded as uncontrollable variables
- Factors 4 to 8 are internal variables and should therefore be within the control of the organization (Lawlor, 1987: 21)

These eight factors are important to the dissertation in terms of recognising variables that can be used to identify the main factors influencing current performance. Lawlor (1987) has used the above eight factors in a survey, which will be used and discussed in the method.

Stevenson (1999: 41) notes certain factors that affect productivity are namely methods used, capital employed, quality produced and technology used in businesses.

Hersy and Blanchard (1982: 168) list the variables affecting job performance or labour productivity as:

- Individual variables - age, sex, physical characteristics, education, experience, intelligence and aptitude, motivation and interest and personality characteristics,
- Organisational and social variables – the character of the organisation, the type of training and supervision and the type of incentives, social environment, and
- Situational, physical and job variables - methods of work, design and conditions of work, work space arrangements and the physical environment.

Suttermeister (1976) lists the following factors that affect productivity: the individual's needs, physiological, social, ego, physical conditions, social conditions – made up of leadership, the informal organisation and formal organization and lastly, ability which is made up of skills and knowledge. All

these factors impact on motivation and employee performance, which impact on productivity, excluding technical development, raw materials, job layout and methods, which impact directly on productivity).

(e) Pitfalls of organizational productivity

A problem that Lawlor (1987) identified is calculating the right output and input information to get reliable productivity measurements. He adds that one cannot measure outputs only, since this can be misleading as output may increase without productivity affecting this outcome. Lawlor (1987) also states that cost cutting can also damage productivity, particularly if done indiscriminately.

Thomas and Baron (1994: 8) quote Sardina and Vrat who consider productivity as input and output relevant to production and implies that organisations work *"as a physical system with variables and their inter-relationships amenable to precise definitions."* They also state reliance is on the stimulus response model that input causes output, causing a bias towards production while excluding other economic outputs such as market share achievement, new product introduction, schedule completion and societal goals. It is also stated that factorial productivity measures connected to input factors such as labour and capital are misleading and inadequate. This is particularly a problem with white collar or knowledge workers, who are

increasing in numbers and whose work is not simple and repetitive and easy to analyze with traditional work study techniques.

Thomas and Baron (1994: 9) also quote Sink regarding the observation that managers create confusion about productivity as they do not *"distinguish between productivity's definitions, measurement, and improvement on the one hand, and performance's concepts, measurement, and improvement, on the other. This failure to distinguish between productivity and performance can make communicating about productivity difficult."*

Suttermeister (1976: 12) points out that *"the relationship between need satisfaction, morale, employees' job performance, and productivity is much too complex for us to assume that satisfaction of individuals needs will automatically lead to better job performance and increased productivity."*

Lawlor (1987: 5) claims that: *"An important factor in the productivity problem is the need to adjust to change. The task of improving performance requires attention to all aspects of the organization – the total approach; improving one part may be detrimental to the rest .The understanding and management of change have a vital part to play in improving productivity. Each change is generally accompanied by higher standards of performance…So apart from the fact that organizations won't have any productivity to improve if they do not change, standards of performance are constantly being updated."* Lawlor (1987) adds that the biggest impact changes to productivity are: staple industry changing to information/ knowledge based, end of abundant raw

materials, peaking in the 1960's, affecting economies and particularly manufacturing industries, information technology opening up organisational and manufacturing process controls not possible a few years ago.

Gordon (1997: 3) argues that because productivity measure is a dilemma, one should perhaps consider effectiveness as an alternative, particularly for knowledge-based employees.

Accel-team.com (2003b: 2), commenting on employee productivity, lists the following problems in productivity following studies of 63 organisations:
"Conceptual problems that relate to the exact measurement of productivity improvement and exactly how company performance is brought about; perspectives of how different people view productivity; operational problems relating to the collection of data and the synthesis of data of different types."

(f) Organisational productivity in the workplace

The main factors affecting individual performance according to Harrison (2000: 15) are:

- Knowledge,
- Skill,
- Motivation, and
- Environment.

Harrison (2000: 16) states that people do not perform for the following factors:

- Inadequate information or reference material,
- Poor working environment or inadequate tools,
- Poor incentives,
- Lack of knowledge,
- Lack of skill, and
- Poor motivation.

Thomas and Baron (1994: 29) summarise the following performance measures into three categories: factor of production indicators for trends; outcome indicators to show production achieved and work process indicators.

Schwartz *et al.* (1999), states that employee productivity directly affects company production and recommends performance management to ensure employees work effectively and efficiently. This can be achieved through communication between management and employees, setting goals and giving continuous feedback to work smarter instead of harder to achieve productivity. According to Schwartz (1999) performance criteria for performance evaluation are: deadlines, co-operation, reciprocity, time management, equipment use, prioritizing tasks, quality and accuracy of work, problem solving and creativity/ originality.

Albano (2004: 1) claims there is a positive relationship between motivation and productivity: as motivation increases one can expect productivity to increase too. The author goes on to say the job satisfaction employees

derive from being productive will increase effort and thereby increase productivity.

Business Day (2004) lists a Productitivity Improvement Programme (PIP) to improve productivity, used by companies such as GM and Ford: obtain management support, create new organizational components to steer productivity, plan systematically, open communications, involve employees, measure and analyse.

(g) Organisational productivity in South Africa

NEDLAC (NPI/ NEDLAC, 2001) claim that in most sectors in South Africa productivity is increasing, but raise the concern that this is being achieved by decreasing the use of resources being used or decreasing inputs instead of the same resources to improve productivity. While this may show efficient use of resources, it is achieved through wage reductions and fewer people employed, it is known as jobless growth. NPI and NEDLAC (2001) argue that productivity is not increased by South African businesses by managerial innovation, but by serious workforce reductions affecting unemployment, social services, and foreign investment. These organisations therefore argue that productivity in South Africa should also be considered qualitatively in terms of work environment improvements, skills development, higher worker morale, improved communications and relationships with labour management and improved customer relations, equity and image of the organisation.

NPI and NEDLAC (2001) have also indicated that circumstances such as non-competitive interest rates, high unemployment and until recently high inflation presently impact productivity. A low skills base, low technological output and other issues negatively affect productivity in South Africa.

The South African Minister of Labour, Minister Mdladlana, said at an NPI launch late last year, that South Africa's productivity levels have improved over the past three years. NPI's statistics show multifactor productivity has improved by 2.4 per cent in 2002 compared to 3.6 per cent and 4.3 per cent in 2001 and 2000 respectively. In 2002 the NPI claims labour productivity increased by 3.6 per cent and fixed capital productivity by 2.2 per cent. The Minister added in his speech that between 1996 and 2002, multifactor productivity increased by 3.1 per cent, consisting of an average of 5.5 per cent in labour productivity and 1.7 per cent in capital productivity Business News (2003:1).

AON's 2003 national survey (AON,2003), measuring the level of workforce commitment in South Africa, states half their respondents feel their co-workers are productive. Fifty-eight per cent agree that co-workers make personal effort to improve skills to make a better contribution and fifty-three percent feel that co-workers make personal sacrifices to help their group succeed. Sixty-three per cent of respondents feel responsible to help their organisation to be successful.

AON's 2003 South African survey also showed that sixty–seven per cent of respondents felt that their organisations were more successful twelve month before the survey was taken and seventy-seven per cent felt the organisations chances of success a year from now were even better. The employee confidence index shows neither confidence nor lack of confidence in organisational success. South African employees seemed to be more confident than Americans and Australians (AON, 2003).

Following a 2003 survey, Proudfoot Consulting claim that South Africa is at fifty-nine percent of optimum capacity, up from forty-six percent compared to the sixty-three per cent of world leaders and an optimum level of eighty-five per cent and claim great improvements in productivity within South Africa (Proudfoot, 2003: 15). Proudfoot also list six obstacles to productivity as poor management planning, inadequate management, poor working morale, an inappropriately qualified workforce, IT problems and ineffective communication (Proudfoot, 2003: 8). Tradak claim the loss in productivity costs South Africa R154.4 billion or 14.4 per cent of the country's GDP per year Sunday Times (2003 b:1).

(h) Productivity in GSA Armourplate

PG Group Management perceived that GSA Springs was always a poor performer with low motivation, transfer of troublemakers from other operations to the Springs plant and constant leadership and shop floor changes.

Productivity was perceived as poor by employees due to delivery delays, re-work, absenteeism and lack of commitment.

PG Group Management perceived that the Durban plant of predominantly Indian employees had higher perceived levels of productivity with low rework, fairly good delivery hits, low absenteeism and low staff turnover.

PG Group Management perceived that Cape Town, a predominantly Coloured staffed plant, is perceived by all Armourplate management to be the most productive in terms of output, although there is greater turnover of staff compared to Durban and a more active market.

The above is based on Armourplate management perceptions.

2.4.4 Organisational change

Organizational change will be reviewed, analysing various definitions, theories and models of organisational change.

(a) Introduction

Senior (2002: 30) claims that organisations operate in multiple environments and considering the many interacting influences, an organisation has to

continually achieve *"external adaption and internal integration"* as well as, be quick to respond to opportunities and threats with knowledge and with without surprise. Senior (2002:30) states, is what managing changing organisations is all about and requires understanding how the organisation responds to internal, external and temporal environments and how change is reached through strategy, structure and operational processes.

(b) Definition

Robbins (1998: 629) offers two simple definitions of change:

Change: *"making things different."*

Planned change: *"change activities that are intentional and goal oriented."*

(c) Historical overview and background to organizational change

One needs to consider the issues of change and their effect on employees. Swist (1999: 2) states that, *"Change is an organisational reality. If it weren't for change, planning would be without problems because tomorrow would be no different from today. There would be no uncertainty. Many of today's managers face constant change, bordering on chaos."* Ninety-four percent of Swist's (1999) respondents, from a survey on 300 companies on the subject of change in the workplace and its effect on culture, attitudes and

perceptions, replied that they had experienced recent implementation of change. The author claims that *"any change is painful, and it causes stress, confusion and anxiety in people and often results in lost productivity. In general, people tend to resist any new way of acting or thinking because it makes them feel uncomfortable"* Swist (1999:2). Swist (1999:2) also states that this survey indicated the need for improvement in communication, employee involvement, training and *"walking the talk"* to improve employee acceptance of change.

(d) Organisational change in the workplace

Work experience affects attitudes and values about work and about oneselves. It is important to consider the apprpriate change method.

For the purposes of this dissertation, it is necessary to identify a structured model of change (Senior's Organisational Development (OD) soft systems model for change). Senior (1992: 312), who recommends the Soft, OD or action research model for change when dealing with a soft or what senior terms *"messy"* problems like the GSA Armourplate division issues :

- Diagnose current state- present state,
- Develop a vision for change -future state,
- Gain commitment to the vision,
- Develop an action plan,
- Implement the change,

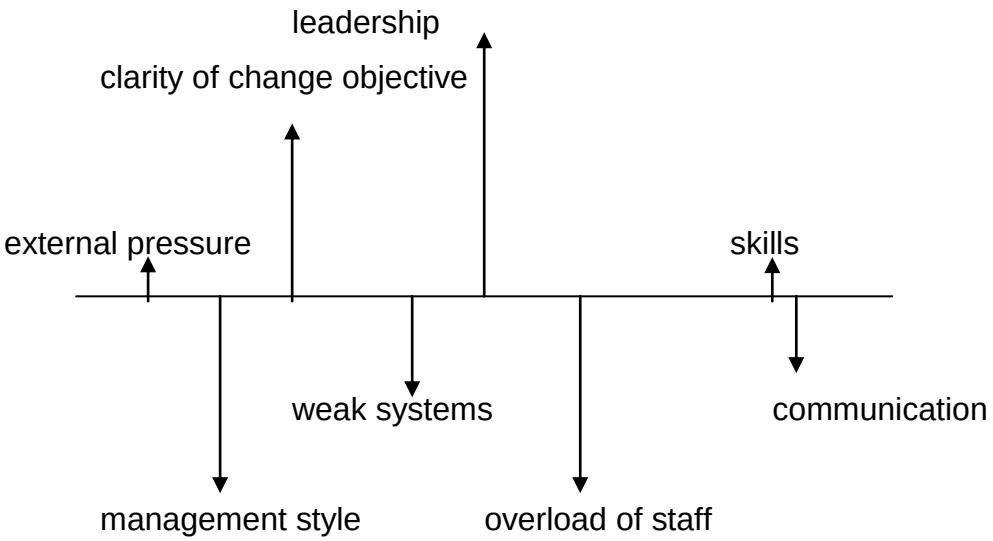
- Assess and reinforce change, and
- Back to diagnose current state.

Organisational change includes changing people's attitudes to work. The people related activities that Burnes (1992:193) describes are

- Creating a willingness to change, and
- Involving people sustaining momentum.

Grundy (1993) suggests the Force Field Analysis (see fig 2.5) developed in the 1960s should be used to evaluate forces that are enabling and limiting attainment of the change objective. At the time of this study, GSA are in the stage of implementing change, however, the suggested model would be of great use to assess and reinforce this change.

FIGURE 2-5: FORCE FIELD ANALYSIS.



Source: Grundy, T. 1993. Implementing Strategic Change. London: Kogan Page.

Swist (1999: 1) argues that failures occurred to change programmes due to *"inconsistencies in management style, culture, misperceptions about attitudes and lack of communication."* The author adds that change does not last due to focus on technical and short-term issues, as well as *"a tendency to disregard the human side and the larger system perspective"* Swist (1999: 1).

Neely, Adams and Kennerley, (2002: 117) note that *"if employee morale is allowed to deteriorate to too great and extent, then this can easily have a knock-on effect in the way customers are treated."* They state that service levels drop in less obvious ways such as phones not being answered, poor stock control, lost orders, no follow up on customer enquiries or complaints etc. *"Employees spend their time speculating about - and talking about: what will happen to them (retrenchment), or how long it will be before it happens to them, and not going about some of their individual responsibilities. If this comes at a time that a major customer was considering an alternative supplier, more than likely it is now that they will vote with their feet and walk away. The loss of a major customer – or, in a retail environment, a significant number of valued customers – has the potential to wipe out most or all of the benefits of the business combination. The linkage between employee satisfaction, attitudes and behaviours with that of customer satisfaction is vital to success…"* Neely, Adams and Kennerley (2002: 117).

Neely *et. al* (2002) also point out that senior executives try to legitimise change: to give reason to another change in direction or corporate culture move, to keep reputations, impress analysts and for the next general meeting

coming up, thereby avoiding inertia, the means justifying the ends. They quote John Harvey- Jones, former Chairman of ICI: *"Management is about maintaining the highest rate of change that an organisation and its people can stand"* Neely *et al* (2002:118). They remind one that middle management implement change programmes and employees are at the receiving end of the implementation programmes that follow. Neely et al quote a 1999 European workplace Index survey: *"If the past decade has taught us anything, it is that sustained success – financially and operationally – is highly dependent on the dedication, skills and commitment of employees at all levels in the organisation"* Neely *et al* (2002: 119).

(e) Pitfalls of organizational change

Senior (2002) states that organizations are complex and operate in multiple environments and that problems can therefore easily occur. Senior mentions the informal organization (patterns of communication, values, norms, power and influence) exist and are *"less predictable and intangible"* (Senior, 2002: 6) which management must consider when introducing change. Many individual interactions occurring during change. Senior (2002) also warns that the world is unpredictable and change can occur at any time and in any direction.

(f) Change in South Africa

International Survey Research (ISR) deputy chairman Roger Maitland discussed changes of the 1990s impacting on employee attitudes. Economic recession and market demands make it necessary for businesses to control costs and develop competencies and services. Management focus became short-term with low long-term value creation focus. The bottom of organisations become distanced form the top. Poor communications had fear and blame cultures. The result was reluctance to express views or challenge ideas, and this affects innovation Sunday Times (2002 c : 2).

Re-engineering and downsizing became popular and employees saw change occurring for change sake and felt that they were threatened.

Maitland (Sunday Times, 2002 c) states that wiser companies reacted well and empowered employees to mobilise their intelligence with focus on communication and long-term goals. Future organizations, he says, will be simple and streamlined, with a trend to self-management, leadership rather than management, and the power shifted to those with the knowledge, trust, good market intelligence and excellent communications will take place. The violation of the psychological contract will be replaced by training and development for employability to keep employees, as a transitory workforce, in Maitland's opinion, is not good for the organization to keep local employees and thereby loyal customers Sunday Times (2002 c : 3).

With political change, legislation has brought world competition into South Africa, demanding change strategies from South African organisations, McKinsey and company (UCT GSB Newsletter, 2003) adds that: *"the nature of competition in markets such as South Africa has changed and culture is linked directly to the drivers of shareholders value"*. McKinsey's 2003 survey shows that corporate South African values are focused on harder performance words such as profit, performance, cost reduction, productivity and being the best. But the survey shows employees' desired values are different and while wanting to be the best, values such as integrity, empowerment and customer satisfaction score low on employee's listings of current cultural values. McKinsey therefore argues that bringing about change in South African companies will require managers to embrace a new leadership paradigm (UCT GSB Newsletter, 2003).

AON's (2003: 23) commitment survey of 2003, South Africa @ work states that organisational changes such as mergers, acquisitions, retrenchments and industrial actions can have a major impact on employee commitment, and that retrenchments proved to have an enormous negative impact on the commitment of employees still with the organisation.

(g) Change in GSA

While change is nearly always difficult, GSA made the error of not following a structured model of change, to ensure the successful implementation thereof.

There seemed to be very little diagnoses of the situation as the directors wanted only to improve profitability within the organisation through immediate and hard change. It is questionable whether the directors communicated their shared vision properly to employees or attempted to gain commitment to their vision. There was also the issue of moving from a manufacturing culture, to the desired retail culture the leaders required. A general action plan was put together, which the recent consultants seem to still follow. Implementation occurs mainly through in instructions and not participation. There was no reward for change for the surviving employees or any assessment of how the change is proceeding, nor any reinforcement thereof.

The important issue that needs to be addressed in the current change process at GSA Armourplate Toughened plant in Durban is the important asset of people. It is vital to communicate with them regularly regarding change, reward them for its implementation and ensure their participation to eliminate resistance, if future change is to be implemented successfully.

2.4.5 Leadership style in GSA

Using Blake and Mouton's Managerial Leadership grid, it is perceived that with GSA there is a low concern for people, while there is a high concern for production by the PG group and GSA division executive management. This gives a rating of 9.1 on this grid which is defined as Authority Compliance where *"Efficiency in operations results from arranging conditions of work in*

such a way that human elements interfere to a minimum degree" (Kreitner and Kinicki, 2002: 456). While the grid is highly controversial, it assumes that there is one preferred leadership style – that of team management with work achieved by committed employees who have trust and respect, where there is high concern for both people and production and leads to *"productivity, satisfaction, creativity and health"* (Kreitner and Kinicki, 2002: 456).

According to Kreitner and Kinicki (2002), the Ohio state studies in behaviour of leaders focused on structure and consideration which are perceived to both be low in GSA Armourplate at present and require more structure and consideration.

Leadership also influences employees expectations in terms of the Expectancy Theory of motivation or the path goal theory and addresses issues of employee characteristics, attitudes and behaviour, environmental factors and leadership styles.

It is important to note Hersey and Blanchard's Situational Leadership model (research done on this model is "guarded" according to Robbins (1998)). It is perceived that follower readiness is able but unwilling/ apprehensive with the executive leadership style in the company. The model indicates that motivation problems are best solved by a supportive and participative style of management.

The style of management using the Dunphy and Stace change matrix (Senior 2002: 251) would catagorise the executive leadership in the PG Group and GSA as coercive looking for corporate transformation which is defined as "dictatorial transformation" (Senior, 2002: 251). Senior (2002) explains that the various theories on leadership list characteristics for successful leadership and argue no one leader can be successful. Senior (2002) continues that today leadership in change requires more than *"command and control behaviours"* Senior (2002: 258) that worked when environments were stable. Leaders working in uncertainty need to work more collaboratively in either hard (restructure , retrenchment, downsizing) or soft (learning and collaboration) approaches to successful change. Senior (2002: 258) comments that leadership *"…comprise(s) the context in which change takes place".*

It is evident from the above theories on leadership that leadership, has an important role to play in terms of job satisfaction, productivity and motivation and raises some concerns regarding GSA's management style in change management at executive level.

2.5 SUMMARY

It is important to get an understanding of the four variables that are an integral part of the research problem and to understand the nature and meaning of the problem that has been identified in order that a proper strategy be formulated. The review is organised by themes namely, employee

motivation, job satisfaction, organisational productivity and organisational change.

Linder (1998: 2) explains the need for motivated employees: *"The answer is survival. Motivated employees are needed in our rapidly changing workplaces. Motivated employees help organisations survive. Motivated employees are productive."* Stacey (2003: 66) adds the theories of Scein and Etzioni as well as Pasclae and Athos to Maslow and Herzberg and concludes: "What all these studies point to is this. An organisation succeeds when its people, as individuals, are emotionally engaged in some way, when they believe in what their group and their organisation are doing, and when the contribution they make to this organisational activity brings psychological satisfaction of some kind, something more than simple basic rewards."

According to Green, Ross, Weltz, (1999: 12):

- Research shows a weak relationship between job satisfaction and productivity performance,
- One hypothesis is that satisfaction does not bring about productivity but that productivity creates job satisfaction, and
- Satisfaction and performance are positively correlated if performance is considered instrumental to attain rewards and rewards are seen to be fair.

Biesheuvel (1984) adds his opinion, that it is too simplistic to think of a direct relationship between job satisfaction and performance as there are too many variables and the relationship remains problematic. He raises the question as

to whether satisfaction is the outcome and not the initiator of performance? Regardless of the factors influencing its level, there are strong data to suggest that job satisfaction influences significant types of work behaviour.

The Sunday Times Business Section, 7 April 2002 b, claims 69 per cent of South African employees are unhappy at work or in their careers. From this research it was confirmed that *"the happier people are at work the more successful they will be in their work and the higher their productivity will be"Sunday times (2002 b).*

Suttermeister (1976: 12) argues that *"the relationship between need satisfaction, morale, employees' job performance, and productivity is much too complex for us to assume that satisfaction of individuals needs will automatically lead to better job performance and increased productivity."*
Lawlor (1987: 5) states that: *"An important factor in the productivity problem is the need to adjust to change" and continues, "The understanding and management of change have a vital part to play in improving productivity."*

McKinsey's survey of 2003 shows corporate South African values are focused on harder performance and employees' desired values are different to management values. McKinsey therefore argues that bringing about change in South African companies will require a management paradigm shift in leadership (UCT GSB Newsletter, 2003).

NPI and NEDLAC (2001) are concerned about business showing increasing productivity using less resources and inputs, wage reductions and less people employed, leading to jobless growth.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Chapter two reviewed the literature regarding the problem statement, with particular attention to employee motivation, job satisfaction, organisational productivity and organizational change, to determine the methodology to use for this report.

In chapter three the data used in the research and the selection criteria used will be identified. An overview of the research methodology is necessary *"…so that the reader develops confidence in the methods used" and shows the "…relationship between the research question and data collected"* (de Vos, 2002: 255).

3.2 THE DATA

The data of this report is comprised of primary and secondary data, as defined below:

3.2.1 The primary data

For the purposes of this research, the primary data was collected via self-administered questionnaires (see Addendum 1). The logistics were to courier the questionnaire to the senior managers of the different sites at Cape Town and Springs, following agreement with them on the date and time to complete the questionnaire. The Durban plant was handled by the researcher, who is the manager of the plant. The manager/ supervisor of the plant handed out the questionnaires; handled any enquiries and returned, by courier, to the sender for analysis.

3.2.2 The secondary data

Chapter two's literature review defined in detail the variables of the problem statement. The literature review has indicated that there is an identifiable common theme throughout of the variables of the problem statement in terms of employee needs and one can therefore consider applying Maslow's hierarchy of needs to determine the methodology to use in structuring the questionnaire and prove the hypotheses.

3.3 SELECTION CRITERIA

There are varying affects of change to employees, depending on the site that they work at. Of the three sites, Springs experienced the most change and to a lesser extent, Durban. Cape Town had very little direct change at plant level. It was therefore important to note the overall affect with 140 employees in total at a suggested 32% or 64 respondents for a population of 200 (de Vos, 2002: 201).

It was decided that the census would be approached to complete the questionnaire, for more accurate results. All job levels would therefore be expected to complete the questionnaire.

A total of 141 employees were expected to complete the questionnaire, of which 90 employees completed and returned their questionnaires. Eighty-four questionnaires were fully completed and used in the research sample (n=84).

3.4 RESEARCH DESIGN

Research design is: *"…for those groups of small, worked out formulas from which prospective (quantitatively oriented) researchers can select or*

develop one (or more) suitable to their research goals and objectives…" (de Vos 2002: 138)

There are no known standard measures available to address the problem statement and its sub-problems. As a result the researcher had to design a measuring instrument based on Maslow's hierarchy of needs model.

This type of research is a cross sectional analytical survey involving people's perceptions with regards to motivation, productivity and job satisfaction within the context of ongoing organizational change.

These three variables are measured using the underlying Maslow's hierarchy of needs model as the review of related literature shows a common underlying theme across all three as can be seen from the Maslow grid (See addendum 3).

The questions were asked using appropriate question design methodologies.

The variables are measured using a semantic differential scale on a rating of 0 to 7.

The questionnaire (see addendum 2) include certain demographic variables that are considered important. These variables will be measured on both a nominal (one variable, closed ended question) and ordinal scale

(respondent places items in a scale of rank order according to some criterion) (de Vos, 2002:186).

3.5 POPULATION AND SAMPLE

"The population is the totality of persons, events, organizational units, case records or other sampling units with which the research problem is concerned" (de Vos, 2002 199). The total population as defined includes 141 employees from the 3 manufacturing plants that constitute the GSA Armourplate business, based in Springs with 66 employees, Cape Town with 31 employees and Durban with 44 employees. From this population stratified random sampling (a form of probability sampling also known as proportionate stratification) will be applied where the strata will consist of each area and a 75% random sampling procedure will be applied within each stratum.

3.6 THE DATA COLLECTION METHODS

The researcher designed a unique measuring instrument based on existing questionnaires and the literature review to address the problem statement and the sub-problems. The data collection method used is by

questionnaire, to gain information from the three sites, namely Durban, Springs and Cape Town.

3.6.1 The questionnaire design

De Vos (2002: 175) states that a researcher should always try to use an existing questionnaire *"whenever possible."* There were existing questionnaires that could be used for job satisfaction (Krietner & Kinicki, 2002:194) and on motivation (Nadler & Lawlor, 1989:17). However, change was addressed by a before and after response, per question. Productivity questions were constructed from the literature review only, due to the lack of questionnaire material available on this subject. Three critical areas of the design stage are noted below. A pilot test was carried out to improve the design (Addendum 2).

(a) Reliability and validity

Reliability according to Vos (2002) is primarily concerned not so much with what is being measures, but how well it is being measured. Reliability has been measured and confirmed, using the Alpha Cronbach test. This is a model of internal consistency, based on the average inter- item correlation. If the Alpha value is greater than 0.6, then the model will and does prove to be internally consistent.

Validity, defined in two parts as *"the instrument actually measures the concept in question, and the concept is measured accurately"* (de Vos, 2002: 166), will be assessed using both review of related literature and expert judgment or content and face validity.

The three variables used in the questionnaire that were tested for reliability and validity are:

- Job satisfaction (Questions 1- 9)
- Productivity (Questions 10 – 17)
- Motivation (Questions 18-39)

The above are tested twice: before and after change.

A pilot study was distributed to five Durban staff members at varying levels within the business. Respondent feedback required subsequent adjustments to the original questionnaire (See Addendum 2).

(b) The structure of the questionnaire

The instrument for this study was the personal questionnaire, made up of 47 questions and divided into two sections. Each section will be discussed below:

(i) Introduction

An introduction was necessary to explain change within the country and within the Armourplate business. The respondents were also told what the questionnaire was attempting to measure, as well as, explain the time frame of change being measured.

(ii) Instructions

The instructions were given regarding the rating of the questions. Of particular importance was the respondents understanding of the response to change in the questionnaire, before change and present attitude to change.

(iii) Section A: Biographical information

The biographical section covered the job level, age, race, gender, managers reported to, years of service and plant location.

(iv) Section B: Attitudes

Section B includes the main body of the measuring instrument and attempts to quantify respondents attitudes to issues both before change management and the respondents present attitudes to change management.

Questions one to nine deal with job satisfaction. Questions 10 to 17 deal with productivity perceptions. Questions 18 to 39 deal with the subject of employee motivation. Question 40 questions leadership. The employees perception of change is dealt with in every question as the employee has to rate every question before change and at the present time, using the five point Likert scale.

3.7 PROCEDURE

The following procedure was followed in administering the survey. As the study involved all employees from all three sites, questionnaires were sent to Springs and Cape Town's plant managers, following a detailed discussion on the questionnaire content and how this should be administered. The researcher is the Durban site manager is.

The questionnaires were couriered to Springs and Cape Town. Work was stopped at all three sited for about 30 minutes for shop-floor respondents to complete the questionnaires with the assistance of a manager present for the shop-floor. Salaried employees filled their questionnaires in at their

own time with little assistance. Within two weeks, all completed questionnaires were returned to the researcher.

Data was analyzed using SPSS Version 9 manufactured in the USA to analyse the data to determine whether the hypotheses are supported or rejected. The statistical tools used for each sub-problem are discussed below and the findings of the research are reported in Chapter four.

3.8 THE SPECIFIC TREATMENT OF EACH SUB-PROBLEM

The specific treatment of the three sub-problems is as follows:

3.8.1 The problem statement

The aim of this study is to determine the relationship between employee motivation and job satisfaction, within the context of organisational change, to analyse the contribution thereof to organisational productivity.

3.8.2 The first sub-problem

The first sub-problem is to determine the relationship between employee motivation and organisational productivity within the context of organisational change.

(a) The first hypothesis

There exists a positive relationship between employee motivation and organizational productivity within the context of organizational change.

(b) The data needed

The data for testing the first hypothesis is obtainable from the responses to the questionnaire (Addendum 2).

The following data for the questionnaire had to be obtained:

- That there is a positive relationship between employee motivation and organizational productivity.

- That motivation levels were higher before change management than after change management.

- That productivity levels were higher before change management than after change management.

(c) The location of the data

Only responses from the selected sample (n=84) that had completed the questionnaire were included in the study.

(d) The means of obtaining the data

The data needed for research has been collected by means of a questionnaire, as described in the data collection method

(e) Treatment of the data

The completed questionnaires were screened to determine whether all the questions were completed. Only questionnaires that were completed were included in the research.

(f) The interpretation of the data

The appropriate parametric test, namely the t-test is applied to interpret the data from the questionnaire, to see whether motivation and productivity levels were each higher or lower, before change compared to the present time.

Correlation and regression testing was also used to establish whether there was any significant relationship between employee motivation and organizational productivity. Both Pearson's Correlation coefficient and Spearman's Rank Order Correlation coefficients are calculated due to the nature of the variable, although in certain circles Likert scales are accepts as interval measurement scales. If this relationship does exist, the degree of variability of motivation within the dependent variable of productivity is explained and confirms the null hypothesis.

Should statistical results prove a poor relationship between employee motivation and organizational productivity, the null hypothesis will be rejected.

3.8.3 The second sub-problem

To determine the relationship between job satisfaction and organisational productivity within the context of organisational change.

(a) The second hypothesis

There exists a positive relationship between job satisfaction and organizational productivity within the context of change.

(b) The data needed

The data for testing the second hypothesis is obtainable from the responses to the questionnaire (Addendum 2).

The following data for the questionnaire had to be obtained:

- That there is a positive relationship between job satisfaction and organizational productivity.

- That job satisfaction levels were higher before change management than after change management.

- That productivity levels were higher before change management than after change management.

(c) The location of the data

Only responses from the selected sample (n=84) that had completed the questionnaire were included in the study.

(d) The means of obtaining the data

The data needed for research has been collected by means of a questionnaire, as described in the data collection method.

(e) Treatment of the data

The completed questionnaires were screened to determine whether all the questions were completed. Only questionnaires that were completed were included in the research.

(f) The interpretation of the data

The appropriate parametric test, namely the t-test is applied to interpret the data from the questionnaire, to see whether job satisfaction and productivity levels were each higher or lower, before change compared to the present time.

Correlation and regression testing was also used to establish whether there was any significant relationship between job satisfaction and organizational productivity. Both Pearson's Correlation coefficient and Spearman's Rank Order Correlation coefficients are calculated due to the nature of the variable, although in certain circles Likert scales are accepts as interval measurement scales. If this relationship does exist, the degree of variability of motivation within the dependent variable of productivity is explained and confirms the null hypothesis.

Should statistical results prove a poor relationship between job satisfaction and organizational productivity, the null hypothesis will be rejected.

3.9 DATA ANALYSIS

Data was analysed using the statistical program SPSS Version 9. Both descriptive and inferential statistical analyses techniques were applied. Descriptive statistics will include various frequency distribution tables and charts and graphics. Various measures of central location and dispersion such as means, medians, modes and standard deviations will also be used.

Note the researcher understands that the constructs will be analysed using means and standard deviations due to the interval nature of such

data, however, items or questions will be analysed using only modes and medians due to the ordinal nature of such data.

The inferential statistics will include various hypothesis tests such as the t-test and various correlational tests such as Pearson's product moment correlation coefficient and linear regression modelling. Chi-square tests will also be applied to the nominal or ordinal data.

3.9.1 Methodologies used

The methodologies of the inferential statistics used are listed below :

(a) Paired T-test

H_0 : $\mu_1 = \mu_2$

H_1 : $\mu_1 \neq \mu_2$

$\alpha = 0.05$

Note: α = probability of rejecting H_o when is true (Type 1: error)

The test is two tailed.

The test statistic is :

$$\text{t-test Statistic} = \frac{\sqrt{(n-1)}\Sigma d}{\sqrt{n\Sigma d^2 - (\Sigma d)^2}}$$

where d = the difference between the 2 columns.

And n = the number of pairs.

We get the tabulated value from t tables .

Note : The p-value = The probability of H_o being true Wegner (2002 : 230) .

If the p-value is $< \alpha = 0.05$ we reject H_o

(b) Pearson's product moment correlation coefficient

This test calculates the relationship between two sets of continuous variables. It calculates both the correlation coefficient and performs a hypothesis test to see if the correlation coefficient is significantly different form zero (i.e : that there is no relationship).

For the above test the population correlation coefficient is identified by ρ and the sample correlation coefficient is identified by γ .

The hypothesis test takes the following structure Wegner (2002) :

$H_o : \rho = 0$

$H_1 : \rho . \neq 0$

$\alpha = 0.05$

Note: α = probability of rejecting H_o when is true (Type 1: error)

We calculate our test statistic :

If the p-value is $< \alpha = 0.05$ we reject H_o

(c) Regression

Simple linear regression estimates the coefficients of the linear equation, involving one independent variable, that best predicts the value of the dependent variable Wegner (2002 : 303). For example, one can try to predict a persons perception of productivity (the dependent variable) from an independent variable such as a persons perception of motivation (the independent variable).

(d) Cronbach Coefficient Alpha

Reliability analysis allows one to study the properties of measurement scales and the items that make them up. Alpha (Cronbach) is a measure of internal consistency, based on the average inter-item correlation. If the Alpha value is greater than 0.6 , then the model will prove to be internally consistent.

3.10 CONCLUSION

Chapter Three described the research methods used to extract the data required to solve the research question.

In Chapter Four, based on these methods, the results and findings are discussed.

CHAPTER FOUR

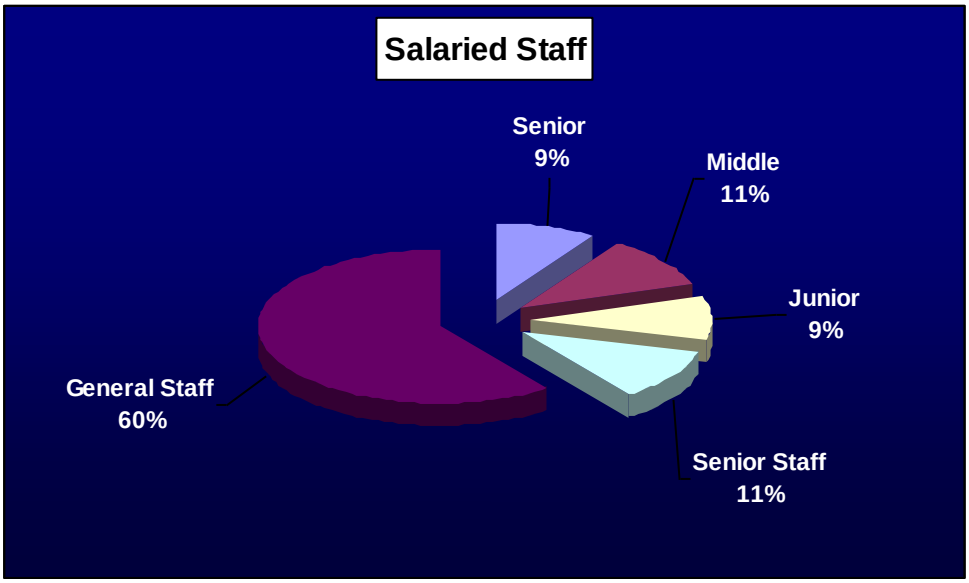
RESULTS OF DATA

4.1 INTRODUCTION

This chapter reports the research findings, which are based on the questionnaire (see Addendum B).

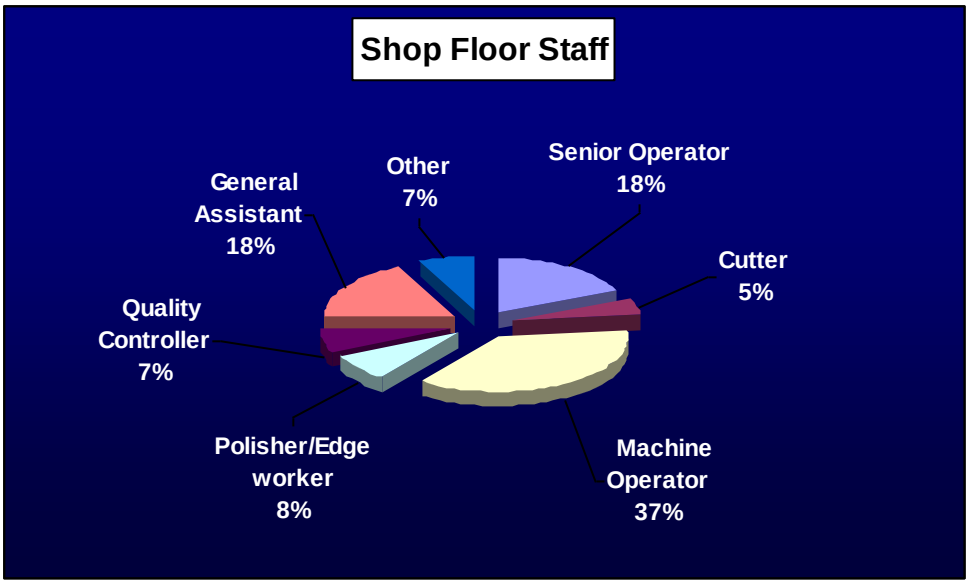
4.2 DESCRIPTIVE DATA

FIGURE 4-1: SAMPLE SEGMENTATION BY SALARIED STAFF



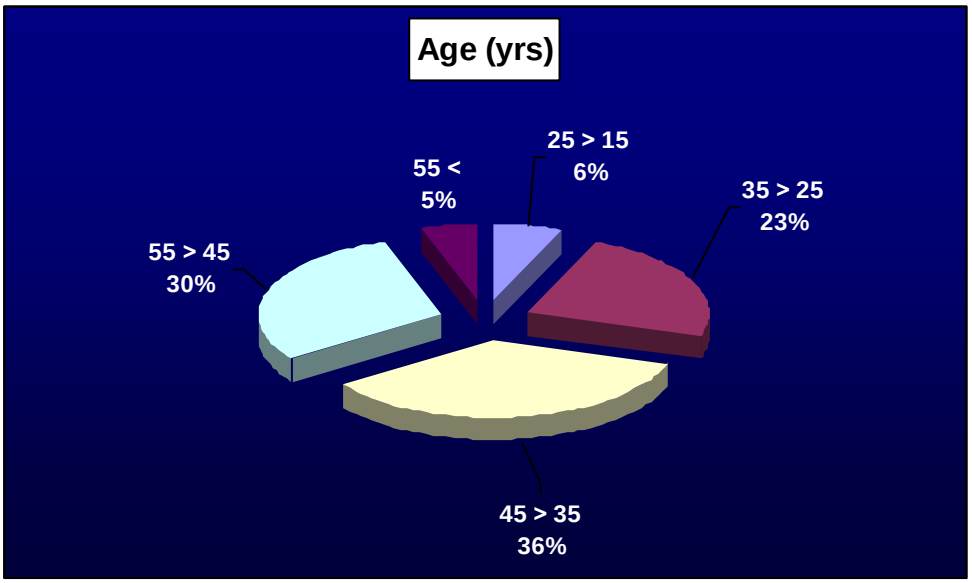
Comment : It is important to note that the majority of respondents are General staff and that management are the minority.

FIGURE 4.2: SAMPLE SEGMENTATION BY SHOP FLOOR STAFF



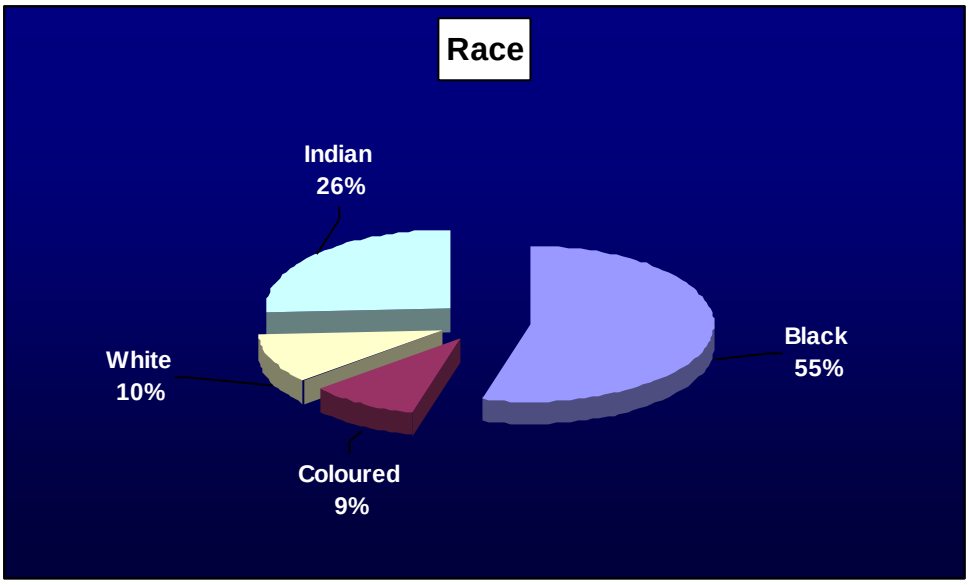
Comment : The least number of respondents are cutters, the majority of shopfloor are machine operators and not general assistants.

FIGURE 4-3: SAMPLE SEGMENTATION BY AGE



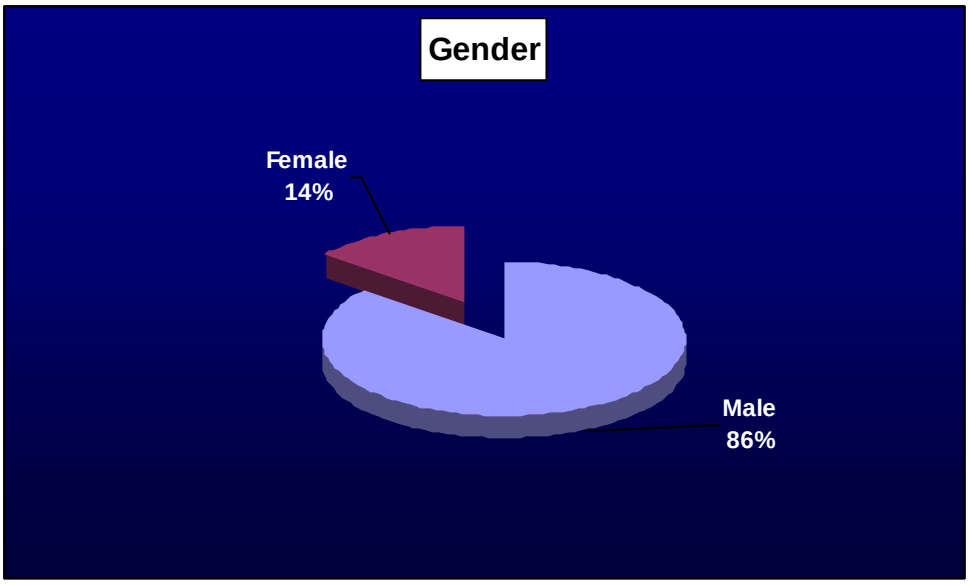
Comment : It is important to note that the over 55 year age respondents are in the minority, while the majority of respondents are between 36 and 45 years of age.

FIGURE 4-4: SAMPLE SEGMENTATION BY RACE



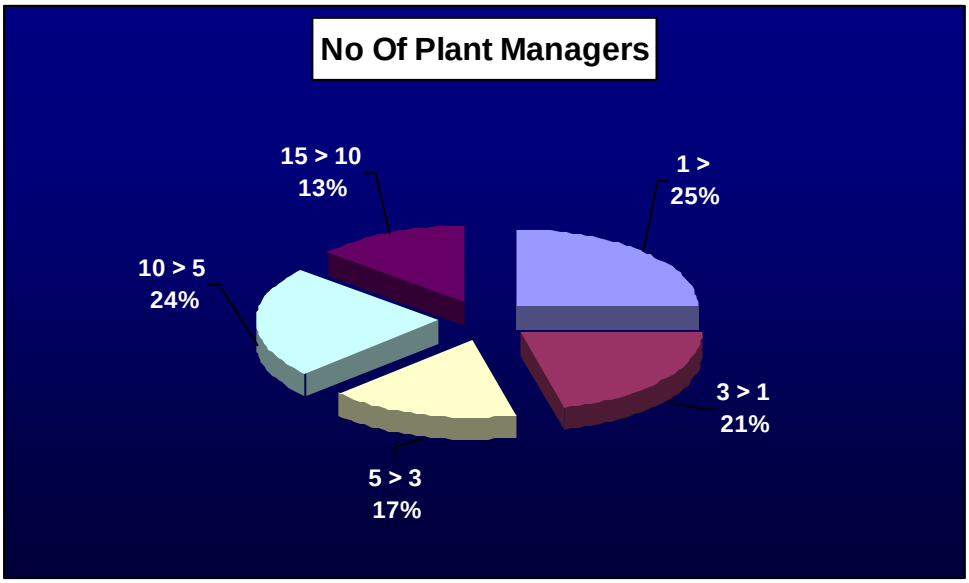
Comment : The majority of respondents are black, minorities white and coloured.

FIGURE 4-5: SAMPLE SEGMENTATION BY GENDER



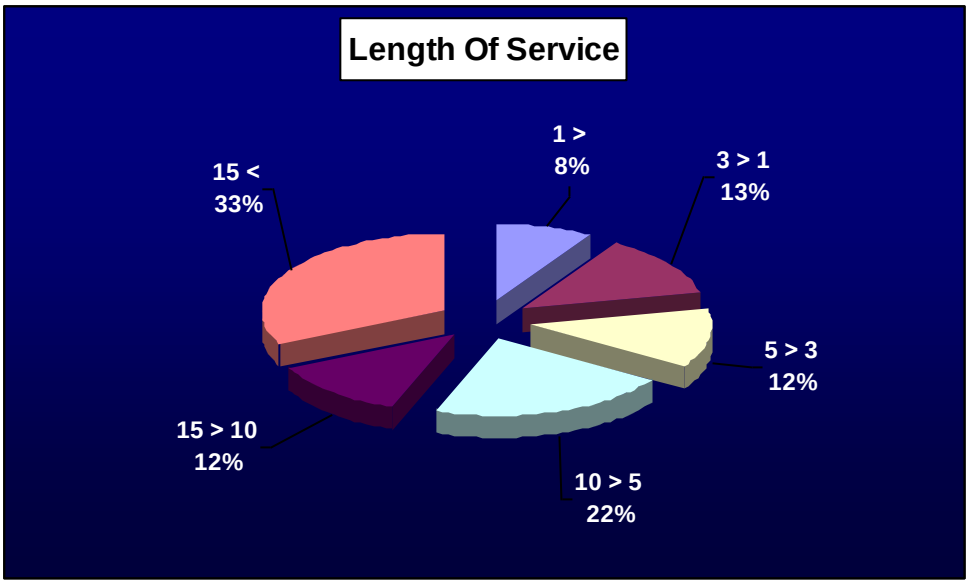
Comment : By far the majority of respondents are male.

FIGURE 4.6: SAMPLE SEGMENTATION BY NUMBER OF PLANT MANAGERS



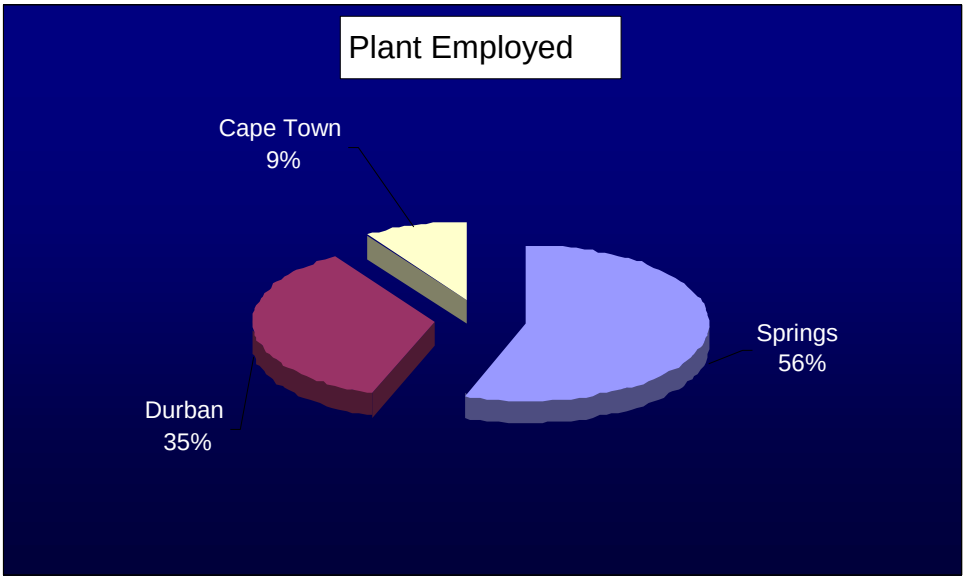
Comment: Majority of managers have less than one year service

FIGURE 4-7: SAMPLE SEGMENTATION BY LENGTH OF SERVICE



The majority of respondents have over five to ten years of employment with the company. Most respondents have a few years of employment. The minority have less than one year of employment.

FIGURE 4-8: SAMPLE SEGMENTATION BY PLANT



The majority of respondents came from the Springs plant. The minority of respondents came from the Cape Town plant.

4.3 MAGNITUDINAL CHANGES: VARIABLES BEFORE AND AFTER CHANGE

The results of perceptions before and after change are compared for job satisfaction, motivation and productivity, to check if there are any significant changes in these variables.

4.3.1 Job satisfaction perceptions before and after change

The results of perceptions of job satisfaction levels before change management are compared to perception levels after change management to see if there have been any significant changes in the levels and in what direction if any. The results of the analysis are displayed below. Since the sample sizes are above 30 the central limit theorem is applied (refer to Chapter 3 for a detailed explanation) and the appropriate parametric test namely the paired t-test (refer to Chapter three) is applied.

The descriptive statistics are displayed table 4-1. As can be seen job satisfaction levels before (31.79) change management have a higher mean than after change management (28.29).

TABLE 4-1: OVERALL TOTAL MEAN PERCEPTION OF JOB SATISFACTION BOTH BEFORE AND AFTER CHANGE

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	JSBTOTAL	31.7907	86	7.10942	.76663
	JSPTOTAL	28.2907	86	8.22602	.88703

TABLE 4-2: PEARSON'S CORRELATION COEFFICIENT BETWEEN JOB SATISFACTION BEFORE AND AFTER CHANGE

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	JSBTOTAL & JSPTOTAL	86	.007	.948

TABLE 4-3: PAIRED T-TEST RESULTS IN COMPARING THE OVERALL TOTAL MEANS OF JOB SATISFACTION BOTH BEFORE AND AFTER CHANGE

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	JSBTOTAL - JSPTOTAL	3.5000	10.83431	1.16829	1.1771	5.8229	2.996	85	.004

Since the p value = 0.004 $<$ 0.025 = significance level H_0 is rejected. There exists sufficient evidence to suggest that the population mean job satisfaction level before change management is significantly different to after change management at a 5% significance level . As can be seen from the descriptive statistics (direction) and table 4-3 this result also implies job satisfaction levels are significantly higher before change management than after change management (one tailed test).

4.3.2 Productivity perceptions before and after change

The results of perceptions of productivity levels before change management are compared to perception levels after change management to see if there have been any significant changes in the levels and in what direction if any. The results of the analysis are displayed in tables 4-4 to 4-6. Since the sample sizes are above 30 the central limit theorem is applied (refer to Chapter 3 for a detailed explanation) and the appropriate parametric test namely the paired t-test (refer to Chapter 3) is applied.

The descriptive statistics are displayed in the table 4-4. As can be seen productivity levels before (28.65) change management have a higher mean than after change management(27. 40).

TABLE 4-4: OVERALL TOTAL MEAN PERCEPTION OF PRODUCTIVITY BOTH BEFORE AND AFTER CHANGE

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRODPTOT	27.4043	94	5.71420	.58937
	PRODBTOT	28.6489	94	5.85066	.60345

TABLE 4-5: PEARSON'S CORRELATION COEFICIENT BETWEEN PRODUCTIVITY BEFORE AND AFTER CHANGE

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	PRODPTOT & PRODBTOT	94	.226	.028

TABLE 4-6: PAIRED T-TEST RESULTS IN COMPARING THE OVERALL TOTAL MEANS OF PRODUCTIVITY BOTH BEFORE AND AFTER CHANGE

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	PRODPTOT - PRODBTOT	-1.2447	7.19421	.74203	-2.7182	.2288	-1.677	93	.097

Since the p value = 0.097 is not less than 0.025 = significance level H_0 is not rejected and conclude that there does not exist sufficient evidence to suggest that the population mean productivity level before change management is significantly different to after change management at a 5% significance level . Since p value = 0.097 is also not less than 0.05 this result is also not significant for a one tailed test.

4.3.3. Motivation perceptions before and after change

The results of perceptions of motivation levels before change management are compared to perception levels after change management to see if there have been any significant changes in the levels and in what direction if any. The results of the analysis are displayed in tabes 4-7 to 4-9. Since the sample sizes are above 30 the central limit theorem is applied (refer to Chapter 3 for a detailed explanation) and the appropriate parametric test namely the paired t-test (refer to Chapter 3) is applied.

The descriptive statistics are displayed in table 4-7. As can be seen motivation levels before (42.55) change management have a higher mean than after change management(38.39).

TABLE 4-7: OVERALL TOTAL MEAN PERCEPTION BOTH BEFORE AND AFTER CHANGE

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	MOTPTOT	38.3933	89	9.40819	.99727
	MOTBTOT	42.5506	89	7.69299	.81546

TABLE 4-8: PEARSONS CORRELATION COEFFICIENT BETWEEN MOTIVATION BEFORE AND AFTER CHANGE

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	MOTPTOT & MOTBTOT	89	.048	.656

TABLE 4-9: PAIRED T-TEST RESULTS IN COMPARING THE OVERALL TOTAL MEANS OF MOTIVATION BOTH BEFORE AND AFTER CHANGE

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	MOTPTOT - MOTBTOT	-4.1573	11.86467	1.25765	-6.6566	-1.6580	-3.306	88	.001

Since the p value = 0.001 $<$ 0.025 = significance level, H_0 is rejected. There therefore exists sufficient evidence to suggest that the population mean motivation levels before change management is significantly different to after change management at a 5% significance level . As can be seen from the descriptive statistics (direction) and the table 4-9 this result also implies motivation levels are significantly higher before change management than after change management (one tailed test) .

4.4 MAGNITUDINAL CHANGES: PERCEPTIONS OF VARIABLES BY AGE, LENGTH OF SERVICE AND PLANT LOCATION, BEFORE AND AFTER CHANGE

Magnitudinal changes will now be analysed by variable.

4.4.1 Perception of job satisfaction comparing the overall total means of job satisfaction both before and after change by age

Job Satisfaction perceptions before and after change by age is investigated.

TABLE 4-10: OVERALL TOTAL MEAN PERCEPTION OF JOB SATISFACTION BOTH BEFORE AND AFTER CHANGE BY AGE

Paired Samples Statistics

Age			Mean	N	Std. Deviation	Std. Error Mean
.	Pair 1	JSBTOTAL	35.0000	1[a]	.	.
		JSPTOTAL	34.0000	1[a]	.	.
15 < 35 yrs	Pair 1	JSBTOTAL	29.5357	28	7.99297	1.51053
		JSPTOTAL	27.4643	28	8.33325	1.57484
> 35 yrs	Pair 1	JSBTOTAL	32.8421	57	6.48567	.85905
		JSPTOTAL	28.5965	57	8.25889	1.09392

a. The correlation and t cannot be computed because the sum of casew eights is less than or equal to 1.

The paired t-test results above reveal a p-value of 0.006 for those aged above 35 years. This p-value is less than 0.05 (the significance level) therefore the research can conclude that for the age group above 35 years there exists sufficient evidence to conclude that there is a significant change (it seems to decrease from the descriptive statistics above) in the level of job satisfaction as a result of change management.

TABLE 4-11: PAIRED RESULTS IN COMPARING THE OVERALL TOTAL MEANS OF JOB SATISFACTION BOTH BEFORE AND AFTER CHANGE BY AGE

Paired Samples Test[a]

Age			Paired Differences					t	df	Sig. (2-tailed)
			Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
						Lower	Upper			
15 < 35 yrs	Pair 1	JSBTOTAL - JSPTOTAL	2.0714	10.46309	1.97734	-1.9857	6.1286	1.048	27	.304
> 35 yrs	Pair 1	JSBTOTAL - JSPTOTAL	4.2456	11.12154	1.47308	1.2947	7.1966	2.882	56	.006

a. No statistics are computed for one or more split files

4.4.2 Overall total mean perception of job satisfaction both before and after change by length of service

The overall total mean perception of job satisfaction both before and after change by length of service will be analysed.

TABLE 4-12 OVERALL TOTAL MEAN PERCEPTION OF JOB SATISFACTION BOTH BEFORE AND AFTER CHANGE BY LENGTH OF SERVICE

Paired Samples Statistics

Length of Service			Mean	N	Std. Deviation	Std. Error Mean
.	Pair 1	JSBTOTAL	.	0[a]	.	.
		JSPTOTAL	.	0[a]	.	.
<= 5 yrs	Pair 1	JSBTOTAL	32.7407	27	6.59016	1.26828
		JSPTOTAL	27.0741	27	8.92674	1.71795
> 5 yrs	Pair 1	JSBTOTAL	31.3559	59	7.34791	.95662
		JSPTOTAL	28.8475	59	7.90202	1.02875

a. The correlation and t cannot be computed because there are no valid pairs.

TABLE 4-13: PAIRED T-TEST RESULTS IN COMPARING THE OVERALL TOTAL MEANS OF JOB SATISFACTION BOTH BEFORE AND AFTER CHANGE BY LENGTH OF SERVICE

Paired Samples Test[a]

			Paired Differences					t	df	Sig. (2-tailed)
						95% Confidence Interval of the Difference				
Length of Service			Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
<= 5 yrs	Pair 1	JSBTOTAL - JSPTOTAL	5.6667	10.74172	2.06725	1.4174	9.9160	2.741	26	.011
> 5 yrs	Pair 1	JSBTOTAL - JSPTOTAL	2.5085	10.82203	1.40891	-.3118	5.3287	1.780	58	.080

a. No statistics are computed for one or more split files

The paired t-test results above reveal a p-value of 0.011 for those with a length of service less than or equal to 5 years. This p-value is less than 0.05 (the significance level) therefore the study can conclude that for those

employed less than or equal to 5 years there exists sufficient evidence to conclude that there is a significant change (it seems decrease from the descriptive statistics) in the level of job satisfaction as a result of change management.

4.4.3 Overall total mean perception of job satisfaction both before and after change by plant location

Overall total mean perception of job satisfaction both before and after change by plant location is analysed next.

TABLE 4-14 OVERALL TOTAL MEAN PERCEPTION OF JOB SATISFACTION BOTH BEFORE AND AFTER CHANGE BY PLANT LOCATION

Descriptive Statistics

Branch		N	Minimum	Maximum	Mean	Std. Deviation
.	JSBTOTAL	1	35.00	35.00	35.0000	.
	JSPTOTAL	1	36.00	36.00	36.0000	.
	Valid N (listwise)	1				
Springs	JSBTOTAL	50	17.00	45.00	33.5600	6.05134
	JSPTOTAL	47	9.00	39.00	25.6383	7.11528
	Valid N (listwise)	42				
Durban	JSBTOTAL	35	12.00	45.00	30.4000	7.58171
	JSPTOTAL	35	11.00	44.00	31.0571	8.80155
	Valid N (listwise)	34				
Cape Town	JSBTOTAL	9	17.00	40.00	26.7778	8.80025
	JSPTOTAL	9	24.00	38.00	30.7778	5.06897
	Valid N (listwise)	9				

TABLE 4-15: PAIRED T-TEST RESULTS IN COMPARING THE OVERALL TOTAL MEANS OF JOB SATISFACTION BOTH BEFORE AND AFTER CHANGE BY PLANT LOCATION

Paired Samples Test[a]

Branch			Paired Differences					t	df	Sig. (2-tailed)
			Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
						Lower	Upper			
Springs	Pair 1	JSBTOTAL - JSPTOTAL	8.3571	9.98492	1.54071	5.2456	11.4687	5.424	41	.000
Durban	Pair 1	JSBTOTAL - JSPTOTAL	-.3824	9.74529	1.67130	-3.7826	3.0179	-.229	33	.820
Cape Town	Pair 1	JSBTOTAL - JSPTOTAL	-4.0000	9.52628	3.17543	-11.3225	3.3225	-1.260	8	.243

a. No statistics are computed for one or more split files

The paired t-test results in table 4-15 reveal a p-value of 0.000 for those staff members from Springs. This p value is less than 0.05 (the significance level) therefore the study can conclude that for those employees from Springs there is a significant change (it seems decrease from the descriptive statistics above) in the level of job satisfaction as a result of change management.

4.4.4 Overall mean perception of productivity before and after change by age

Perceptions toward productivity is analysed next. Initially age is investigated.

TABLE 4-16: PAIRED T-TEST RESULTS IN COMPARING THE OVERALL TOTAL MEANS OF PRODUCTIVITY BOTH BEFORE AND AFTER CHANGE BY AGE

Paired Samples Test

Age			Paired Differences					t	df	Sig. (2-tailed)
			Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
						Lower	Upper			
.	Pair 1	PRODPTOT - PRODBTOT	-.3333	.57735	.33333	-1.7676	1.1009	-1.000	2	.423
15 < 35 yrs	Pair 1	PRODPTOT - PRODBTOT	-1.3448	7.32060	1.35940	-4.1294	1.4398	-.989	28	.331
> 35 yrs	Pair 1	PRODPTOT - PRODBTOT	-1.2419	7.36559	.93543	-3.1124	.6286	-1.328	61	.189

The paired t-test results in table 4-16 reveals p-values which are all greater than the significance value of 0.05 therefore none of the null hypotheses can be rejected concluding that none of the productivity perceptions have changed significantly as a result of change management across all age groups.

4.4.5 Overall mean perception of productivity before and after change by length of service

Next the study looks at length of service, the results of which are outlined in tables 4-17 and 4-18.

TABLE 4-17: OVERALL TOTAL MEAN PERCEPTION OF PRODUCTIVITY BOTH BEFORE AND AFTER CHANGE BY LENGTH OF SERVICE

Paired Samples Statistics

Length of Service			Mean	N	Std. Deviation	Std. Error Mean
.	Pair 1	PRODPTOT	32.0000	1[a]	.	.
		PRODBTOT	32.0000	1[a]	.	.
<= 5 yrs	Pair 1	PRODPTOT	26.1786	28	5.66375	1.07035
		PRODBTOT	29.1429	28	4.55188	.86022
> 5 yrs	Pair 1	PRODPTOT	27.8615	65	5.71969	.70944
		PRODBTOT	28.3846	65	6.37547	.79078

a. The correlation and t cannot be computed because the sum of casew eights is less than or equal to 1.

TABLE 4-18: PAIRED T-TEST RESULTS IN COMPARING THE OVERALL TOTAL MEANS OF PRODUCTIVITY BOTH BEFORE AND AFTER CHANGE BY LENGTH OF SERVICE

Paired Samples Test[a]

			Paired Differences					t	df	Sig. (2-tailed)
						95% Confidence Interval of the Difference				
Length of Service			Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
<= 5 yrs	Pair 1	PRODPTOT - PRODBTOT	-2.9643	6.60798	1.24879	-5.5266	-.4020	-2.374	27	.025
> 5 yrs	Pair 1	PRODPTOT - PRODBTOT	-.5231	7.41221	.91937	-2.3597	1.3136	-.569	64	.571

a. No statistics are computed for one or more split files

The paired t-test results above reveal a p-value of 0.025 for those staff employed less than or equal to 5 years. This p-value is less than 0.05 (the significance level) therefore the study can conclude that for those employees

employed less than or equal to 5 years that there is a significant change (it seems decrease from the descriptive statistics above) in the level of Perceptual Productivity as a result of change management.

4.4.6 Overall mean perception of productivity before and after change by plant location

The plant located is identified next and the statistics provided for mean perceptions of productivity before and after change.

TABLE 4-19: OVERALL TOTAL MEAN PERCEPTION OF PRODUCTIVITY BOTH BEFORE AND AFTER CHANGE BY PLANT LOCATION

Paired Samples Statistics

Branch			Mean	N	Std. Deviation	Std. Error Mean
.	Pair 1	PRODPTOT	32.0000	1[a]	.	.
		PRODBTOT	32.0000	1[a]	.	.
Springs	Pair 1	PRODPTOT	27.1875	48	5.51461	.79597
		PRODBTOT	29.5625	48	5.37886	.77637
Durban	Pair 1	PRODPTOT	26.8571	35	6.03004	1.01926
		PRODBTOT	27.8857	35	6.45697	1.09143
Cape Town	Pair 1	PRODPTOT	29.9000	10	5.52670	1.74770
		PRODBTOT	26.6000	10	5.69990	1.80247

a. The correlation and t cannot be computed because the sum of casew eights is less than or equal to 1.

TABLE 4-20: PAIRED T-TEST RESULTS IN COMPARING THE OVERALL TOTAL MEANS OF PRODUCTIVITY BOTH BEFORE AND AFTER CHANGE BY PLANT LOCATION

Paired Samples Test[a]

Branch			Paired Differences					t	df	Sig. (2-tailed)
			Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Springs	Pair 1	PRODPTOT - PRODBTOT	-2.3750	7.43661	1.07338	-4.5344	-.2156	-2.213	47	.032
Durban	Pair 1	PRODPTOT - PRODBTOT	-1.0286	7.46161	1.26124	-3.5917	1.5346	-.816	34	.420
Cape Town	Pair 1	PRODPTOT - PRODBTOT	3.3000	2.35938	.74610	1.6122	4.9878	4.423	9	.002

a. No statistics are computed for one or more split files

The paired t-test results above reveal two p-values of 0.032 and 0.002 which are both less than 0.05 (the significance level) therefore the study can conclude that for those employees from Springs and Cape Town there is a significant change (productivity seems decrease in Springs and increase in Cape Town from the descriptive statistics above) in the level of perceptual productivity as a result of change management.

4.4.7 Overall mean perceptions toward motivation before and after change by age

Overall perceptions toward motivation is analyzed next. Initially age is investigated.

TABLE 4-21: OVERALL TOTAL MEAN PERCEPTION OF MOTIVATION BOTH BEFORE AND AFTER CHANGE BY AGE

Paired Samples Statistics

Age			Mean	N	Std. Deviation	Std. Error Mean
.	Pair 1	MOTPTOT	44.3333	3	9.60902	5.54777
		MOTBTOT	45.3333	3	2.08167	1.20185
15 < 35 yrs	Pair 1	MOTPTOT	39.0741	27	9.29816	1.78943
		MOTBTOT	41.6667	27	9.75863	1.87805
> 35 yrs	Pair 1	MOTPTOT	37.7797	59	9.48332	1.23462
		MOTBTOT	42.8136	59	6.79116	.88413

TABLE 4-22: PAIRED T-TEST RESULTS IN COMPARING THE OVERALL TOTAL MEANS OF MOTIVATION BOTH BEFORE AND AFTER CHANGE BY AGE

Paired Samples Test

			Paired Differences					t	df	Sig. (2-tailed)
						95% Confidence Interval of the Difference				
Age			Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
.	Pair 1	MOTPTOT - MOTBTOT	-1.0000	7.54983	4.35890	-19.7548	17.7548	-.229	2	.840
15 < 35 yrs	Pair 1	MOTPTOT - MOTBTOT	-2.5926	13.13029	2.52693	-7.7868	2.6016	-1.026	26	.314
> 35 yrs	Pair 1	MOTPTOT - MOTBTOT	-5.0339	11.48457	1.49516	-8.0268	-2.0410	-3.367	58	.001

The paired t-test in table 4-22 reveal a p-value of 0.001 which is less than the significance value of 0.05 therefore for persons aged greater than 35 years the levels of motivation perceptions have changed significantly (decreased) as a result of change management.

4.4.8 Overall mean perception of motivation before and after change by length of service

Next the study looks at length of service, the results of which are outlined below.

TABLE 4-23: OVERALL TOTAL PERCEPTION OF MOTIVATION BOTH BEFORE AND AFTER CHANGE BY LENGTH OF SERVICE

Paired Samples Statistics

Length of Service			Mean	N	Std. Deviation	Std. Error Mean
.	Pair 1	MOTPTOT	53.0000	1[a]	.	.
		MOTBTOT	47.0000	1[a]	.	.
<= 5 yrs	Pair 1	MOTPTOT	37.2500	28	9.40695	1.77775
		MOTBTOT	43.3571	28	6.51047	1.23036
> 5 yrs	Pair 1	MOTPTOT	38.6833	60	9.33826	1.20556
		MOTBTOT	42.1000	60	8.24765	1.06477

a. The correlation and t cannot be computed because the sum of casew eights is less than or equal to 1.

TABLE 4-24: PAIRED T-TEST RESULTS IN COMPARING THE OVERALL TOTAL MEANS OF MOTIVATION BOTH BEFORE AND AFTER CHANGE BY LENGTH OF SERVICE

Paired Samples Test[a]

			Paired Differences					t	df	Sig. (2-tailed)
						95% Confidence Interval of the Difference				
Length of Service			Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
<= 5 yrs	Pair 1	MOTPTOT - MOTBTOT	-6.1071	11.88008	2.24512	-10.7138	-1.5005	-2.720	27	.011
> 5 yrs	Pair 1	MOTPTOT - MOTBTOT	-3.4167	11.88546	1.53441	-6.4870	-.3463	-2.227	59	.030

a. No statistics are computed for one or more split files

The paired t-test results of table 4-24 reveal two p-values of 0.011 and 0.030 which are both less than 0.05 (the significance level) therefore the study can conclude that for all length of service categories that there is a significant change (it seems decrease from the descriptive statistics above) in the levels of perceptual motivation as a result of change management.

4.4.9 Overall mean perception of motivation before and after change by plant location

Plant location is studied next. The results are depicted below:

TABLE 4-25: OVERALL TOTAL MEAN PERCEPTION OF MOTIVATION BOTH BEFORE AND AFTER CHANGE BY PLANT LOCATION

Paired Samples Statistics

Branch			Mean	N	Std. Deviation	Std. Error Mean
.	Pair 1	MOTPTOT	42.0000	1[a]	.	.
		MOTBTOT	42.0000	1[a]	.	.
Springs	Pair 1	MOTPTOT	34.5778	45	8.95567	1.33503
		MOTBTOT	43.6444	45	6.60976	.98532
Durban	Pair 1	MOTPTOT	43.5588	34	8.07237	1.38440
		MOTBTOT	42.5588	34	7.95133	1.36364
Cape Town	Pair 1	MOTPTOT	37.5556	9	8.12575	2.70858
		MOTBTOT	37.1111	9	10.48147	3.49382

a. The correlation and t cannot be computed because the sum of casew eights is less than or equal to 1.

TABLE 4-26: PAIRED T-TEST RESULTS IN COMPARING THE OVERALL TOTAL MEANS OF MOTIVATION BOTH BEFORE AND AFTER CHANGE BY PLANT LOCATION

Paired Samples Test[a]

Branch			Paired Differences					t	df	Sig. (2-tailed)
			Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
						Lower	Upper			
Springs	Pair 1	MOTPTOT - MOTBTOT	-9.0667	12.13447	1.80890	-12.7123	-5.4211	-5.012	44	.000
Durban	Pair 1	MOTPTOT - MOTBTOT	1.0000	9.44522	1.61984	-2.2956	4.2956	.617	33	.541
Cape Town	Pair 1	MOTPTOT - MOTBTOT	.4444	9.79938	3.26646	-7.0880	7.9769	.136	8	.895

a. No statistics are computed for one or more split files

The paired t-test results of table 4-26 reveal a p-value of 0.000 for those staff members from Springs. This p-value is less than 0.05 (the significance level) therefore the study can conclude that for those employees from Springs there is a significant change (it seems decrease from the descriptive statistics above) in the level of perceptual motivation as a result of change management.

4.5 CORRELATION AND REGRESSION TESTING

"Regression analysis and Correlation analysis are the two statistical methods which attempt to quantify and describe this possible relationship between variables" (Wegner, 2002: 302). The variables will now be analysed using this type of statistical analysis.

4.5.1 Correlation and regression analysis of motivation and productivity before and after change

The relationship between motivation and productivity will now be analysed.

(a) Correlation analysis: Motivation and productivity before change

Correlation analysis techniques are applied to establish whether any significant relationships exist between the motivation and productivity levels and if relationships exist and are significant regression techniques are applied to try and model those relationships.

The results of the correlation analysis before change management are portrayed below.

Pearsons Correlation coefficient is calculated and the results are reflected below

TABLE 4-27: DESCRIPTIVE STATISTICS BEFORE CHANGE: OVERALL TOTAL MEANS OF MOTIVATION AND PRODUCTIVITY

Descriptive Statistics

	Mean	Std. Deviation	N
MOTBTOT	42.4688	7.73638	96
PRODBTOT	28.7449	5.98161	98

TABLE 4-28: PEARSON'S CORRELATION COEFFICIENT OF MOTIVATION AND PRODUCTIVITY (BEFORE CHANGE)

Correlations

		MOTBTOT	PRODBTOT
MOTBTOT	Pearson Correlation	1	.715**
	Sig. (2-tailed)	.	.000
	N	96	90
PRODBTOT	Pearson Correlation	.715**	1
	Sig. (2-tailed)	.000	.
	N	90	98

**. Correlation is significant at the 0.01 level (2-tailed).

The p-value from Pearsons Correlation = 0.000 is less than 0.05 = the significance level suggesting that the correlation between both variables is significant at a 5% level of significance. Due to the strong nature of the relationship, the data is regressed and modelled.

(b) Regression analysis: motivation and productivity before change

The results of the regression analysis are displayed in tables 4-29 to 4-32 and graphs 4-9 to 4-12 :

TABLE 4-29: BEFORE CHANGE REGRESSION ANALYSIS, R SQUARE RESULTS OF MOTIVATION AND PRODUCTIVITY

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.715[a]	.511	.506	4.04481

a. Predictors: (Constant), MOTBTOT

As can be seen from the above model R^2 equals 0,511 which is a measure of the percentage of the variability within the dependent variable (namely productivity) that can be explained by the model, in other words with knowledge of a motivation score, 51.1 per cent of the variability in productivity can be explained.

TABLE 4-30: BEFORE CHANGE REGRESSION ANALYSIS, ANOVA RESULTS OF MOTIVATION AND PRODUCTIVITY

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1506.777	1	1506.777	92.099	.000[a]
	Residual	1439.723	88	16.360		
	Total	2946.500	89			

a. Predictors: (Constant), MOTBTOT

b. Dependent Variable: PRODBTOT

As can be seen the p-value = 0.000 < .05 = significance level. The developed model is therefore significant at a 5% level.

TABLE 4-31: BEFORE CHANGE REGRESSION ANALYSIS, COEFFICIENT RESULTS OF MOTIVATION AND PRODUCTIVITY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	6.478	2.368		2.736	.008
	MOTBTOT	.525	.055	.715	9.597	.000

a. Dependent Variable: PRODBTOT

The mathematical linear regression model is described in table 4-31. Note that the constant term and the regressor term in the model is significant according to the t-test.

Y = 6.478 + 0.525x

The model diagnostics reveal the following plots :

First a check is done to determine whether the assumption of normality of residuals holds true.

FIGURE 4-9: BEFORE CHANGE REGRESSION ANALYSIS (MOTIVATIONAND PRODUCTIVITY), HISTOGRAM PLOT RESIDUALS

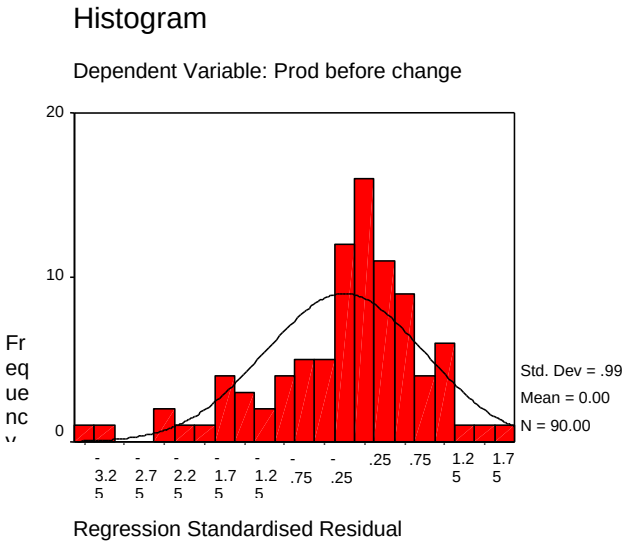
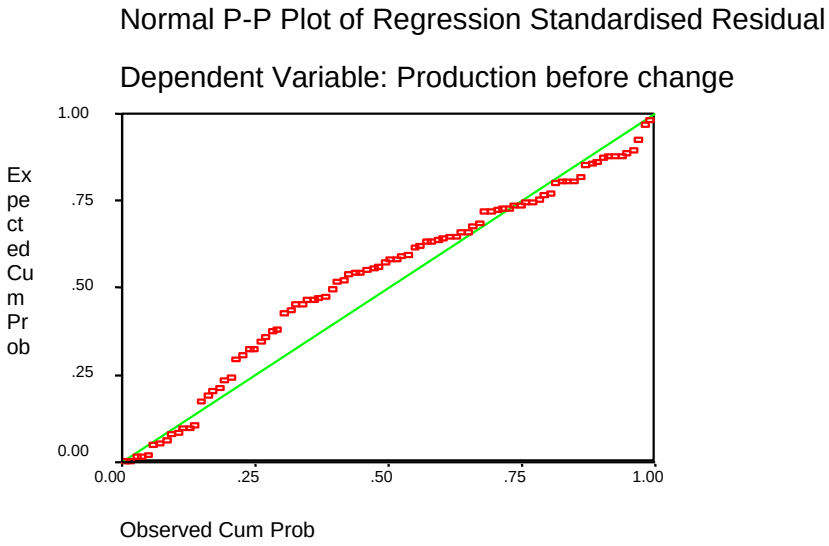


FIGURE 4-10: BEFORE CHANGE REGRESSION ANALYSIS (MOTIVATION AND PRODUCTIVITY), NORMAL PROBABILITY PLOT RESIDUALS



As can be seen from both the histogram of residuals and the normal probability plot the residuals seem to have a normal distribution .

This is further substantiated by performing a Kolmogorov Test for normality , the results of which are highlighted below.

TABLE 4-32: BEFORE CHANGE REGRESSION ANALYSIS (MOTIVATION AND PRODUCTIVITY), KOLMOGOROV TEST OF RESIDUALS

One-Sample Kolmogorov-Smirnov Test

		Standardized Residual
N		90
Normal Parameters [a,b]	Mean	.0000000
	Std. Deviation	.99436615
Most Extreme Differences	Absolute	.129
	Positive	.074
	Negative	-.129
Kolmogorov-Smirnov Z		1.226
Asymp. Sig. (2-tailed)		.099

a. Test distribution is Normal.

b. Calculated from data.

The p-value equals 0.099 which is not less than 0.05 indicating there is not sufficient evidence to reject the possibility of normality of residuals.

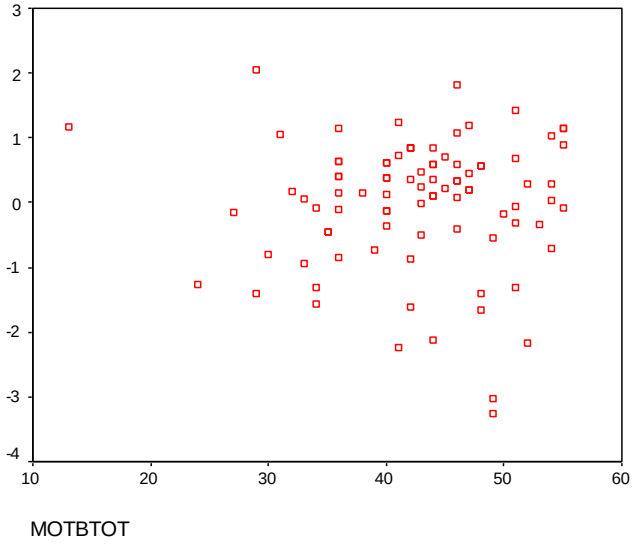
Further diagnostics on the model are run by running the standard residual plots : i.e :

a) Standardised residuals vrs predicted values.

b) Standardised residuals vrs the first independent variable.

FIGURE 4.11: BEFORE CHANGE REGRESSION ANALYSIS (MOTIVATION AND PRODUCTIVITY), STANDARDISES RESIDUALS VERSUS UNSTANDARDISED

FIGURE 4-12: BEFORE CHANGE REGRESSION ANALYSIS (MOTIVATION AND PRODUCTIVITY) STANDARDIZED RESIDUALS VERSUS MOTIVATION VALUES



There does not seem to be any significant patterns of assumption violation from any of the three diagrams per model.

(c) Correlation analysis: Motivation and productivity after change

The results of the correlation analysis after change management are portrayed below :

Pearsons Correlation coefficient is calculated and the results are reflected below:

TABLE 4-33: DESCRIPTIVE STATISTICS AFTER CHANGE: OVERALL TOTAL MEANS OF MOTIVATION AND PRODUCTIVITY

Descriptive Statistics

	Mean	Std. Deviation	N
MOTPTOT	38.2796	9.40209	93
PRODPTOT	27.4343	5.68414	99

TABLE 4-34: PEARSON'S CORRELATION COEFFICIENT OF MOTIVATION AND PRODUCTIVITY (AFTER CHANGE)

Correlations

		MOTPTOT	PRODPTOT
MOTPTOT	Pearson Correlation	1	.441**
	Sig. (2-tailed)	.	.000
	N	93	87
PRODPTOT	Pearson Correlation	.441**	1
	Sig. (2-tailed)	.000	.
	N	87	99

**. Correlation is significant at the 0.01 level (2-tailed).

The p-value from Pearson's Correlation = 0.000 is less than 0.05 = the significance level suggesting that the correlation between both variables is significant at a 5% level of significance. Due to the strong nature of the relationship, the data is regressed and modelled.

(d) Regression analysis: motivation and productivity after change

"Regression analysis is concerned with quantifying the underlying structural relationship between variables" Wegner (2002:302). Regression analysis will be applied to the motivation and production variables.

The results of the regression analysis are displayed in tables 4-35 to 4-37:

TABLE 4-35: AFTER CHANGE REGRESSION ANALYSIS, R-SQUARE RESULTS OF MOTIVATION AND PRODUCTIVITY

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.441[a]	.194	.185	5.20604

a. Predictors: (Constant), MOTPTOT

As can be seen from table 4-35 model R^2 equals 0,194 which is a measure of the percentage of the variability within the dependent variable (namely productivity) that can be explained by the model , in other words with knowledge of a motivation score, 19.4 per cent of the variability in productivity can be explained.

TABLE 4-36: AFTER CHANGE REGRESSION ANALYSIS, ANOVA RESULTS OF MOTIVATION AND PRODUCTIVITY

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	555.868	1	555.868	20.510	.000[a]
	Residual	2303.741	85	27.103		
	Total	2859.609	86			

a. Predictors: (Constant), MOTPTOT

b. Dependent Variable: PRODPTOT

As can be seen the p value = 0.000 < 0.05 = significance level, therefore the developed model is significant at a 5 per cent level.

TABLE 4-37: AFTER CHANGE REGRESSION ANALYSIS, COEFFICIENT RESULTS OF MOTIVATION AND PRODUCTIVITY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	16.472	2.507		6.570	.000
	MOTPTOT	.284	.063	.441	4.529	.000

a. Dependent Variable: PRODPTOT

The mathematical linear regression model is described above. Note that the constant term and the regressor term in the model is significant according to the t-test.

4.5.2 Correlation and regression analysis of job satisfaction and productivity before and after change

The following section will analyse job satisfaction and productivity by regression and correlation analysis, before and after change.

(a) Correlation analysis: job satisfaction and productivity before change

Correlation analysis techniques are applied to establish whether any significant relationships exist between the job satisfaction and productivity levels and if relationships exist and are significant regression techniques are applied to try and model those relationships.

The results of the correlation analysis before change management are portrayed below.

Pearsons Correlation coefficient is calculated.

TABLE 4-38: PEARSONS CORRELATION COEFFICIENT OF JOB SATISFACTION AND PRODUCTIVITY (BEFORE CHANGE)

Correlations

		JSBTOTAL	PRODBTOT
JSBTOTAL	Pearson Correlation	1	.541**
	Sig. (2-tailed)	.	.000
	N	95	87
PRODBTOT	Pearson Correlation	.541**	1
	Sig. (2-tailed)	.000	.
	N	87	98

**. Correlation is significant at the 0.01 level (2-tailed).

The p-value from Pearsons = 0.000 is less than 0.05 = the significance level suggesting that the correlation between both variables is significant at a 5% level of significance. Due to the nature of the relationship, the data is regressed and modelled.

(b) Regression analysis: job satisfaction and productivity before change

The results of the regression analysis are displayed below:

TABLE 4-39: BEFORE CHANGE REGRESSION ANALYSIS, R SQUARE RESULTS OF JOB SATISFACTION AND PRODUCTIVITY

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.541[a]	.292	.284	5.26507

a. Predictors: (Constant), JSBTOTAL

As can be seen from the above model R^2 equals 0,292 which is a measure of the percentage of the variability within the dependent variable (namely productivity) that can be explained by the model, in other words with knowledge of a job satisfaction score , 29.2 per cent of the variability in productivity can be explained.

TABLE 4-40: BEFORE CHANGE REGRESSION ANALYSIS, ANOVA RESULTS OF JOB SATISFACTION AND PRODUCTIVITY

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	972.573	1	972.573	35.084	.000[a]
	Residual	2356.277	85	27.721		
	Total	3328.851	86			

a. Predictors: (Constant), JSBTOTAL

b. Dependent Variable: PRODBTOT

As can be seen the p-value = 0.000 $\leq$ 0.05 = significance level, therefore the developed model is significant at a 5% level.

TABLE 4-41: BEFORE CHANGE REGRESSION ANALYSIS, COEFFICIENT RESULTS OF JOB SATISFACTION AND PRODUCTIVITY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	14.258	2.516		5.666	.000
	JSBTOTAL	.456	.077	.541	5.923	.000

a. Dependent Variable: PRODBTOT

The mathematical linear regression model is described above. Note that the constant term and the regressor term in the model is significant according to the t-test.

(c) Correlation analysis: job satisfaction and productivity after change

Correlation and regression analysis will be done to quantify and describe the relationship of job satisfaction and productivity after change. The results of the correlation analysis after change management are portrayed below:

Pearsons Correlation coefficient is calculated.

TABLE 4-42: PEARSONS CORRELATION COEFFICIENT OF JOB SATISFACTION AND PRODUCTIVITY (AFTER CHANGE)

Correlations

		JSPTOTAL	PRODPTOT
JSPTOTAL	Pearson Correlation	1	.473**
	Sig. (2-tailed)	.	.000
	N	92	87
PRODPTOT	Pearson Correlation	.473**	1
	Sig. (2-tailed)	.000	.
	N	87	99

**. Correlation is significant at the 0.01 level (2-tailed).

The p-values from Pearsons correlation coefficient = 0.000 is less than 0.05 = the significance level suggesting that the correlation between both variables is

significant at a 5% level of significance. Due to the nature of the relationship, the data is regressed and modeled.

(d) Regression analysis: job satisfaction and productivity after change

The results of the regression analysis are displayed in table 4-43:

TABLE 4-43: AFTER CHANGE REGRESSION ANALYSIS, R SQUARE RESULTS OF JOB SATISFACTION AND PRODUCTIVITY

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.473[a]	.224	.215	5.19870

a. Predictors: (Constant), JSPTOTAL

As can be seen from the above model R^2 equals 0,224 which is a measure of the percentage of the variability within the dependent variable (namely productivity) that can be explained by the model , in other words with knowledge of a job satisfaction score , 22.4 per cent of the variability in productivity can be explained.

TABLE 4-44: AFTER CHANGE REGRESSION ANALYSIS, ANOVA RESULTS OF JOB SATISFACTION AND PRODUCTIVITY

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	662.500	1	662.500	24.513	.000[a]
	Residual	2297.247	85	27.026		
	Total	2959.747	86			

a. Predictors: (Constant), JSPTOTAL

b. Dependent Variable: PRODPTOT

As can be seen the p-value = 0.000 $\leq$ 0.05 = significance level, therefore the developed model is significant at a 5% level.

TABLE 4-45: AFTER CHANGE REGRESSION ANALYSIS, COEFFICIENT RESULTS OF JOB SATISFACTION AND PRODUCTIVITY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	17.133	2.101		8.156	.000
	JSPTOTAL	.351	.071	.473	4.951	.000

a. Dependent Variable: PRODPTOT

The mathematical linear regression model is described in table 4-45. Note that the constant term and the regressor term in the model is significant according to the t-test.

Various model diagnostics are now conducted to check if any of the assumptions have been violated. The assumption is checked of whether normality of residuals holds true.

4.5.3 Correlation and regression analysis of motivation / job satisfaction combined and productivity before and after change

Correlation analysis techniques are applied to establish whether any significant relationships exist between the combined motivation and job satisfaction score and productivity levels. This analysis will decribe this relationship. Significant regression techniques are applied to try and model those relationships too.

(a) Correlation analysis: motivation / job satisfaction combined and productivity before change

Correlation and regression methods are applied to quantify and describe the relationship of motivation/ job satisfaction combined and productivity before change occurred with the organization.

The results of the correlation analysis before change management are portrayed below :

Pearsons Correlation coefficient is calculated.

TABLE 4-46: PEARSON'S CORRELATION COEFFICIENT OF MOTIVATION. JOB SATISFACTION COMBINED AND PRODUCTIVITY (BEFORE CHANGE)

Correlations

		PRODBTOT	JSMOBTOT
PRODBTOT	Pearson Correlation	1	.716**
	Sig. (2-tailed)	.	.000
	N	98	82
JSMOBTOT	Pearson Correlation	.716**	1
	Sig. (2-tailed)	.000	.
	N	82	88

**. Correlation is significant at the 0.01 level (2-tailed).

The p -alues from Pearson's = 0.000 is less than 0.05 = the significance level suggesting that the correlation between both variables is significant at a 5% level of significance. Due to the strong nature of the relationship, the data is regressed and modelled.

(b) Regression analysis: motivation / job satisfaction combined and productivity before change

The results of the regression analysis are displayed in tab;es 4-47 to4-49 :

TABLE 4-47: BEFORE CHANGE REGRESSION ANALYSIS, R SQUARE RESULTS OF MOTIVATION / JOB SATISFACTION COMBINED AND PRODUCTIVITY

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.716[a]	.512	.506	4.20033

a. Predictors: (Constant), JSMOBTOT

As can be seen from the above model R^2 equals 0,512 which is a measure of the percentage of the variability within the dependent variable (namely productivity) that can be explained by the model , in other words with

knowledge of a combined motivation and job satisfaction score , 51.2 per cent of the variability in productivity can be explained.

TABLE 4-48: BEFORE CHANGE REGRESSION ANALYSIS, ANOVA RESULTS OF MOTIVATION / JOB SATISFACTION COMBINED AND PRODUCTIVITY

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1482.188	1	1482.188	84.011	.000[a]
	Residual	1411.422	80	17.643		
	Total	2893.610	81			

a. Predictors: (Constant), JSMOBTOT

b. Dependent Variable: PRODBTOT

As can be seen the p value = 0.000 $<$ 0.05 = significance level, therefore the developed model is significant at a 5 per cent level.

TABLE 4-49: BEFORE CHANGE REGRESSION ANALYISIS, COEFFICIENT RESULTS OF MOTIVATION / JOB SATISFACTION COMBINED AND PRODUCTIVITY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.159	2.624		1.966	.053
	JSMOBTOT	.318	.035	.716	9.166	.000

a. Dependent Variable: PRODBTOT

The mathematical linear regression model is described in table 4-49. Note that the constant term is not significant and the regressor term in the model is significant according to the t-test.

(c) Correlation analysis: motivation / job satisfaction combined and productivity after change

The results of the correlation analysis after change management are portrayed below. Pearson's Correlation coefficient is calculated and the results are reflected in table 4-50.

TABLE 4-50: PEARSONS CORRELATION COEFFICIENT OF MOTIVATION / JOB SATISFACTION COMBINED AND PRODUCTIVITY (AFTER CHANGE)

Correlations

		PRODPTOT	JSMOPTOT
PRODPTOT	Pearson Correlation	1	.521**
	Sig. (2-tailed)	.	.000
	N	99	80
JSMOPTOT	Pearson Correlation	.521**	1
	Sig. (2-tailed)	.000	.
	N	80	84

**. Correlation is significant at the 0.01 level (2-tailed).

The p-values from Pearsons Correlation Coefficient = 0.000 is less than 0.05 = the significance level suggesting that the correlation between both variables is significant at a 5 per cent level of significance. Due to the strong nature of the relationship, the data is regressed and modeled.

(d) Regression analysis: motivation / job satisfaction combined and productivity after change

The results of the regression analysis applied to motivation/ job satisfaction combined and productivity are displayed below :

TABLE 4.51: AFTER CHANGE REGRESSION ANALYSIS, R SQUARE RESULTS OF MOTIVATION / JOB SATISFACTION COMBINED AND PRODUCTIVITY

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.521[a]	.272	.262	5.07538

a. Predictors: (Constant), JSMOPTOT

As can be seen from the above model R^2 equals 0,272 which is a measure of the percentage of the variability within the dependent variable (namely productivity) that can be explained by the model, in other words with

knowledge of a combined motivation and job satisfaction score , 27.2 per cent of the variability in productivity can be explained.

TABLE 4-52: AFTER CHANGE REGRESSION ANALYSIS, ANOVA RESULTS OF MOTIVATION / JOB SATISFACTION COMBINED AND PRODUCTIVITY

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	749.246	1	749.246	29.086	.000[a]
	Residual	2009.241	78	25.760		
	Total	2758.487	79			

a. Predictors: (Constant), JSMOPTOT

b. Dependent Variable: PRODPTOT

As can be seen the p-value = 0.000 $\leq$ 0.05 = significance level, therefore the developed model is significant at a 5% level.

TABLE 4-53: AFTER CHANGE REGRESSION ANALYSIS, COEFFICIENT RESULTS OF MOTIVATION / JOB SATISFACTION COMBINED AND PRODUCTIVITY

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	13.615	2.611		5.214	.000
	JSMOPTOT	.203	.038	.521	5.393	.000

a. Dependent Variable: PRODPTOT

The mathematical linear regression model is described in table 4-53. Note that the constant term is significant and the regressor term in the model is significant according to the t-test.

4.6 VALIDITY AND RELIABILITY ANALYSIS

To ensure confidence in the measuring instrument used, a validity and reliability assessment has been done.

Reliability analysis (refer to Chapter 3) is conducted using Cronbach Alpha test. This is a model of internal consistency, based on the average inter-item correlation. If the Alpha value is greater than 0.6 , then the model will prove to be internally consistent.

The three variables used in the questionnaire that were tested are:

- Job satisfaction (Questions 1- 9)
- Productivity (Questions 10 – 17)
- Motivation (Questions 18-39)

The above are tested twice: before and after change.

4.6.1 Reliability tests

Reliability testing of the measuring instrument for the constructs of job satisfaction, productivity and motivation before and after change has been carried out is summarized as follows:

TABLE 4-54: RELIABILTITY TESTS BEFORE AND AFTER CHANGE

Before change	**After change**
Job satisfaction: alpha above 0.6 at 0.8222	Job satisfaction: alpha above 0.6 at 0.8599
Productivity: alpha is above 0.6 at 0.8027	Productivity: alpha is above 0.6 at 0.7169
Motivation: alpha above 0.6 at 0.9132	Motivation: alpha above 0.6 at 0.9154

Alpha is above 0.6, which reflects a reliable measuring instrument for these constructs.

4.6.2 Validity tests

The validity of the measuring instrument was tested before and after change for the constructs of job satisfaction, productivity and motivation. The results are summarized and displayed below:

TABLE 4-55: VALIDITY TESTS

Before change	**After change**
Job Satisfaction: KMO = 0.766 Variance explained by factors extracted: 74.65% 3 components	Job Satisfaction: KMO = 0.767 Variance explained by factors extracted: 75.3% 3 components
Productivity: KMO = 0.813 Variance explained by factors extracted: 56.41% 2 components	Productivity: KMO = 0.607 Variance explained by factors extracted: 63.57% 3 components
Motivation: KMO =0.798 Variance explained by factors extracted: 70.63% 6 components	Motivation: KMO = 0.837 Variance explained by factors extracted: 71.7% 6 components

Validity: good when KMO > 0.6. KMO's all above 0.6.

Validity test components are as follows:

TABLE 4-56: VALIDITY TESTS: COMPONENTS

Job satisfaction

Before change	**After change**
1. Recognition	1. Recognition
2. Compensation	2. Compensation
3. Supervision	3. Supervision

Productivity

Before change	**After change**
1. Management	1. General/ various
2. Method	2. Quality
	3. Method

Motivation

Before change	**After change**
1. Expectancies	1. Outcomes
2. Outcomes	2. Expectancies
3.People	3. Self development
4. Management	4. People
5. Pay	5. Other
6. Job security	6.Pay

Above components are confirmed as components of variables in used questionnaires and/ or literature review.

4.6.3 Details of reliability and validity tests, before and after change, by variable

Reliability and validity tests of instrumentation are done for constructs of productivity, job satisfaction and motivation, both before and after change.

(a) Productivity

The variable of productivity will now be tested for reliability and validity, before and after change.

(i) Reliability: productivity before change

Reliability, before change will now be tested as follows:

TABLE 4-57: ITEM-TOTAL STATISTICS BEFORE CHANGE: PRODUCTIVITY

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM TOTAL CORRELATION	ALPHA IF ITEM DELETED
B10B	24.9592	30.6581	0.3518	0.8024
B11B	25.2755	27.047	0.5821	0.7698
B12B	24.9592	27.689	0.5139	0.7808
B13B	25.2347	27.2124	0.5613	0.7731
B14B	25.1122	29.1728	0.4923	0.784
B15B	25.2857	27.3196	0.5259	0.779
B16B	25.0408	27.5653	0.5765	0.7711
B17B	25.3469	28.6619	0.5013	0.7825

Reliability Coefficients

N of Cases = 98.0 N of Items = 8

Alpha = .8027

Alpha is above 0.6. This indicates a reliable measuring instrument for this construct.

(ii) Reliability: productivity after change

Reliability of measuring instrument of the construct of productivity, after change will now be tested as follows:

TABLE 4-58: ITEM TOTAL STATISTICS AFTER CHANGE: PRODUCTIVITY

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM TOTAL CORRELATION	ALPHA IF ITEM DELETED
B10P	23.9293	26.3317	0.3736	0.6958
B11P	23.798	26.571	0.3563	0.6993
B12P	23.7778	25.0113	0.4383	0.6822
B13P	23.9192	23.7077	0.5634	0.6538
B14P	24.1515	26.3748	0.3669	0.6972
B15P	24.2626	25.2773	0.3705	0.6985
B16P	24.0404	25.182	0.4516	0.6795
B17P	24.1616	27.443	0.3432	0.7014

Reliability Coefficients

N of Cases = 99.0 N of Items = 8

Alpha = 0.7169

Alpha is above 0.6 which reflects a reliable measuring instrument for this construct.

(iii) Validity testing: Productivity before change

Validity analysis of the measuring instrument used for the construct of productivity, before change, are displayed below:

TABLE 4-59: KMO AND BARTLETT'S TEST: PRODUCTIVITY BEFORE CHANGE

Kaiser-Meyer-Olkin Measure of Adequacy		.813
Bartlett's Test Sphericit	Approx. Chi-	197.88
	df	28
	Sig.	.000

TABLE 4-60: VARIANCE EXPLAINED: PRODUCTIVITY BEFORE CHANGE

	Initial			Extraction Sums of			Rotation Sums of		
Comp	Tot	% of	Cumula	Tot	% of	Cumula	Tot	% of	Cumula
1	3.3	42.	42.	3.3	42.	42.	2.3	29.	29.
2	1.1	14.	56.	1.1	14.	56.	2.1	26.	56.
3	.8	10.	66.						
4	.7	8.8	75.						
5	.5	7.2	82.						
6	.5	6.9	89.						
7	.4	5.4	95.						
8	.3	4.7	100.						

Extraction Method:

TABLE 4-61: ROTATED COMPONENT MATRIX: PRODUCTIVITY BEFORE CHANGE

	Compone	
	1	2
B10	.80	
B11	.65	
B12		.52
B13	.65	
B14		.84
B15		.80
B16	.57	
B17	.59	

Extraction Method: Principal Component
Rotation Method: Varimax with Kaiser
a. Rotation converged in 3

From Above KMO =0.813 (This is good as it is greater than 0.6)

Variance Explained by the factors extracted = 56.41%

Components 3: Productivity before change

Productivity

Before change
1. Management
2. Method

Factors that affect productivity are listed by Stevenson (1999:41) as: Methods, Capital, Quality, Technology and management. The questions on productivity relate to the above factors that affect productivity as follows:

10,11,13,16,17

12,14,15

TABLE 4-62: QUESTIONS RELATING TO PRODUCTIVITY FACTORS

Q10 – method and quality
Q11 – Capital and technology
Q12 – Quality and method
Q13- Management and method
Q14 – method
Q15 – Method
Q16 – Management
Q17 – Method and quality

(iv) Validity testing: productivity after change

TABLE 4-63: KMO AND BARTLETT'S TEST: PRODUCTIVITY AFTER CHANGE

Kaiser-Meyer-Olkin Measure of Adequacy		.607
Bartlett's Test Sphericit	Approx. Chi-	161.55
	df	28
	Sig.	.000

TABLE 4-64: TOTAL VARIANCE EXPLAINED: PRODUCTIVITY AFTER CHANGE

	Initial			Extraction Sums of			Rotation Sums of		
Comp	To	% of	Cumula	To	% of	Cumula	To	% of	Cumula
1	2.7	33.	33.	2.7	33.	33.	1.8	22.	22.
2	1.3	16.	50.	1.3	16.	50.	1.6	21.	44.
3	1.0	12.	63.	1.0	12.	63.	1.5	19.	63.
4	.8	11.	74.						
5	.6	8.5	83.						
6	.5	6.9	90.						
7	.5	6.4	96.						
8	.2	3.5	100.						

Extraction Method:

TABLE 4-65: ROTATED COMPONENT MATRIX: PRODUCTIVITY AFTER CHANGE

	Component		
	1	2	3
B10		.77	
B11	.51		
B12	.85		
B13	.74		
B14			.84
B15			.83
B16		.54	
B17		.82	

Extraction Method: Principal Component
Rotation Method: Varimax with Kaiser
a. Rotation converged in 5

From Above KMO =0.607 (This is good as it is bigger than 0.6)

Variance Explained by the factors extracted = 63.57%

Components 3: Productivity after change

Productivity

After change
1. General/ various
2. Quality
3. Method

Factors that affect productivity (Stevenson, 1999:41): Methods, Capital, Quality, Technology and management.

The questions on productivity relate to the above factors as follows:

TABLE 4-66: QUESTIONS RELATING TO PRODUCTIVITY FACTORS

Q10 – method and quality
Q11 – Capital and technology
Q12 – Quality and method
Q13- Management and method
Q14 – method
Q15 – Method
Q16 – Management
Q17 – Method and quality

(b) Reliability and validity tests: job satisfaction

Reliability tests will be done before and after change on job satisfaction variable to check reliability as a measuring instrument for this construct.

(i) Reliability test: job satisfaction before change

Reliability testing of the measuring instrument for the construct of job satisfaction before change will be carried out as follows:

TABLE 4-67: ITEM TOTAL STATISTICS BEFORE CHANGE: JOB SATISFACTION

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM TOTAL CORRELATION	ALPHA IF ITEM DELETED
B1B	28.2316	40.2437	0.5853	0.7967
B2B	28.0947	41.5122	0.5457	0.8017
B3B	28.1368	41.2045	0.5589	0.8002
B4B	28.0842	44.9077	0.3414	0.8237
B5B	28.3474	42.3142	0.4271	0.8163
B6B	28.5053	44.3590	0.3246	0.8274
B7B	28.2211	38.9400	0.6828	0.7844
B8B	28.2316	39.9884	0.6082	0.7938
B9B	28.2947	39.9548	0.6504	0.7893

Reliability Coefficients

N of Cases = 95.0 N of Items = 9

Alpha = 0.8222

Chronbach Alpha is above 0.6. This indicates a reliable measuring instrument for this construct.

(ii) Reliability test: job satisfaction after change

Analysis will be carried out to check reliability of the measuring instrument for the construct of job satisfaction.

TABLE 4-68: ITEM-TOTAL STATISTICS AFTER CHANGE: JOB SATISFACTION

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM TOTAL CORRELATION	ALPHA IF ITEM DELETED
B1P	25.1196	52.9636	0.5762	0.8461
B2P	25.1087	53.1968	0.5203	0.8513
B3P	25.1522	51.9986	0.6133	0.8425
B4P	25.2500	54.6511	0.4319	0.8597
B5P	25.5326	49.6802	0.6554	0.8379
B6P	25.4239	50.8843	0.5891	0.8449
B7P	25.0326	50.2737	0.6686	0.8368
B8P	24.8587	52.0128	0.6229	0.8417
B9P	25.0435	52.0201	0.6021	0.8435

Reliability Coefficients

N of Cases = 92.0 N of Items = 9

Alpha = .8599

Chronbach Alpha is above 0.6. This indicates a reliable measuring instrument for this construct.

(iii) Validity test: job satisfaction before and after change

Validity testing of instrumentation used for construct of Job satisfaction as follows:

(iv) Validity test: job satisfaction before change

Validity tests will be carried out on measuring instrument used fir job satisfaction construct as follows:

TABLE 4-69: KMO AND BARTLETT'S TEST: JOB SATISFACTION BEFORE CHANGE

Kaiser-Meyer-Olkin Measure of Adequacy		.766
Bartlett's Test Sphericit	Approx. Chi-	405.25
	df	36
	Sig.	.000

TABLE 4-70: TOTAL VARIANCE EXPLAINED: JOB SATISFACTION BEFORE CHANGE

	Initial			Extraction Sums of			Rotation Sums of		
Comp	To	% of	Cumul	To	% of	Cumul	To	% of	Cumul
1	3.8	42.	42.	3.8	42.	42.	2.4	27.	27.
2	1.8	20.	63.	1.8	20.	63.	2.3	25.	52.
3	1.0	11.	74.	1.0	11.	74.	1.9	21.	74.
4	.7	8.8	83.						
5	.3	4.4	87.						
6	.3	4.1	92.						
7	.2	3.1	95.						
8	.2	2.5	97.						
9	.1	2.2	100.						

Extraction Method:

TABLE 4-71: ROTATED COMPONENT MATRIX: JOB SATISFACTION BEFORE CHANGE

	Compone		
	1	2	3
B1B	.825		
B2B	.887		
B3B	.853		
B4B			.572
B5B			.860
B6B			.891
B7B		.819	
B8B		.833	
B9B		.841	

Extraction Method: Principal Component
Rotation Method: Varimax with Kaiser

a. Rotation converged in 5

From Above KMO =0.766 (This is good as it is bigger than 0.6)

Variance Explained by the factors extracted = 74.65%

3 **Components :** Job satisfaction before change

Before change
1. Recognition
2. Compensation
3. Supervision

(v) Validity test: job satisfaction, after change

Validity testing for measuring instrument for the construct of Job Satisfaction, after change, are as follows:

TABLE 4-72: KMO AND BARTLETT'S TEST: JOB SATISFACTION AFTER CHANGE

Kaiser-Meyer-Olkin Measure of Adequac		.76
Bartlett's Sphericit	Approx. Chi-	409.05
	df	36
	Sig.	.00

TABLE 4-73: TOTAL VARIANCE EXPLAINED: JOB SATISFACTION AFTER CHANGE

	Initial			Extraction Sums of			Rotation Sums of		
Compo	Tot	% of	Cumulati	Tot	% of	Cumulati	Tot	% of	Cumulati
1	4.28	47.5	47.5	4.28	47.5	47.5	2.44	27.2	27.2
2	1.30	14.5	62.1	1.30	14.5	62.1	2.18	24.2	51.4
3	1.18	13.1	75.3	1.18	13.1	75.3	2.14	23.8	75.3
4	.63	7.06	82.3						
5	.52	5.80	88.1						
6	.40	4.47	92.6						
7	.26	2.92	95.5						
8	.22	2.47	98.0						
9	.17	1.95	100.0						

Extraction Method: Principal

TABLE 4-74: ROTATED COMPONENT MATRIX: JOB SATISFACTION AFTER CHANGE

	Compon		
	1	2	3
B1			.79
B2			.88
B3			.68
B4		.76	
B5		.80	
B6		.81	
B7	.82		
B8	.78		
B9	.86		

Extraction Method: Principal
Rotation Method: Varimax with Kaiser
a. Rotation converged in 5

From Above KMO =0.767 (This is good as it is greater than 0.6)

Variance Explained by the factors extracted = 75.3%

Components : Job satisfaction after change

After change
1. Recognition
2. Compensation
3. Supervision

(c) Reliability and validity tests: motivation

Reliability and validity tests on measuring instrument for the motivation construct, before and after change are as follows:

(i) Reliability tests, before change: motivation

Reliability tests are done to check reliability of measurement instrument for construct of Motivation, before change is as follows:

TABLE 4-75: ITEM TOTAL STATISTICS BEFORE CHANGE: MOTIVATION

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM TOTAL CORRELATION	ALPHA IF ITEM DELETED
B18B	81.8837	178.104	0.2996	0.916
B19B	81.5349	176.487	0.5324	0.9098
B20B	81.7674	172.7453	0.6137	0.908
B21B	81.7093	176.6792	0.4582	0.9112
B22B	81.8721	170.7246	0.651	0.9071
B23B	82.3605	166.845	0.656	0.9068
B24B	81.9302	173.0774	0.6716	0.9072
B25B	82.1395	171.2979	0.5853	0.9085
B26B	81.8256	171.3692	0.6731	0.9068
B27B	82.0233	171.8112	0.5561	0.9092
B28B	81.9767	171.5289	0.6334	0.9075
B29B	81.7791	177.8447	0.3514	0.914
B30B	81.9302	178.1363	0.397	0.9125
B31B	81.8256	172.4045	0.5424	0.9095
B32B	81.7674	175.5688	0.466	0.9111
B33B	81.9302	172.7951	0.5875	0.9085
B34B	82.0465	172.7951	0.5248	0.9099
B35B	81.8372	174.2791	0.6319	0.908
B36B	82.1047	175.6713	0.478	0.9108
B37B	81.8256	174.8516	0.6013	0.9085
B38B	81.8488	172.6004	0.6245	0.9078
B39B	81.8488	175.3709	0.5733	0.909

Reliability Coefficients

No. of Cases = 86.0 N of Items = 22

Alpha = .9132

Chronbach Alpha is above 0.6. This indicates a reliable measuring instrument for this construct.

(ii) Reliability tests, after change: motivation

Reliability tests will be done to check reliability of measuring the construct of motivation, after change are displayed in tables 4-76 to 4-79:

TABLE 4-76: ITEM-TOTAL STATISTICS AFTER CHANGE: MOTIVATION,

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM TOTAL CORRELATION	ALPHA IF ITEM DELETED
B18P	69.5542	210.5184	0.2843	0.919
B19P	68.506	204.1555	0.5471	0.9118
B20P	68.5783	199.8078	0.687	0.9086
B21P	69.0723	198.0923	0.6378	0.9096
B22P	68.9157	197.4684	0.6944	0.9082
B23P	69.3373	200.836	0.5847	0.9109
B24P	68.9398	199.35	0.7693	0.9071
B25P	69.1205	200.7902	0.5844	0.9109
B26P	68.6747	205.149	0.5576	0.9116
B27P	68.9157	204.2001	0.5126	0.9127
B28P	68.8072	208.1331	0.4599	0.9137
B29P	68.3253	212.2465	0.2987	0.9174
B30P	68.6265	206.1149	0.581	0.9112
B31P	68.6145	200.4593	0.624	0.91
B32P	68.7952	198.7014	0.6357	0.9096
B33P	68.6265	200.4564	0.6917	0.9086
B34P	69	197.3171	0.6565	0.9091
B35P	68.6747	204.4904	0.6552	0.9099
B36P	68.6747	205.9539	0.488	0.9132
B37P	68.4819	209.2527	0.4802	0.9132

Reliability Coefficients

No. of Cases = 83.0 N of Items = 20

Alpha = .9154

Chronbach Alpha is above 0.6. This indicates a reliable measuring instrument for this construct.

(iii) Validity tests: motivation, before change

Validity test on measuring instrument for construct of Motivation, before change are as follows:

TABLE 4-77: KMO AND BARTLETT'S TEST: MOTIVATION, BEFORE CHANGE

Kaiser-Meyer-Olkin Measure of Adequac		.79
Bartlett's Spherici	Approx. Chi-	1057.83
	df	23
	Sig	.00

TABLE 4-78: TOTAL VARIANCE EXPLAINED: MOTIVATION, BEFORE CHANGE

	Initial			Extraction Sums of			Rotation Sums of		
Comp	To	% of	Cumul	To	% of	Cumul	To	% of	Cumul
1	8.2	37.	37.	8.2	37.	37.	3.8	17.	17.
2	2.0	9.1	46.	2.0	9.1	46.	2.9	13.	31.
3	1.6	7.4	53.	1.6	7.4	53.	2.7	12.	43.
4	1.4	6.4	60.	1.4	6.4	60.	2.5	11.	55.
5	1.2	5.4	65.	1.2	5.4	65.	1.6	7.6	63.
6	1.0	4.8	70.	1.0	4.8	70.	1.6	7.5	70.
7	.9	4.1	74.						
8	.8	3.9	78.						
9	.6	3.1	81.						
1	.5	2.6	84.						
1	.4	2.2	86.						
1	.4	2.1	88.						
1	.4	1.9	90.						
1	.3	1.6	92.						
1	.3	1.4	94.						
1	.2	1.2	95.						
1	.2	1.0	96.						
1	.2	.9	97.						
1	.1	.8	98.						
2	.1	.7	98.						
2	.1	.6	99.						
2	.0	.4	100.						

Extraction Method:

TABLE 4-79: ROTATED COMPONENT MATRIX: MOTIVATION BEFORE CHANGE

	Compone					
	1	2	3	4	5	6
B18					.71	
B19	.66					
B20	.63					
B21	.75					
B22	.75					
B23	.57					
B24	.54					
B25				.60		
B26	.64					
B27				.66		
B28			.64			
B29						.65
B30						.85
B31		.64				
B32		.58			.59	
B33		.72				
B34		.77				
B35						
B36				.84		
B37			.73			
B38				.57		
B39			.83			

Extraction Method: Principal Component
Rotation Method: Varimax with Kaiser

a. Rotation converged in 8

From Above KMO =0.798 (This is good as it is bigger than 0.6)

Variance Explained by the factors extracted = 70.63%

6 Components : Motivation before change

Before change
1. Expectancies
2. Outcomes
3.People
4. Management
5. Pay
6. Job security

(iv) Validity tests: motivation, after change

Validity testing of measurement instrument used for the motivation construct, after change are displayed in tables 4-80 to 4-82:

TABLE 4-80: KMO AND BARTLETT'S TEST: MOTIVATION, AFTER CHANGE

Kaiser-Meyer-Olkin Measure of Adequac		.83
Bartlett's Spherici	Approx. Chi-	1060.95
	df	23
	Sig	.00

TABLE 4-81: TOTAL VARIANCE EXPLAINED: MOTIVATION AFTER CHANGE

	Initial			Extraction Sums of			Rotation Sums of		
Comp	To	% of	Cumul	To	% of	Cumul	To	% of	Cumul
1	8.7	39.	39.	8.7	39.	39.	4.2	19.	19.
2	2.0	9.2	48.	2.0	9.2	48.	3.1	14.	33.
3	1.6	7.4	56.	1.6	7.4	56.	2.3	10.	44.
4	1.2	5.6	62.	1.2	5.6	62.	2.2	10.	55.
5	1.0	4.9	67.	1.0	4.9	67.	2.2	10.	65.
6	1.0	4.6	71.	1.0	4.6	71.	1.4	6.5	71.
7	.9	4.1	75.						
8	.7	3.5	79.						
9	.6	2.8	82.						
1	.5	2.6	84.						
1	.5	2.3	87.						
1	.4	1.8	89.						
1	.3	1.6	90.						
1	.3	1.5	92.						
1	.3	1.4	93.						
1	.2	1.2	95.						
1	.2	1.1	96.						
1	.2	1.0	97.						
1	.2	.9	98.						
2	.1	.6	98.						
2	.1	.5	99.						
2	.1	.4	100.						

Extraction Method:

TABLE 4-82: ROTATED COMPONENT MATRIX: MOTIVATION AFTER CHANGE

	Compone					
	1	2	3	4	5	6
B18						.80
B19			.68			
B20			.69			
B21		.53				
B22		.55	.53			
B23		.80				
B24		.59				
B25					.74	
B26		.73				
B27					.69	
B28				.68		
B29						.53
B30	.58					
B31	.58					
B32	.75					
B33	.79					
B34	.76					
B35	.81					
B36					.71	
B37				.69		
B38	.50					
B39				.88		

Extraction Method: Principal Component
Rotation Method: Varimax with Kaiser

a. Rotation converged in 16

From Above KMO =0.837 (This is good as it is bigger than 0.6)

Variance Explained by the factors extracted = 71.7%

Six Components: Motivation after change

After change
1. Outcomes
2. Expectancies
3. Self development
4. People
5. Other
6.Pay

4.7 RESEARCH QUESTION/ HYPOTHESIS ONE

It is hypothesized that there is a positive relationship between employee motivation and organizational productivity within the context of organizational change. This was accepted.

The first sub-problem is to determine the relationship between employee motivation and organizational productivity within the context of organizational change

4.8 RESEARCH QUESTION/ HYPOTHESIS TWO

It is hypothesized that there is a positive relationship between job satisfaction and organizational productivity within the context of change. This was accepted.

The second sub-problem is to determine the relationship between job satisfaction and organizational productivity in the context of organizational change.

4.9 CHAPTER CONCLUSION

All the statistical data for this dissertation has been presented in this chapter. The following chapter will interpret the results of this statistical analysis.

CHAPTER FIVE

INTERPRETATION OF RESULTS

5.1 INTRODUCTION

Three variables were investigated in this study namely job satisfaction, productivity and motivation. All three were evaluated on a perceptual basis of the employees own job satisfaction, productivity and motivation and were evaluated as a perception both before and after the implementation of change. All three variables were subjected to both reliability and validity tests.

The findings were analysed based on the magnitudinal changes in perception across pre-change management to post-change management within all three variables on an overall basis and within certain demographics. As shown in the results, overall there were no significant changes in the levels of production, however, there were significant changes in the levels of both job satisfaction and motivation. From the descriptive tables in chapter four, these changes seem to decrease as a result of change management.

When analysed according to demographics, the variable job satisfaction revealed the following findings. Significant changes were found for those

employees older than 35 years and for those employees employed less than 5 years and for those from the Springs plant. Again the descriptive results showed all these scores to decrease or drop in job satisfaction as a result of change management.

When it came to studying motivation by each demographics, significant changes were found for those employees older than 35 years and for those employed within a range of less than and more than or equal to five years and for those from the Springs plant. Again the descriptive results show all these scores to decrease as a result of change management.

Although production perceptions showed no significant changes overall, there were a few different results when the study analysed the changes by each demographic. In this case, when investigated by age there were no significant changes by age levels. However, in terms of length of service there was a significant change for those employed for less than five years and for those employees employed at the Springs and Cape Town plants. From the descriptive statistics in all these cases the changes have shown a decrease in production perceptions as a result of change management, except in the case of the Cape Town plant which showed a surprising increase in scores. It does, however, need to be noted that this latter location only had nine respondents scoring on productivity.

In conclusion, from the above magnitudinal changes the Springs plant seems to be an area of major concern together with all the older

employees and in some cases those staff members employed for less than five years.

5.2 CORRELATION AND REGRESSION TEST RESULTS

The study also conducted a battery of correlation and regression tests on variables before and after change. The summarised results follow.

5.2.1 Motivation and productivity results before change

r = 0.715

R^2 = 0.511

F = 0.000

t-values are both significant

No assumptions are violated.

5.2.2 Motivation and productivity results after change

r = 0.441

R^2 = 0.19

F = 0.000

t-values are both significant

5.2.3 Job satisfaction and productivity before change

r = 0.541

R^2 = 0.29

F = 0.000

t-values are both significant

5.2.4 Job satisfaction and productivity after change

r = 0.473

R^2 = 0.22

F = 0.000

t-values are both significant

5.2.5 Motivation / job satisfaction combined and productivity before change

r = 0.716

R^2 = 0.51

F = 0.000

t-values are both significant

5.2.6 Motivation / job satisfaction combined and productivity after change

After Change

r = 0.521

R^2 = 0.27

F = 0.000

t-values are both significant

5.2.7 Discussion of correlation and regression results

By conducting the above correlation and regression tests, it is evident that the results were a lot stronger before change. It is also evident that the relationships exhibited between the motivational construct and productivity are the strongest. Taking into consideration the magnitudinal and correlational findings shown above, it is evident that while people were significantly less motivated and satisfied with their jobs as a result of change management, their personal perception of their productivity levels on the whole did not change significantly. Motivation proves to be the strongest construct correlated to productivity, therefore improved motivation and an awareness of the need for change management and productivity should increase.

5.3 DISCUSSION OF RESULTS BY RESEARCH QUESTIONS, HYPOTHESIS

A discussion on the results obtained for each hypothesis now follows**.**

5.3.1 Hypothesis one

It was hypothesised that there is a positive relationship between employee motivation and organisational productivity within the context of organisational change.

5.3.2 Sub-problem one

The first sub-problem is to determine the relationship between employee motivation and organisational productivity within the context of organisational change.

The research has shown a moderate to strong positive correlation coefficient of r = 0.715 before change, and moderate positive relationship after change of r = 0.441. r^2 results were also significant at 51% before and 19.4% after change. It also is interesting to note that the correlation is stronger before change than after change, indicating a weaker relationship between motivation and productivity after change.

This proves that a positive relationship exists between employee motivation and organisational productivity within the context of organisational change. The findings also show that change affected employees motivation levels, which in turn could effect productivity levels.

5.3.3 Hypothesis two

It was hypothesised that there is a positive relationship between job satisfaction and organisational productivity within the context of organisational change.

5.3.4 Sub-problem two

The second sub-problem is to determine the relationship between job satisfaction and organisational productivity within the context of organisational change.

The research done has shown a moderate positive correlation coefficient of $r = 0.541$ before change and moderate positive relationship after change of $r = 0.473$. r^2 results were also significant at 29.2% before and 22.4% after change. It also is interesting to note that the correlation is stronger before change than after, indicating a weaker relationship between job satisfaction and productivity after change.

This proves that a positive relationship exists between job satisfaction and organisational productivity within the context of organisational change. The above research shows that change affected employee's job satisfaction levels, which in turn could effect productivity levels.

5.4 CONCLUDING INTERPRETATIONS

Change has affected most South African businesses during the last few years. Values are now based on performance, in terms of profit, performance, cost reduction and productivity. Research has shown that this does not seem to be shared by many employees (Mc Kinsey, 2003). In the light of the above statement, it is important to understand the research problem: to what extent has the introduction of change affected employee motivation and job satisfaction with reference to organisational productivity?

Magnitudinal findings of motivation showed that employees perceived a drop in motivation levels after change had occurred, particularly in the older than 35 year old age group, at all levels of service and noticeably so in the Springs plant.

Correlational findings also confirm a strong, positive relationship between motivation and productivity, and a weaker relationship between motivation and productivity after change.

The theories of motivation indicate that organisations succeed when employees are emotionally involved and believe in what they are doing. This implies that employees experience psychological satisfaction when they are making a contribution to the success of the organisation. Managers of business need to support motivation of employees by recognizing that people differ and so too should rewards. Leadership should also build social relationships, communicate effectively and be aware of what motivates individual employees (Biesheuvel, 1984; Robbins, 1998; Linder, 1998; Kreitner and Kinicki, 2002; Neely *et. al*, 2002; Schultz, Bagraim, Viedge, Werner and Potgieter, 2003; Stacey, 2003).

Based on the literature review one the drop in motivation can be explained as being due to management not involving employees sufficiently in what they were doing, or allowing employees to feel involved enough in the success of the change. Senior management also seemed to have failed to consider varying employee rewards, better communications and the relationship between management and employees during change, particularly at the Springs plant.

Magnitudinal findings indicate that employees perceived lower job satisfaction levels than before change occurred, particularly within the older than 35 year age group, with less than or equal to five years of employment. This was most noticeable at the Springs plant, where the most change was experienced.

Correlational findings also confirm a positive relationship between job satisfaction and productivity and a weaker relationship between job satisfaction and productivity after change.

Job satisfaction is effected by work, pay, supervision, promotion and fellow employees. Theories on the subject describe job satisfaction as the attitude and response to one's job. Maslow states that as a need is met, a new need emerges to be satisfied. This implies that job satisfaction, productivity and motivation will be lower as needs are met. The AON (2003) study shows that job satisfaction also influences work behaviour and suggests that productivity and quality production are attained through job satisfaction. It is interesting to note an overall low job satisfaction in South Africa (Biesheuvel 1984; Rose, 2001; Kreitner and Kinincki, 2002; Schultz *et al*, 2003).

Taking the above information on job satisfaction into consideration, the Armourplate businesses job satisfaction levels dropped, particularly in Springs due to enormous change and retrenchments occurring within GSA Armourplate. These affected employees perceptions regarding pay, supervision, other employees and their future opportunities. One can therefore deduce that this influenced job satisfaction, which in turn influenced employees' motivation and productivity perception levels. This confirms this study's research in terms of the positive relationship job satisfaction has had on productivity, as well as, the effect of motivation combined with job satisfaction on productivity. GSA management should

note this for more successful future change management initiatives.

Most interesting was the effect on perceptions of productivity over change experienced by employees. Magnitudinal findings of all three plants combined indicated that productivity was perceived to have stayed the same overall, particularly so amongst the less than, and equal to, five year service employee. However, looking at the perceptions of productivity by plant, Springs employees felt productivity had dropped which is where significant change had been experienced. Cape Town employees, where very little change occurred, actually perceived an increase in productivity. Durban employees perceived productivity to have remained at the same level before and after change. Again, change was not experienced as significantly in Durban as the change experienced by Springs employees.

Productivity is the transfer of inputs into outputs at the lowest cost. It includes technical issues, raw materials, layout and employee job performance. As each employee need is met, research indicates a positive relationship between motivation and productivity. The same research also shows that as motivation increases, one can expect productivity to increase, along with job satisfaction (Albano, 2004).

According to the National Productivity Institute of South Africa (NPI), productivity is increasing in South Africa. However, the concern is that this is achieved by decreasing the use of resources or inputs, instead of using the same resources to improve productivity (NPI / Nedlac, 2001).

The literature reviewed confirms that motivation and job satisfaction affect productivity. This is also confirmed by this study's research which has proven a positive relationship between motivation / job satisfaction and productivity in terms of employee perceptions. The research has also shown a particularly strong positive relationship between motivation and productivity. This suggests that people and rewards play an important role in the contribution organisational productivity. More attention needs to be given to Springs Plant employee perceptions of the drop of productivity, where employees experienced the high levels of change.

The change variable is defined as the adapting of an organisation to the external forces, as well as, the integration internally to the organisation. Change is considered a response to both internal and external environments. Change will fail when only symptoms and not causes of problems in organizations are addressed, where there is a lack of employee persistence, and where there is an over-focus of content by management, too little time given to employees, resistance by employees, autocratic leadership, lack of buy in by employees and a lack of understanding people in organizations. Research has indicated that any type of change can be painful to employees and can cause stress, which will, in turn, decrease productivity (Swist, 1999; Maitland, 2002; Neely, Adams and Kennerley, 2002; Senior, 2002; AON, 2003).

The introduction of change has proven to affect employee perceptions of their motivation and job satisfaction levels negatively at all three businesses of the Armourplate division. Its effect on productivity varies, depending on the level of change experienced by employees. Little or no change experienced by employees led to a perception of no change, or even increased, levels of productivity. High levels of change resulted in perceptions of productivity being lower after change. Research has shown a positive relationship between motivation and productivity, as well as, job satisfaction and productivity.

Research also suggests that these relationships also weaken after change. This suggests that GSA senior management should consider a more structured change management model, focusing on the human element, when high levels of organisational change are required, so as to avoid a negative effect on productivity, and in turn, profitability.

Lawlor (1987:5) states with regard to the change factor *"an important factor in the productivity problem is the need to adjust to change."* Lawlor (1987:6) continues*, "The understanding and management of change have a vital part to play in improving productivity."* Neely, Adams and Kennerley (2002:119) adds that *"If the past decade has taught us anything, it is that sustained success – financially and operationally – is highly dependent on the dedication, skills and commitment of employees at all levels in the organisation*."

5.5 IMPLICATIONS FOR THEORY

Suttermeister (1976:12) points out that *"the relationship between need satisfaction, morale, employees' job performance, and productivity is much too complex for us to assume that satisfaction of individuals needs will automatically lead to better job performance and increased productivity".* Biesheuvel (1984) agrees with Suttermeister (1976) and points out that it is too simplistic to think of a direct relationship between job satisfaction and performance as there are too many intervening variables and the relationship remains problematic and raises the question as to whether satisfaction is the outcome and not the initiator of performance?

It is interesting to note, however, that when analysing perceptions of employees, the study could give an overall indication of how motivation and job satisfaction levels had changed, and that they were proven to be related to productivity. The study also showed that motivation and job satisfaction levels could change with organisational change, affecting productivity where sites experienced significant change.

McKinsey's survey (Sunday Times, 2003) shows corporate South African values are focused on harder performance words while employees' desired values are different to management's. The observation that motivation and job satisfaction perceptions were effected by organisational change, infers that GSA senior management's goals may not have been

as aligned as they should have been to that of their employees and suggests the need for better change management.

Katz confirms the research in that there is strong evidence that job satisfaction influences significant types of work behaviour. The author claims that *"The motivational pathway to high productivity and to quality production can be researched through the development of intrinsic job satisfaction"* Vroom and Dell (1989: 284). This is confirmed in the research findings of this dissertation in terms of job satisfaction results and the constructs relationship to productivity.

Job characteristics that were found to be important to employees in an investigation into measures of job satisfaction identified six variables: pay, hours of work, future prospects, difficulty of the job, job content and interpersonal relationships (Clark, 1998: 3). The study proved that monetary rewards were not as important as job security, job interest, promotion opportunities and autonomy. The survey also identified that older people were more satisfied and cared most for job security, that dissatisfied workers would be less likely to stay in their jobs and be productive. This may explain the drop in motivation, job satisfaction and productivity levels in the changing environment of the Armourplate businesses, which threatened job security, interest and promotion, particularly within group of employees with less than and equal to five years of service.

It is important to note for this study that according to Green *et al* (1999: 12) research shows a weak relationship between job satisfaction and productivity / performance.

"Motivated employees are productive." (Stacey, 2003: 66) and concludes regarding motivation theories theories *"What all these studies point to is this. An organisation succeeds when its people, as individuals, are emotionally engaged in some way, when they believe in what their group and their organisation are doing, and when the contribution they make to this organisational activity brings psychological satisfaction of some kind, something more than simple basic rewards."* It is questionable whether GSA senior management obtained buy-in from employees to believe completely in their group and what they were doing.

Biesheuvel (1984: 235) claims satisfaction and productivity are related when individual productivity is perceived as a way of reaching certain goals that are highly valued and, therefore, satisfying. Under other conditions Biesheuvel warns there may be a negative relationship between productivity and job satisfaction, in line with the expectancy / valency theory. GSA management should note that employees can find and create job satisfaction by knowing why they were hired, knowing how they fit in; learning to communicate in their environment; list their achievements, review their work, change jobs or professions (Biesheuvel, 1984: 235).

5.6 CONCLUSION

Based on the results obtained from the research survey it is concluded that both hypotheses are accepted: employee motivation and organizational productivity are effected, dependent on the level organisational change experienced by an employee. It is important to note that motivation proves to be the strongest construct correlated to productivity (Hypothesis one). Job satisfaction and organisational productivity are also effected depending on the level of organisational change experienced within the business (Hypothesis two).

CHAPTER SIX

CONCLUSIONS, RECOMMENDATIONS AND AREAS FOR FURTHER RESEARCH

6.1 INTRODUCTION

This chapter will offer conclusions regarding the research question, the hypotheses, the research problem and overall objective of the study. Implications and recommendations from the research study will also be discussed.

6.2 STATEMENT OF THE RESEARCH PROBLEM

The research problem investigates to what extent the introduction of change has affected employee motivation and job satisfaction with reference to organisational productivity.

The research has shown that change has caused a drop in perceptions of employee motivation and job satisfaction. However, on the whole, perceptions of productivity are that it has not fallen during change with the division analysed.

6.2.1 Sub-problems

For the purpose of this research two sub problems have been identified:

6.2.2 Sub-problem one

The first sub-problem is to determine the relationship between employee motivation and organisational productivity within the context of organisational change. Motivation proves to be the strongest construct correlated to productivity. There is a noticeable drop in motivation with the overall organisational change. Perceptions of productivity drop only at the Springs site where employees experienced a high level of change.

6.2.3 Sub-problem two

The second sub-problem was to determine the relationship between job satisfaction and organisational productivity within the context of organisational change. Perceptions of job satisfaction drop during organisational change. Perceptions of productivity fell only at the site of high change activity.

6.3 HYPOTHESES

The problem statement states that the purpose of this study is to determine the relationship between employee motivation and job satisfaction, within the context of organisational change, and to analyse the contribution thereof to organisational productivity. Considering the above problem statement, there are two hypotheses that need to be tested:

6.3.1 Hypothesis one

It is hypothesised that there is a positive relationship between employee motivation and organisational productivity within the context of organisational change.

6.3.2 Hypothesis two

It is hypothesized that there is a positive relationship between job satisfaction and organizational productivity within the context of organisational change.

6.4 SUMMARY OF FINDINGS

The results from the research test the hypotheses are as follows.

6.4.1 Hypothesis one

The research results of this study prove that there is a positive relationship between employee motivation and organisational productivity within the context of organisational change.

6.4.1.1 Hypothesis two

The research results of this study prove that there is a positive relationship between job satisfaction and organisational productivity within the context of organisational change.

6.5 RECOMMENDATIONS

Employees should be kept constantly motivated and job satisfaction levels kept high, to ensure plant productivity is high. These should be monitored by management regularly, particularly motivation, which proves to be the strongest construct correlated to productivity. Monitoring these constructs

levels are particularly important when a business unit experiences any high levels of change.

Management should be trained at all levels in change management, to ensure change is successfully implemented and done with minimum negative impact to employees and in turn, to productivity.

If management implements a programme to increase employee motivation and job satisfaction, it may lead to the added benefit of increased productivity for the business.

6.6 AREAS FOR FURTHER RESEARCH

Following from the current study the following recommendations are proposed.

- Since motivation proved to be the strongest construct correlated to production. More research should be carried out in determining methods of improving motivation levels during change so that productivity does not decrease but remains the same or even increases.

- The questionnaire could possibly be used for further research in other industries on the same topic

- A further study should be done on the Cape Town plant to assess whether there are factors to explain the employees' perceptions that productivity had increased during the same period of change. This may offer solutions to the other plants, particularly Springs, where perceptions were that productivity dropped over the change period.

- If motivation and job satisfaction have a positive relationship to productivity, could the South African problem of 'jobless growth' (more machinery and less people for productivity) be avoided by improving motivation and job satisfaction?

- The change questionnaire of this study should be completed by employees again in the future, to evaluate the long-term effect of change in the business, using the current study as a base line.

6.7 CONCLUDING REMARKS

In summary, this research has identified that while people were significantly less motivated and satisfied with their jobs as a result of change management, their personal perception of their production levels, did not, on the whole, change significantly. Perceptions of lower productivity levels after change were experienced at the Springs site, where the most change was experienced by employees within the GSA Armourplate Division. Where the level of change was very little or non-existent, productivity was perceived to be the same or even higher than before organisational change.

Motivation proves to be the strongest construct correlated to productivity. Therefore, if employees improve motivation and management is aware of the need for change management, then production could increase.

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ADDENDUMS

Addendum 1

DIT Pilot test

Further to the completion of the questionnaire, it was decided to do a pilot study to ensure that the questionnaire was easily read and understood and that the results were relevant to the dissertation.

A pilot study was conducted at the Durban Armourplate plant on the 24th Of March 2004. The respondents included 3 salaried and 3 shop floor workers. The Shop steward was included in the pilot test as one of the shop floor workers, to ensure there was support from the shop floor and no union issues regarding the questionnaire.

Issues that came up from the questionnaire were:

- All respondents understood the introduction, method to answer and questions.
- There was some uncertainty on the time of change. This has been rectified by using the business name change from PFG to GSA, which the shop floor could identify with, while still leaving the year of change, but highlighted.
- Question 1 required the highlighting and larger font for the word “or” for respondents to recognize the choice and difference between salaried and shop floor when answering.

- Question 5 caused confusion as to whether the questionnaire wanted to know the number of managers or supervisors the respondent has reported to over the last ten years. The sentence was changed from “indicate the number of managers you have reported to in the last 10 years while an employee at GSA Armourplate” to “Indicate the number of plant managers that have worked at your plant in the last 10 years while an employee at GSA Armourplate.” The question needs to address management and the change of management effect.
- Question 13 caused uncertainty regarding the word leadership and whether this was referring to the manager or supervisor. This question was changed to “overall management”, to address this issue.
- The “note” regarding scale definition was changed to “please remember when answering” to reinforce the correct definition of the scale, which does change in the questionnaire.
- Spacing was addressed and scales needed to be on one line, which was adjusted for ease of respondents to understand the scale.
- Between questions 17 and 18, wording was changed as a respondent complained about the grammar. This sentence was shortened for respondents to read and understand better.
- Time to complete took from 20 to 30 minutes.
- Respondents on the factory floor explained that they answered from their micro level and not from a macro strategic level. It was decided to leave this as is and allow perception results to truly reflect their response from their position.

- The Shop steward agreed to support the questionnaire and discuss any union concerns that may be raised by the other plants at the time the questionnaire was being filled in.

Addendum 2
Research Questionnaire

RESEARCH QUESTIONNAIRE

GLASS SOUTH AFRICA (PTY) LTD
ARMOURPLATE DIVISION
33/35 Westmead Road, Westmead, Pinetown
P.O. Box 15245, Westmead 3608
Tel: (031) 7001404/5/6 Fax: (031) 7002887
Web site: www.gsa.co.za Enquiries: info@gsa.co.za

INTRODUCTION

With political change, legislation has brought world competition into South African businesses. This change in South African businesses has forced management to consider issues such as profit, performance, cost reduction, productivity and being the best. Economic recession and market change demands have also made it necessary for businesses to control costs and develop different services. In this context, our own change began with the CEO, Stewart Jennings announcing a new name for our business, "Glass South Africa," in 2001. He and his management team have also implemented changes within the company from this time, including the three Armourplate plants, which have experienced varying degrees of restructuring, re-organization, downsizing and retrenchments.

In light of the above, please answer the following questions (that will measure GSA Armourplate employees perceptions of job satisfaction, motivation, productivity during the period of change in these businesses). The rating questions require you to read the statement and answer the question twice by rating your business before the change of 2001 *and* again at the present time or (time in PFG = "before change" to "present time" = GSA now).

This study is conducted by Peter Laudenberg and is for the purposes of his MBA.

INSTRUCTIONS

The questionnaire below is divided up into two sections:

Section A includes demographic data and Section **B** includes the main body of the measuring instrument (in other words, the questionnaire measures your response). This Section attempts to quantify your attitudes to issues both before “change management” and your present attitude to “change management”

An example of two sample questions are illustrated below : Please indicate your level of agreement with regards the statement both before “change management” and “at present”. In other words per question you should circle a number on the left hand side scale which reflects your attitude to the statement before change and then you should also circle a number on the right hand scale which reflects your present attitude to the statement.

Please remember the following when answering:

1 = strongly disagree , 2 = disagree , 3 = unsure , 4 = agree , 5 = strongly agree.

Example of questions:

BEFORE CHANGE		**THE PRESENT**
TIME		
(1)		
1...2...3...4...5	I am noticed when I do a good job	1...2...3...4...5
(2)		
1...2...3...4...5	I get recognition for the work I do.	1...2...3...4...5

- The questionnaire, once completed is completely confidential and the information supplied is kept **anonymous**.
- Respondents will be protected when information is analyzed.

- Please note that there are no correct or wrong responses to the items or questions in the questionnaire.
- Please complete the questionnaire as honestly and as accurately as you can.
- Note also that through your responses you will be making a valuable contribution to the study and the understanding of Change Management.

Thank you for your cooperation**.**

QUESTIONAIRE

SECTION A (Please tick the appropriate block per question)

(1) STAFF LEVEL

SALARIED

Senior	Middle	Junior	Senior Staff	General Staff

OR

SHOP FLOOR

Senior Operator	Cutter	Machine Operator	Polisher/ Edgeworker
Quality Controller	General Assistant	Other	

(2) AGE

15 □ 25	25 □ 35	35 □ 45	45 □ 55	□ 55

(3) RACE

Black	Coloured	White	Indian

(4) GENDER

Male	Female

(5) Indicate the number of Plant Managers that have worked at your plant in the last 10 years while an employee at GSA Armourplate.

1 ≤	1 □ 3	3 □ 5	5 □ 10	10 □ 15

(6) LENGTH OF SERVICE (in years)

Indicate The Number Of Years of service At GSA Armourplate.

1 ≤	1 □ 3	3 □ 5	5 □ 10	10 □ 15	15+

(7) WHICH PLANT ARE YOU EMPLOYED BY ?

Springs	**Durban**	**Cape Town**

SECTION B (Please circle both the left hand side and right hand side of the Scale indicating your feelings both before "change management" and at present)

Please complete Part B by indicating your level of agreement with regards the statement both before "change management" and "at present". In other words per question you should circle a number on the left hand side scale which reflects your attitude to the statement before "change management" and then you should also circle a number on the right hand scale which reflects your present attitude to the statement. Note that your response below is your perception/ opinion. Please complete even if you were not with the Armourplate Division in PFG, pre 2001.

Please remember when answering:

1 = strongly disagree , 2 = disagree , 3 = unsure , 4 = agree , 5 = strongly agree.

[PART B]

BEFORE CHANGE (PFG)		**THE PRESENT TIME (GSA)**
(1)		
1...2...3...4...5	I am noticed when I do a good job	1...2...3...4...5
(2)		
1...2...3...4...5	I get recognition for the work I do.	1...2...3...4...5
(3)		
1...2...3...4...5	I get praise for doing a good job.	1...2...3...4...5
(4)		
1...2...3...4...5	My company pay compares well with similar jobs in other companies.	1...2...3...4...5

BEFORE CHANGE		THE PRESENT TIME
(5)		
1...2...3...4...5	I am satisfied with my pay I get for the work I do.	1...2...3...4...5
(6)		
1...2...3...4...5	I am satisfied with my pay compared to my co-workers	1...2...3...4...5
(7)		
1...2...3...4...5	I am satisfied with the way my boss handles employees.	1...2...3...4...5
(8)		
1...2...3...4...5	I am satisfied with the way my boss handles complaints bough to him/her by employees.	1...2...3...4...5
9)		
1...2...3...4...5	I am satisfied with the personal relationship between my boss and his/her employees.	1...2...3...4...5
(10)		
1...2...3...4...5	I feel that the plant is efficient in converting raw glass sheets into finished glass products.	1...2...3...4...5
(11)		
1...2...3...4...5	I feel that the plant has the right equipment to operate efficiently.	1...2...3...4...5
(12)		
1...2...3...4...5	I feel that the plant has people who are sufficiently trained in their job to operate productively.	1...2...3...4...5
(13)		
1...2...3...4...5	I feel that the overall leadership at the plant encourages people to be productive.	1...2...3...4...5

BEFORE CHANGE **THE PRESENT**
TIME

(14)

1...2...3...4...5 I have a pleasant building in which I work. 1...2...3...4...5

(15)

1...2...3...4...5 The equipment on the factory floor is well laid out. 1...2...3...4...5

(16)

1...2...3...4...5 The employees have a positive attitude to work. 1...2...3...4...5

(17)

1...2...3...4...5 I feel that the plant is efficient in converting raw glass sheets 1...2...3...4...5
into finished glass products at the lowest possible cost.

Please indicate your level of agreement, if you performed your job especially well:

(18)

1...2...3...4...5 I will get a bonus or pay increase. 1...2...3...4...5

(19)

1...2...3...4...5 I will feel better about myself as a person. 1...2...3...4...5

(20)

1...2...3...4...5 I will have an opportunity to develop my skills and abilities. 1...2...3...4...5

(21)

1...2...3...4...5 I will have better job security. 1...2...3...4...5

(22)

1...2...3...4...5 I will be given chances to learn new things. 1...2...3...4...5

(23)

1...2...3...4...5 I will get promoted or get a better job. 1...2...3...4...5

BEFORE CHANGE **THE PRESENT TIME**

(24)

1...2...3...4...5 I will get a feeling that I have accomplished somethingworthwhile1...2...3...4...5

(25)

1...2...3...4...5 I will have more freedom on the job. 1...2...3...4...5

(26)

1...2...3...4...5 I will be respected by the people I work with. 1...2...3...4...5

(27)

1...2...3...4...5 I will be praised by my supervisor. 1...2...3...4...5

(28)

1...2...3...4...5 The people I work with will be friendly to me. 1...2...3...4...5

Please indicate your level of importance both before and after change of these things that you could have on your job . i.e. : How important is it for you to have the things listed below in your present job ?

Please remember when answering:

1 = highly unimportant , 2 = unimportant , 3 = unsure , 4 = important , 5 = highly important.

BEFORE CHANGE THE PRESENT TIME

HOW IMPORTANT IS ?

(29)

1...2...3...4...5 The amount of pay you get. 1...2...3...4...5

(30)

1...2...3...4...5 The chances you have to do something that makes you feel good about yourself as a person 1...2...3...4...5

BEFORE CHANGE **THE PRESENT TIME**

(31)

1...2...3...4...5 The opportunity to develop your skills and abilities 1...2...3...4...5

(32)

1...2...3...4...5 The amount of job security you have. 1...2...3...4...5

(33)

1...2...3...4...5 The chances you have to learn new things 1...2...3...4...5

(34)

1...2...3...4...5 Your chances for getting a promotion or getting a better job. 1...2...3...4...5

(35)

1...2...3...4...5 Your chances you have to accomplish something worthwhile. 1...2...3...4...5

(36)

1...2...3...4...5 The amount of freedom you have on your job. 1...2...3...4...5

(37)

1...2...3...4...5 The respect you receive from the people you work with. 1...2...3...4...5

(38)

1...2...3...4...5 The praise you get from your supervisor/manager. 1...2...3...4...5

(39)

1...2...3...4...5 The friendliness of the people you work with. 1...2...3...4...5

(40)

The current executive leadership in the company supports change.

Please tick the appropriate block:

Yes	No

END OF QUESTIONNAIRE

Addendum 3: Matrix

	Self Actualisation	Esteem	Social	Safety	Physiological
Motivation	AUTONOMY PROMOTION & GROWTH OPPORTUNITIES OPPORTUNITIES FOR CREATIVITY CHALLENGING WORK	PRESTIGIOUS BASED PAY MERIT BASED PAY MERIT BASED PROMOTIONS APPRECIATION OF WORK DONE RECOGNITION	WORK TEAMS SOCIAL FUNCTIONS COMPANY SPORTS FEELING OF BEING IN ON THINGS TACTFUL DISCIPLINE SPIRIT AND PRIDE IN ORGANISATION	MEDICAL COVER PENSION PLAN DISABILITY INSURANCE SAFE WORKING CONDITIONS COMPANY POLICY AND ADMINISTRATION	ATTRACTIVE PAY COMPANY FACILTIES COMPANY BENEFITS COMPANY LOYALTY TO EMPLOYEES SYMPATHETIC HELP WITH PERSONAL PROBLEMS
Productivity	LEVELS OF ASPIRATION INTEREST MOTIVATION CREATIVITY ORIGINALITY	INCENTIVES EXPERIENCE EDUCATION TRAINING SKILLS TASK PRIORITISING ACCURACY AND QUALITY OF WORK PROBLEM SOLVING	CULTURAL BACKGROUND RELATIONSHIP AND COHESIVENESS WITH LEADERSHIP MALE – FEMALE REFERENCE GROUP PERCEPTION OF THE SITUATION ON AND OFF THE JOB ACTIVITIES STANDARDS AND TRAINING EVALUATION & MBO	SAFETY VENTILATION TEMPERATURE LIGHTING NOISE REST PERIODS WORK SPACE UNION METHODS OF WORK	SIZE OF PLANT PERSONAL SITUATION INTELLEGENCE AND APTITUDE AGE ECONOMIC CONDITIONS WORK DESIGN WORK SCHEDULE ATTITUDE & PERSONALITY TOOLS
Job Satisfaction	PROMOTION AUTONOMY DIVERSITY DECISION MAKING	PROMOTION FUTURE PROSPECTS DIFFICULTY OF THE JOB JOB INTEREST INCENTIVES AND REWARDS Meaningfulness of work Responsibilities for the outcomes of work Work knowledge	PEOPLE WORKED WITH SUPERVISION TASK SIGNIFICANCE FEEDBACK/ COMMUNICATION COMPANY IDENTITY	KIND OF WORK	PAY HOURS OF WORK JOB SECURITY TASL IDENTITY AMOUNT OF WORK

Addendum 4: PG Group Restructuring Brief to Employees and Customers. CEO Stewart Jennings. GSA MD Rob Curle. 25 November 2003