

**EXAMINATION COPY**

**Employment Practices in the Transition to Lean Production:  
Worker Perspectives in a South African Auto Components Firm**

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A masters project in partial fulfilment of the requirements for the degree of **Magister Commercii (Management)** in the Department of Management, Economic and Management Sciences Faculty, University of the Western Cape.

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## DECLARATION

I declare that this project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Masters in Commerce at the EMS Faculty, University of the Western Cape. It has not been submitted for any degree or examination at any other university. All references and sources of information to my knowledge are accurately reported.

.....

Anita Jordaan

## ETHICS STATEMENT

All persons interviewed were informed of the purpose of the study, and it was made clear that the identities and interests of those involved would be protected. All information is regarded as confidential.

## ABSTRACT

Employment Practices in the Transition to Lean Production:  
Worker Perspectives in a South African Auto Components Firm

Proponents of lean production (LP) argue that successful implementation is dependent on creating an organisational climate that complements the adoption and implementation of innovation. Transformation of the organisational climate, from a culture of adversarialism (management versus workers) and worker exclusion (in terms of decision making) toward a culture of co-operation and worker participation, is thus a necessary complement to LP. Successful implementation of LP, and associated practices, thus requires the commitment of all stakeholders.

This study explores worker attitudes towards transition to LP within a chosen company in the South African auto components sector. The study focuses on understanding worker perceptions of shifts in Human Resource and Industrial Relations practices which are associated with the transition to LP. The research reports on two surveys of workers to better understand their perceptions of the changes to the relationships among workers, and between workers and management.

**KEYWORDS**

Lean Production, Organisational Culture, Organisational Climate,  
Quality Thinking, Industrial Relations Climate, Worker Participation,  
Empowerment, Transition, Adversarialism, Traditional Management Methods.



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### **A Description of Keywords**

Lean Production (LP): “There is much debate over exactly what constitutes a LP system” (Lewchuk and Robertson, 1997:3) Womack and Jones (1990) suggest LP to be a production system that seeks to achieve better outcomes through continuously enhancing quality while exposing and eliminating waste, reducing lead times and costs. Other authors extend LP to include “[m]ore machinery flexibility, more manufacturability, reorganisation to reduce inventory and improve product flow and reorganisation of work to make better use of Labour’s knowledge of the production process” (Lewchuk and Robertson, 1997:3).

Organisational Culture: “Organisational Culture exists simultaneously on three levels. At the deepest level are assumptions; basic beliefs about reality and human nature. Secondly it is constituted of values, social principles, goals and standards thought to have intrinsic worth. Thirdly, surface artefacts which are the visible and tangible results of activity grounded in values and assumptions” (Schein, 1985,,cited in Baer and Frese, 2003: 48).

Organisational Climate: “How individuals generally perceive the organisation’s characteristics” (Glick, 1988, cited in Baer and Frese, 2003: 47).

I.R. Climate: “The aggregated perceptions of IR systems operating within organisations”(Bluen & Donald, 1991: 12).

Worker participation: “An encouragement of decentralisation of decision making and broader worker participation and empowerment in controlling their own work process” (Pfeffer et al, 1995:4).

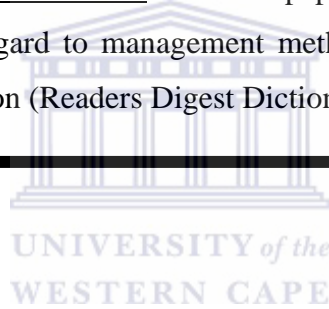


Empowerment: “To invest with legal power and authorise workers” (Readers Digest Dictionary, Vol.1, 1984: 554). “Broader worker participation and workers controlling their own work processes” (Pfeffer et al, 1995: 4).

Transition: “The change of a system from one energy state to another” (Readers Digest Dictionary, Vol.2, 1984:, 1755).

Adversarialism: In this paper, it refers to relationships of strongly opposed interests (Readers Digest Dictionary, Vol.1, 1984: 34).

Traditional Management Methods: In this paper, it means a mode of thought or behaviour, with regard to management methods, followed by people from generation to generation (Readers Digest Dictionary, Vol.2, 1984: 1751).



## **Employment Practices in the Transition to Lean Production:**

### **Worker Perspectives in a South African Auto Firm**

#### **CHAPTER 1**

##### **1. INTRODUCTION**

Proponents of Lean Production (LP) argue that successful implementation is dependent on creating an organisational climate that complements the adoption and implementation of innovation. Transformation of the firm's distinctive organisational climate, from a culture of adversarialism (management vs workers) and worker exclusion, toward a culture of co-operation and worker participation, is thus a necessary complement to LP. Successful implementation of LP, and associated practices, thus requires the commitment of all stakeholders.

A thread which runs through all the literature reviewed is that there is an understanding that Organisational Climates serve as the building blocks for innovative systems. While authors debate whether or not the climates affect various outcomes, they all agree that organisational climates exist. They also agree that climates are fundamental to the functioning of internal organisational systems. It is also argued "that several different climates coexist in any organisation" (Schneider & Snyder, 1975, cited in Bluen & Donald, 1991: 12). It is with reference to this argument that this study seeks to explore the existence and relationships of the various constructs in climates within an organisation and the implications for the phased implementation of LP.

This paper is based on the argument that world class innovations like Lean Production (LP) need supportive organisational climates, including a conducive Human Resources / Industrial Relations (HR/IR) climate, in order to be successful in the long term. The study is also based on the argument that HR/IR should be central to organisational change cultivating climates which support such change. Furthermore, it can be argued that workers need to be included in creating the

environments for positive organisational climates. This encourages workers to completely adopt in-company climates and organisational innovative change as their own.

Chapter one introduces the macro context of the study, and briefly discusses organisational change. Later chapters document the business context of the organisation observed, including the changes in production and HR/IR strategies, policies and practices. The study seeks to understand worker perspectives of the various dimensions of the organisational climate and the work place context in the automotive component firm that is the subject of this study. The study will identify that changes in a business context affect work place contexts and, in turn, affect worker attitudes and behaviours.

In order to limit the study in terms of size and scope, the study focuses on climates which affect and relate to HR/IR practices. The study acknowledges that South African organisations have additional challenges as the country goes through a transition from an apartheid political history to a system of democracy which in turn affects all levels of social and industrial relationships and systems.

## **1.2. Macro Context of the Study**

Since the late 1970's, South African employers have had to consider alternative strategies to Labour relations since empowered unions forced shifts in management styles to accommodate unions at the work place (Finnemore, 1996: 119).

While the South African economy was focused on political issues leading up to political transition in the 1990s, international management systems together with production systems began to address change in the business environment. In the 1980's and early 1990's, the Fordist model of mass production and work organisation came to be viewed as cumbersome, inefficient, unable to respond

rapidly to changing consumer tastes, and wasteful of the creative potential of production workers (Womack et al, 1990; MacDuffie, 1995; Adler and Cole, 1993; Adler 1992, in Lewchuck and Robertson, 1997:3).

In order for companies to remain competitive in a global economy, studies have shown that there is an imperative for continuous improvement in quality and efficiency on the factory floor (Lewchuck and Robertson, 1997; Womack et al, 1990; Baer and Frese, 2003; Locke et al, 1995: xv).

“Organisations need to keep abreast of emerging and current trends” (Baer and Frese, 2003: 45). Organisations with outdated strategies will be left behind and may not survive. In order for South African firms to compete and interact with first world industries, transformation to lean production and lean thinking has to be driven from within organisations.

LP has different descriptions by different authors. In their seminal study, Womack et al (1990) define Lean Production as a system that seeks to achieve better outcomes through continuous quality enhancement simultaneously exposing and eliminating waste, reducing lead times and costs. According to Lewchuk and Robertson (1997: 3), lean production involves “more machinery flexibility, more manufacturability, reorganisation to reduce inventory and improved product flow and reorganisation of work to make better use of labour’s knowledge of the production process”.

Research suggests that management change the way they think about industrial relations and the workforce before transition to systems like lean production (LP) (Pfeffer et al, 1995:1 (online)).

Improvement in competitiveness typically also requires changes in organisational climate, and a shift from hierarchical systems to flatter structures. Changes in human resource (HR) and industrial relations (IR) management and a range of associated practices are also required (Pfeffer et al, 1995: 3-6). This paper is based

on the argument that HR/IR is central to organisational climate. In-company IR policies are devised to manage labour-management conflict. A measurement of in-company IR will reflect how well the system functions (Bluen & Donald, 1991: 13). Therefore, HR/IR should be central to communicating organisational innovation and improvement.

In light of the conflict in South African workplaces, largely attributable to racial discrimination and autocratic leadership styles, any process of change for workers who have a heritage of adversarialism would hold its own difficulties. However, in spite of past injustices, historical prejudice and adversarialism, there now exist success stories of change in the South African motor industry. This study focuses on a company that is in the early stages of the transition toward LP. In particular, it focuses on worker attitudes and perceptions of the changes in HR/IR climate and factors contributing to organisational climate that are accompanying the transition towards lean production.

It is important to understand to what extent management has changed attitudes on the shop-floor and whether the energy from adversarial relationships is being redirected towards common organisational goals and business survival, and growth. Periodical measurement of worker satisfaction, commitment and motivation can be used to monitor continuous improvement in HR/IR. Identifying worker perceptions of HR/IR practices provides opportunities for system improvement and change processes to be successfully monitored and implemented with long term sustainability. The outcomes of this study indicate the relationships between climate variables which either drive or affect work place contexts and worker attitudes or behaviours.

The survey tests worker perceptions of the organisation's climate, and draws attention to issues that may otherwise have been over-looked by management. The results from the surveys of employees that were conducted a year apart could be used to assist the organisation in further planning and the implementation of the

LP process. This study looks at the foregoing concerns with specific reference to a firm in the auto components industry, Xco.

### **1.2.1. Background of the Organisation**

The identity of the company will not be disclosed, at the company's request. Xco manufactures engine components for export. The company was chosen for the study because it is in the process of interesting structural changes. Since 2003, the company has been in the process of planning and implementing strategies that are leading towards LP. A series of structural changes included the change of ownership in the year 2000, top management restructuring around 2003, overall organisational restructuring and a production process change in 2005/6. The surveys of employees conducted in 2006 and 2007 should provide interesting insights into what HR/IR adaptation plans hold for the in-company changes.

#### **1.2.1.1. Organisational Changes**

##### **1.2.1.1.1. Management Changes**

Since 2004, five Divisional Managers were appointed. This leaves only two managers (out of eight) who have more than three years' experience with the company.

Due to structural and production changes, the organisation is struggling with a mixture of issues in order to stabilize the organisational climate while many managers are still finding their feet in new positions, and employees are also adapting to new conditions.

##### **1.2.1.1.2. Production & HR/IR Strategies & Changes**

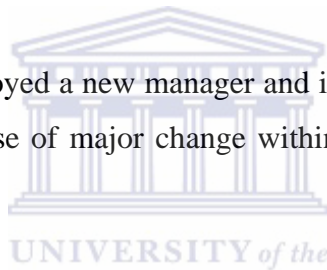
Interesting changes have occurred between 2003 and 2007. Production managers were promoted into positions and, in some departments, the manager changed three times during this period. In 2003 the organisation employed a new Manufacturing Manager, who previously was contracted as the Change consultant, to assist in directing the company toward LP and World Class

Manufacturing (WCM) methods. This manufacturing manager is the organisation's current change agent.

In addition to management changes, a few employees were transferred across plants, while one of the plants was extended to accommodate a third production line which included the movement and introduction of new machinery. Within each plant, workers shifted positions and structural changes also occurred within non-management ranks. All the above-mentioned changes challenged the organisation as well as the workers who had to adopt these changes.

In 2003, the production department started research and development of a third production line, which would take a few years to put into place.

HR/IR department employed a new manager and instituted a new structure within HR/IR. This held promise of major change within HR/IR and the way in which the system functions.



Further details regarding the business context are discussed in Chapter 4.

### **1.3 Research Questions**

Baer and Frese (2003) argue that successful implementation of LP is dependent on creating an organisational climate that complements the adoption and implementation of innovation.

The aim of this study is to explore worker attitudes towards HR/IR in the transition to lean production (LP) in a single firm in the auto components sector. "HR/IR is considered a specific climate within organisational climate" (Bluen & Donald, 1991: 12). The rationale is discussed in the literature review of Chapter Two.

The questions thus are:

1. What HR/IR and production changes have been implemented in recent years?

HR/IR and production changes are described in chapter 4.

2. What are workers' present attitudes to HR/IR practices?

The survey of worker attitudes addresses this question in its entirety and reports the results of current attitudes to HR/IR practices. Survey results will indicate the extent of each variable within the HR/IR climate and the relationships between them.

#### **1.4 Conclusion**

This project is composed of six chapters. Chapter 2 presents the theoretical framework guiding this project as well as a review of literature informing this project. Chapter 3 presents the research methods and procedures used in the research. Chapter 4 presents detailed information collected at the organisation in order to contextualise the results. The data analysis and discussion of results are presented in Chapter 5, while Chapter 6 serves as the conclusion.



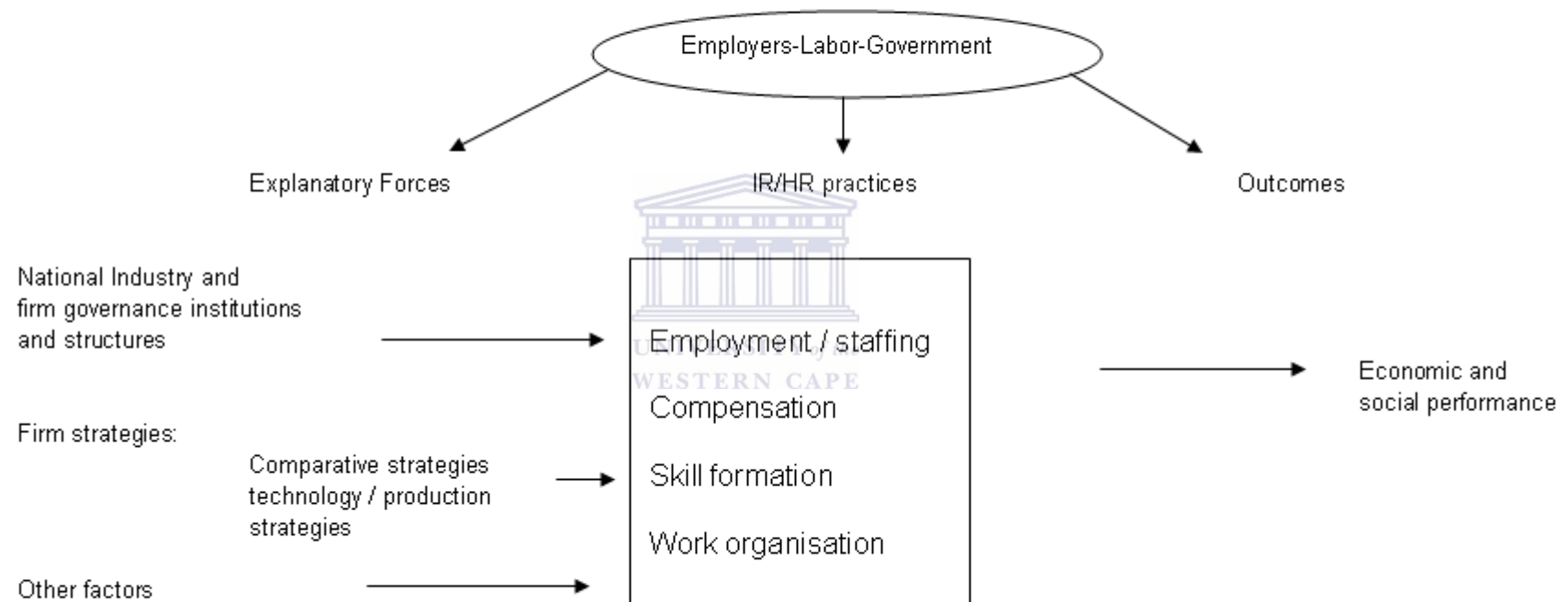
## **CHAPTER 2:**

### **2. ANALYTICAL FRAMEWORK**

Figure 1, The Framework for Analysing Employment Practices, developed by Locke, Kochan & Piore (1995: xxvii) provides the basis of the analytical framework for this study. The Locke et al framework highlights how HR/IR practices are shaped by management strategy, the production system and the IR context. These in turn shape outcomes for workers, firms and the economy. However, this framework neglects to fully develop the consequences for individual workers and how their attitudes are shaped by changes in the production system, work organisation and HR/IR practices.

Figure 2 draws on theoretical ideas by Locke et al (1995) to establish key concepts that will inform my conceptual framework. Rather than focus on all elements of the Locke et al (1995) model, this project focuses on those elements highlighted in Figure 2. The key contextual factors and explanatory forces that will be discussed are:

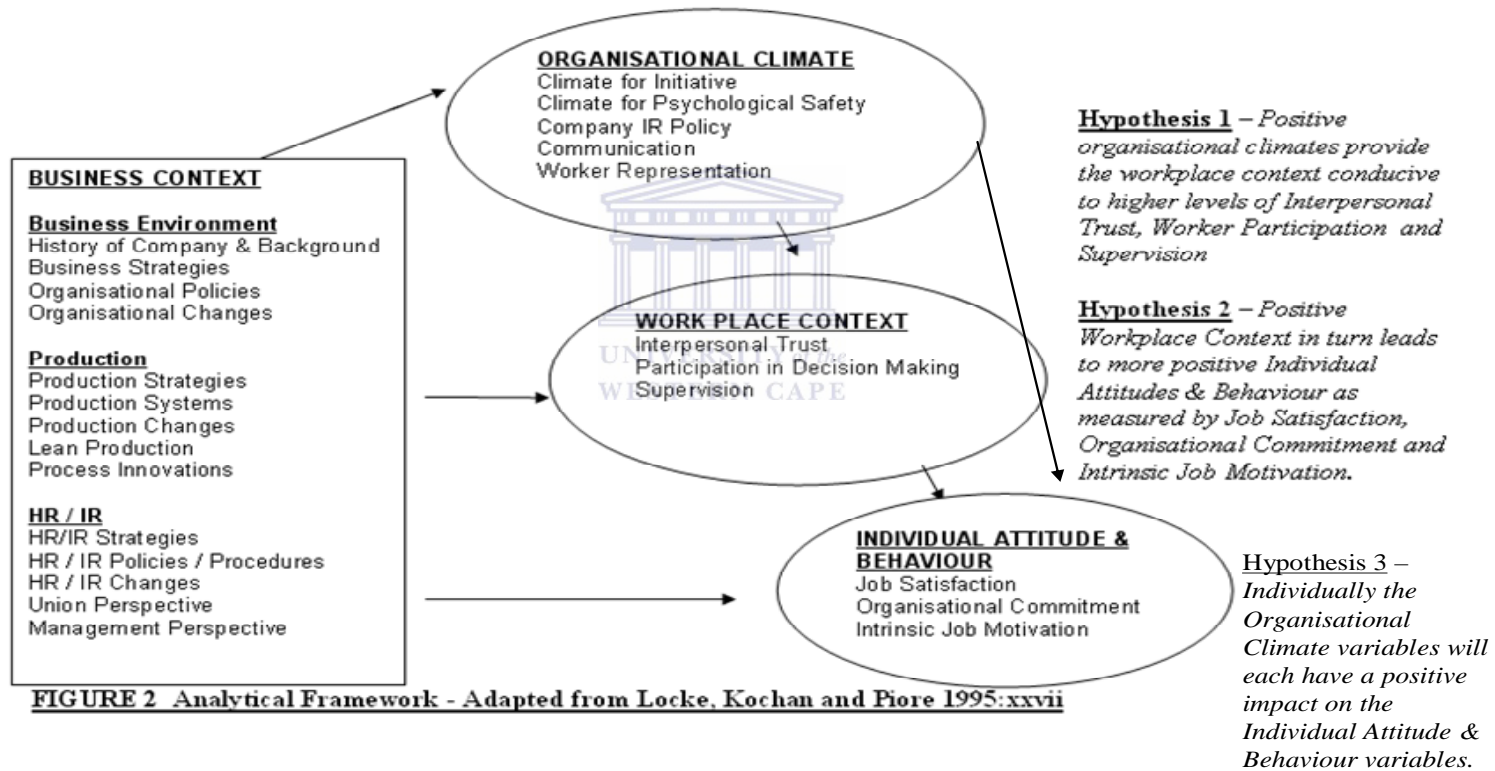
- Business Context, under headings of Business Environment, Production and Human Resource / Industrial Relations will be discussed in chapter four.
- Organisational climate with reference to Climate for initiative, Climate for Psychological Safety, Company IR Policy, Communication and Worker Representation, is discussed in Chapter Two and drawn out in the survey.
- Individual Attitude & Behaviour - Intrinsic Job Motivation, Job Satisfaction and Organisational Commitment

**FIGURE 1****Framework for Analysing Employment Practices**

Source: Locke, Kochan, and Piore 1995:xxvii.

Locke, Richard, Kochan, Thomas and Piore, Michael (eds). 1995. *Employment Relations in a Changing World Economy* (Cambridge, Massachusetts: MIT Press).

## ANALYTICAL FRAMEWORK



## **2.1. Definitions of variables**

### **ORGANISATIONAL CLIMATE**

**“Climate for initiative** refers to formal and informal organisational practices and procedures guiding and supporting a proactive, self-starting, and persistent approach toward work” (Frese et al, 1996, 1997 in Baer & Frese, 2003: 48).

**“Climate for Psychological Safety** is an employee’s sense of being able to show and employ one’s self without fear of negative consequences of self-image, status or career” (Kahn, 1990: 708 in Baer & Frese, 2003: 50).

**“In-Company IR Climate** is defined as the aggregated perceptions of IR Systems operating within organisations” (Bluen & Donald, 1991: 12).

### **Communications**

“Generalised organisation communication system and communication systems specific to IR communication structures, each with its own unique function, are prerequisite to a sound in-company IR system. These are the grievance procedure for constructive conflict resolution” (Gordon & Miller, 1984 in Bluen & Donald 1991: 13), “the disciplinary procedure to reduce managerial inconsistencies, set standards and prevent conflict escalation” (Beary, 1985 in Bluen & Donald 1991: 13) “and the employee representation structure which provides a formalised framework for in-company labour-management decision making” (Hyman, 1977 in Bluen & Donald 1991: 13) “and serves to protect employee rights” (Bluen & Donald, 1991:13).

### **Worker Representation**

As discussed under communications, “the employee representation structure provides a formalized framework for in-company labour-management decision making” (Hyman, 1977 in Bluen & Donald 1991: 13) “and serves to protect employee rights” (Bluen & Donald 1991: 13).

## **WORKPLACE CONTEXT**

**“Interpersonal trust at work** refers to the extent to which one is willing to ascribe good intentions to and have confidence in the words and actions of other people. This willingness will in turn affect the way in which one behaves towards others” (Cook & Wall, 1980: 39).

**Personal need non-fulfilment (participation in decision making)** refers to “the needs of people in non-managerial and non-professional jobs where the opportunities for the satisfaction of such needs are relatively restricted by the nature of the tasks performed. Job redesign programs are moving towards incorporating into job structures the possibility of increasing higher order need satisfaction” (Cook & Wall, 1980: 41).

### **Supervision**

“Competent supervision is management’s representative on the shop-floor, enacting regulatory processes, dealing with employee problems and profoundly influencing the functioning of both formal and informal IR processes” (Baer, 1970; Briggs, 1981; Piron et al, 1983 in Bluen & Donald 1991: 13).

## **INDIVIDUAL ATTITUDES and BEHAVIOURS**

**“Job Satisfaction** is the degree to which a person reports satisfaction with intrinsic and extrinsic features of the job. Total job satisfaction is the sum of all separate items, and overall job satisfaction is reported satisfaction with the job as a whole. Intrinsic satisfaction is satisfaction toward personal achievement and extrinsic satisfaction arises from features such as additional pay or good working conditions” (Warr, Cook & Wall, 1979: 133).

**“Organisational Commitment** refers to a person’s affective reactions to characteristics of his employing organisation. It is concerned with the feelings of attachment to the goals and values of the organisation, one’s role in relation to this, and attachment to the organisation for its own sake rather than for its strictly instrumental value. As a positive outcome of the quality of work experience, the concept can be regarded as a factor contributing to the subjective well-being at work” (Cook & Wall, 1980: 40).

**Intrinsic Job Motivation** as defined by Warr, Cook & Wall (1979: 133) is viewed as the degree to which a person wants to work well in his or her job in order to achieve intrinsic satisfaction.

## **2.2. LITERATURE REVIEW**

LP strategies are implemented by organisations seeking to align themselves with world class manufacturing and state of the art techniques as well as to improve efficiency and profits, thus becoming more competitive. LP strategies such as HR/IR or process innovation and initiatives need to be accompanied by climates that complement the adoption and implementation of such innovation (Baer and Frese, 2003).

Successful implementation of LP requires the support of various strategies and climates within the organisation. The LP or lean thinking paradigm stresses the building of high-trust relationships, and the development of non-adversarial systems of HR/IR. In turn, and as agreed by Clark and Clegg (2000), enhanced communication has to go hand in hand with a restructuring of HR/IR away from adversarialism and centralisation toward a more participative system.

There is a wide variety of constructs that are associated with employment practices in the context of LP process implementation and the organisational climate that complements the adoption of such innovations. LP proponents (Womack et al, 1996; Hays, 2002; Baer & Frese, 2003) argue that manufacturers

seeking the successful implementation of LP practices must develop a receptive organisational climate that includes changes in employment practices.

### **2.2.1. Organisational Climates**

“Climate refers to surface level manifestations of underlying values and assumptions” (Denison, 1996, cited in Baer and Frese, 2003: 48). Climates are individual, but inter-dependent constructs that make up a culture. “Culture constitutes a ‘deeper, less consciously held set of meanings than most of what has been called organisational climate” (Reichers and Schneider, 1990: 24, in Baer and Frese, 2003: 48).

One such climate is HR/IR. There is strong evidence in the literature to support the argument that effective implementation of LP would require a HR/IR climate that includes workers as participating and contributing individuals. Proponents of LP (Womack et al, 1996; Hays, 2002; Baer & Frese, 2003) argue that multi-directional communication and cultural change are the cornerstones of LP's success in all structures and levels of the organisation. In turn, communication and climate change are central to HR/IR strategies within an organisation. Therefore, the success of LP implementation in a South African (SA) organisation requires a change in HR/IR climate. This means that LP implementation will require a major shift in the context of people relationships and their perspective of Industrial Relations (IR) and system changes in SA.

#### **2.2.1.1. In-Company HR / IR Policy**

Traditional methods of management can be defined as the use of an authoritarian approach where “management reserves the exclusive right to direct and control methods of processes and means of handling work” (Lewchuck and Robertson, 1997: 5, cited Babson, Vol.18, 1993:7) Traditional methods in HR/IR practices within traditionally organised plants are not compatible with LP. Pfeffer et al (1995) argue that changing HR/IR practices should be closely associated with LP as achieving competitive success through people involves fundamentally altering

how managers think about the workforce and the employment relationship. This statement falls within Clarke and Clegg's (2000) argument that organisations develop a deep-rooted organisational culture as a basis from which to organise transformation in the workplace.

Bluen & Donald (1991: 13) explain how the IR climate develops through internal communication and in-company relationships. HR/IR systems act as guidelines and communication strategies support inclusion of worker participation in decisions around developments which affect their jobs. Hay (2002) argues that teamwork calls for a move toward collective effort, joint goal sharing, increased interdependency and the promotion of co-operative orientation. This implies that work environments where the workers function as an integral part of interdependent and collective systems such as HR/IR will promote further co-operation (Hay 2002).

#### 2.2.1.2. In-Company IR in South Africa

South Africa faces a mammoth task to change an entire country's way of thinking after political change. As industry in South Africa seeks to change their internal company climate, it needs to attempt this within a changing society that is adjusting to political change and the correction of past injustices. This organisational change not only has to accommodate change in the way people communicate and respect each other in the work environment, but also has to deal with the country's major restructuring away from the values and beliefs of the apartheid system. Serious consideration has to be given to attitudes of workers and management alike, particularly where there are cases of previously disadvantaged workers and previously advantaged managers. As often is the case, traditionalist managers find it difficult to adjust and accept worker contribution to direct or control methods of work, and thus slow the process of development toward modern styles of HR/IR. Previously adversarial parties have to overcome issues of the past in order to develop trust.



IR Climate is argued by Bluen & Donald (1991) to be made up of various constructs including: Company IR Policy, Communication, Supervision, and Worker Representation. Bluen and Donald (1991) “provide an in-depth view of in-company IR in South African industry”, basing their argument on Nicholson’s (1979) view that the IR climate develops through internal communication and labour/management relationships. Therefore, in-company IR in turn will show the organisation’s HR/IR climate.

They studied components of in-company IR, namely, industrial relations policy, supervision, worker representation, grievance procedures, disciplinary procedures and organisational communications. Their study was based on information from members of three South African mines. Bluen & Donald (1991: 12) supported Nicholson’s (1979) view that investigating the IR climate can help explain labour/management relations by providing a link between relevant and/or organisational structures (i.e. in-company IR systems) and industrial conflict. They suggest that “aspects of IR climate have been related to organisational performance, inter group conflict, labour turnover, absenteeism and communications” (Bluen & Donald, 1991: 12). Four of these components, namely, In-Company IR, Supervision, Worker Representation and organisational communication have been used in this study. Grievance and Disciplinary procedures were left out as triangulating results against factual documentation would prove a problem in environments where the organisation is not open to allow external studies of their documentation, as was the case at Xco.

“In-company IR is shaped by the rules and procedures governing labour-management relations and the actions of workers and management; therefore, a viable, fair IR policy, acceptable to both parties, provides the basis for sound in-company IR” (Brewster, Gill & Richbell, 1981; Salamon, 1987, in Bluen & Donald, 1991: 13). An efficient organisational communication system is essential for In-Company IR to be effective (Bendix, 1989, in Bluen & Donald, 1991: 13). Clear, open channels of labour-management communication can thus reduce the potential for conflict. Therefore, workers’ attitudes to IR policy are reflections of

the worker / management relationship and reflect whether the IR policy works to link the two. It is the contention here that Company IR policies will affect worker participation in decision making and communication.

#### 2.2.1.3. Climate for Initiative

Evidence suggests that individual-level personal initiative is related to better performance. Frequently, initiative is not welcome as some are threatened by those who come up with new ideas; however, long term gains include smoother production, better implementation of innovations and, ultimately, better performance (Baer & Frese, 2003: 49).

Baer & Frese (2003: 48) argue that formal and informal organisational practices and procedures, guiding and supporting a proactive, self-starting, and persistent approach toward work are potentially helpful in increasing organisational performance through encouraging a high level of initiative in the workforce. In such a climate, actions and ideas that help production are self-started even if nobody is around to help or give orders, and difficulties and problems are met with persistence to overcome them. All of these factors should help to increase smooth production, thereby increasing company performance. A climate for initiative should therefore increase the general organisational level of performance (Baer & Frese, 2003: 49).

Their results suggested that climates for initiative and psychological safety should be incorporated into conceptualisation of change management processes. Climate for initiative encourages and leads to proactive behaviour. A hypothesis tested in this study, therefore, is that a measure of climate for initiative will lead to a viable climate for Psychological safety and, in turn, to improved communication, understanding and participation in decision making.

#### 2.2.1.4. Climate for Psychological Safety

“Psychological safety refers to a work environment where employees are safe to speak up without being rejected or punished” (Baer and Frese, 2003: 50). It also refers to feeling safe to communicate openly without fear.

Brown & Leigh (1996, in Baer and Frese, 2003: 50) studied the process by which employee perceptions of the organisational environment are related to job involvement, effort and performance. They found direct psychological safety linkages related to job involvement and indirect linkages to effort and work performance in an organisational environment. Literature on the subject reveal that, when employees perceive the potential for satisfying their psychological needs in the workplace, they engage themselves more completely and invest greater time and effort in the organisation's work. Baer & Frese (2003:, 50) cited Brown & Leigh (1996) who adopted Khan's (1990) definition of psychological safety as the employee's "sense of being able to show and employ one's self without fear of negative consequences to self-image, status, or career".

"Team psychological safety can be defined as a shared belief that a team is safe for taking inter-personal risks" (Baer & Frese, 2003: 46). They found strong support for team psychological safety and team learning behaviour, which in turn was related to team performance.

Psychological safety, as discussed by various authors, contributes to the climate for initiative, interpersonal trust, communications, and participation in decision making, as it creates the safe space for workers to develop these constructs. Therefore, it is expected that psychological safety will show relationships to climate for initiative, interpersonal trust, communications, and participation in decision making.

#### 2.2.1.5. Communication

The strength of the links in communication determines the quality of outcomes in relationships, and the overall success of concepts such as LP. LP demands the effort of team-based quality communication and the openness of communication is in turn an important aspect of the overall organisational climate. The same applies to non-adversarial Industrial Relations and high trust relationships which are central to the concept of LP. Improved communication is a fundamental link to system improvement and climates that support such improvements. "Improved

communication may increase the opportunities for worker participation where it includes and involves workers in day-to-day problem solving. With some influence over how [workers] perform their work, it creates opportunity to enhance the quality of their working life” (Lewchuck and Robertson, 1997: 2). Therefore, an improvement in the level of communication between workers and management will indicate the current level and/or quality of their relationships. The measure of communication is expected to indicate the extent to which workers participate in decision making.

#### 2.2.1.6. Worker Representation

Worker representation forms an integral part of the organisational communication system. Worker representatives represent the shop floor and negotiate on behalf of labour. They also participate and consult with management on decisions around development within the organisation. They bargain and negotiate on all levels within the organisation and outside the organisation. This includes presenting to colleagues, HR/IR, Production, Manufacturing, Executive management, and externally to the union who, in turn, represents them at bargaining council and industry level. Therefore, it is expected that the survey will indicate the strength of the worker representative position and its relationship to other constructs.

### 2.2.2. Workplace Contexts

#### 2.2.2.1. Interpersonal Trust

A South African study concentrating on trust, by Hay (2002), investigated employee / management trust and found that, without trust, communication within the organisation cannot drive successful and lasting change. People need to trust each other in order to place faith in the process of change. This study further found that trust between team members was fundamental to the functioning of the organisation and saliently promoted co-operative behaviour. Their findings further suggested that trust between team members is positively associated with more open communications.

Trust facilitates change in teams toward open communication in LP practices where problems are easily identified and solved (Payne, 1990; Helms, 1990;

Peters, 1994, cited in Hay, 2002: 43, 46). “Teamwork also calls for a move toward collective effort, joint goal sharing, increased interdependency and the promotion of co-operative orientation” (Safizadeh, 1991, cited in Hay, 2002: 43). Therefore, communication is expected to determine how much interpersonal trust exists.

#### 2.2.2.2. Supervision

Supervision relates to communication and company IR policy as well as having links to all the other variables. Supervisors communicate with workers as first line management on behalf of top management. This is the most common interaction between management and workers. Workers, in turn, communicate to worker representatives who in turn report to HR/IR and the union on behalf of workers. Therefore, it is expected that these four constructs will show inter-relations.

#### 2.2.2.3. Participation in decision making

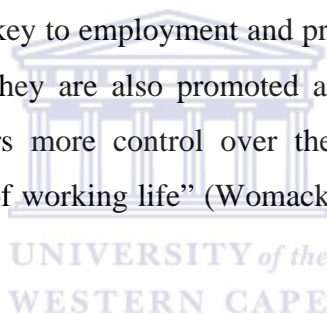
Participation in decision making refers to Cook and Wall’s (1980) Maslow type of higher order of needs scale. Personal needs non-fulfilment, as used by Cook and Wall (1980), imply that the needs in question are not fulfilled. Cook and Wall’s questions focused on “the degree to which Maslow-type ‘higher’ needs are satisfied in a job or work environment and not on the individual differences” (Cook and Wall, 1980: 41). However, this study focuses on questions which address those needs which allow the worker to participate in decision making with regard to his / her job. The survey questions, addressing personal needs non-fulfilment, were adjusted to reflect levels of participation in decision making.

#### 2.2.2.4. (i) Traditional methods

“Sometimes traditional managers purposely try to reduce their employees’ influence and control over organisational matters. They seem to believe that organisational control is a fixed, finite entity that emanates unilaterally from the top of the organisational hierarchy” (Abdel-Halim, A.A., 1983b, in Sagie & Koslowsky, 2000: 21). “According to this method, worker participation should be avoided, because an increase in the subordinates’ control implies that management loses an equal amount of control” (Sagie & Koslowsky, 2000: 21).

“Thus there is little potential for independent actions and no respect for workers’ contributing knowledge, intelligence and skill, resulting in a waste of the creative potential of production workers” (Womack et al, 1990, cited in Lewchuk and Robertson, 1997:3). Traditional managers thus exclude workers from decision making around work, exploit workers, and treat workers in a condescending manner. These managers can be abrasive in the extreme.

“Contemporary models of work organisation claim to make better use of worker knowledge of the production process, enhancing the role of individual workers in workplace decision making, and blurring the division of labour between management and production workers. For policy makers, these new models of work organisation, based on the concept of flexible empowered workers, are increasingly seen as the key to employment and productivity gains” (Lewchuck & Robertson, 1997: 2). “They are also promoted as a form of work organisation which will give workers more control over their work environment, thereby enhancing their quality of working life” (Womack et al, 1990, cited in Lewchuck & Robertson, 1997: 2).



#### 2.2.2.4. (ii) Worker Participation

This paper argues that it is necessary for HR/IR to promote worker participation in decision making as part of HR/IR strategy to the process of LP implementation. HR & IR should form an integral part of LP. Pfeffer et al (1995) argued that HR/IR practices are closely associated with LP in order to achieve competitive success through people. “In order to remain competitive companies in the auto component industry need to adopt new and innovative HR/IR practices” (Pfeffer et al, 1995: 9), a trend that emphasizes higher worker involvement in decision-making, in order to benefit from worker experience. “Workers seen as intelligent, competent and valued partners respond positively and co-operate with management toward common goals” (Sagie & Koslowsky, 2000: 20, cited in French, Israel and As, 1960). In effect, relationships between workers and managers drive the process toward LP.

Sagie & Koslowsky (2000: 19) cited Erez and Arad (1986), Locke, Latham and Erez (1988) and Vroom and Yetton (1973). They discuss the importance of worker participation in decision making, how it includes their immediate interest and motivates worker acceptance of decisions made as a result of their participation. “The importance of workers buying into new concepts of change is fundamental to its success. The motivational mediators considered are recognition, role and task clarity, sense of meaning, sense of control, self-efficacy, extended goal level, commitment to the joint decisions, shared values, trust in and identification with management” (Sagie & Koslowsky, 2000: 19, citing Erez & Arad, 1986; Locke, Latham, & Erez, 1988; Vroom & Yetton, 1973).

“Through effective mediating variables, management participatory practices affect work outcomes. Without these variables no positive outcomes can be expected”. (Sagie & Koslowsky, 2000: 23). The level of worker participation in decision making with regard to new concepts and policies relates to their organisational commitment in that they buy into such concepts by way of their participation. At the same time this can be an indication of management’s support for new concepts and theories of power and responsibility sharing. Therefore, it is expected that organisational commitment is improved by workers’ participation in decision making.

“Management directly influence worker motivation through their choice of management style and methods. There are two fundamental determinants of sustainable success. The first is managing people more effectively. The second is that the change in culture - how people are managed and the effects of this on their behaviour and skills needs to be comprehensive” (Pfeffer et al, 1995: 2 (online)).

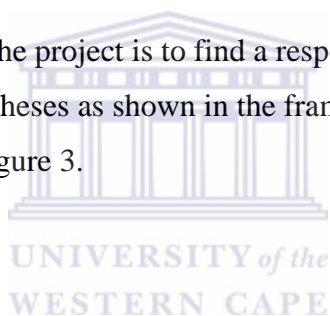
Individual outcomes of trust and commitment as well as initiative are requirements for successful employee participation. The adoption of appropriate individual attitudes impact climate change and motivates workers to drive business outcomes as the outcome determines the success, or otherwise, of LP

implementation. This emphasises the importance of communication among employees. “Without the fundamentals of open communication it will prove difficult to have success among employees working in teams or inter-related groups” (Hay, 2002: 46).

### **2.3 Detailed Hypothesised Model, Figure 3.**

It is hypothesised that Organisational Climates, made up of Climate of Initiative, Climate for Psychological Safety, Company IR Policy, Communication and Worker Representation provide the Workplace context conducive to higher levels of Interpersonal Trust, Participation in Decision Making, and Supervision. This in turn has a positive impact on Individual Attitudes and Behaviours measured by Job Satisfaction, Organisational Commitment and Intrinsic Job Motivation.

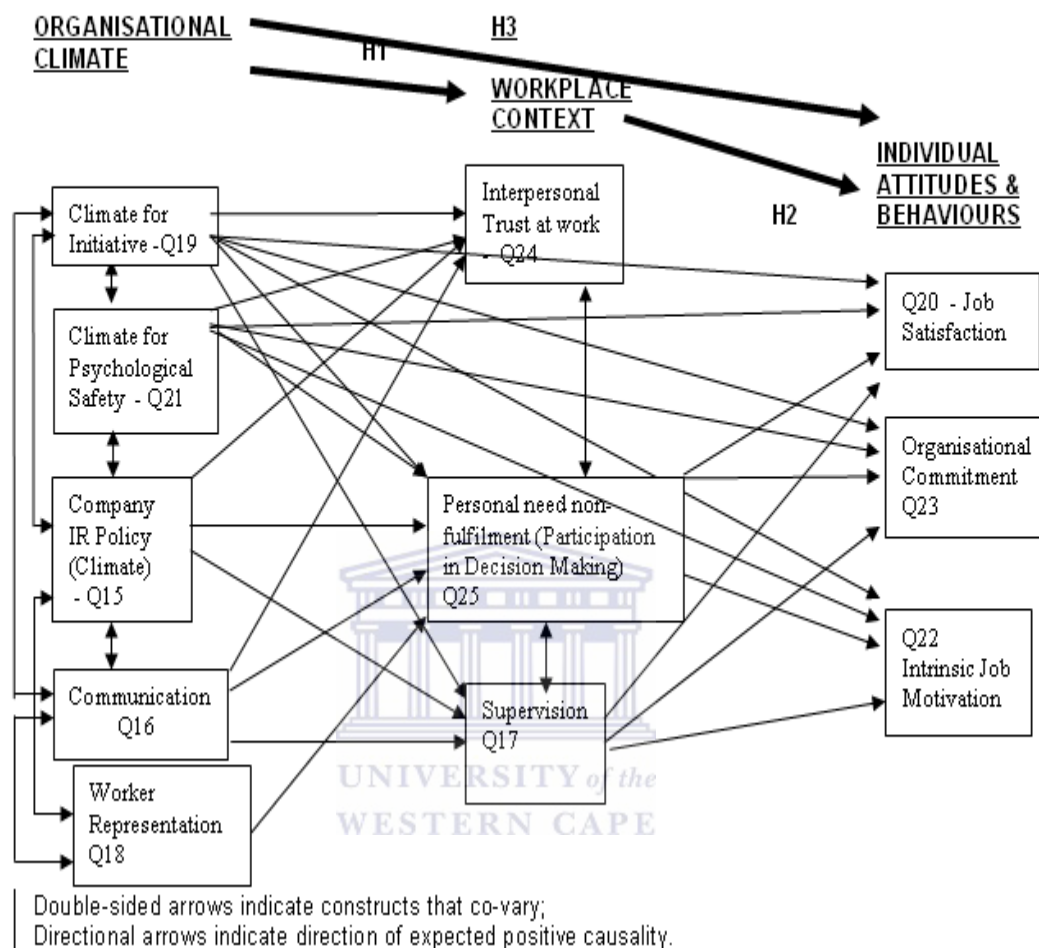
The desired outcome of the project is to find a response to the research questions and support for the hypotheses as shown in the framework presented in Figure 2 and further detailed in Figure 3.





**FIGURE 3 Conceptual framework**

– indicating the hypotheses and expected relationships between variables



### **2.3.1. Hypotheses as depicted in Figure 3 and discussed in the literature review.**

This section explains the relationships between variables depicted in Figure 3, which are discussed in the literature review earlier in this chapter.

1. Organisational Climate (comprising the Climate for Initiative, the Climate for Psychological Safety, the In-Company IR Policy, Communication and Worker Representation) has a positive impact on Workplace Context variables (Interpersonal Trust, Participation in Decision Making and Supervision).

2. Workplace Context variables (comprising Interpersonal Trust, Participation in Decision Making and Supervision) are expected to have a positive impact on the Individual Attitude & Behaviour variables (Intrinsic Job Motivation, Job Satisfaction and Organisational Commitment).
3. Organisational Climate variables (Climate for Psychological Safety, Climate for Initiative, and In-Company IR Policy, Communication and Worker Representation) will each have a positive impact on the Individual Attitude & Behaviour variables (Intrinsic Job Motivation, Job Satisfaction and Organisational Commitment).
4. All independent variables (under the Organisational Climate heading) - Climate for Initiative, Climate for Psychological Safety, In-Company IR Policy, Communication and Worker Representation – co-vary with one another.
5. The Workplace Context variables (Interpersonal Trust, Participation in Decision Making and Supervision) co-vary with one another.
6. The Individual Attitude & Behaviour variables (Intrinsic Job Motivation, Job Satisfaction and Organisational Commitment) co-vary with one another.

Figures 2 and 3 attempt to simplify the presentation of the links discussed above and earlier in this chapter. These frameworks also allow the resulting discussion to be structured in such a way that the hypotheses can be addressed according to the diagrams.

#### **2.4. Conclusion**

In sum, the analytical framework seeks to address whether Organisational Climates have a positive impact on workplace context. This in turn is expected to influence outcomes in worker attitudes and behaviours, and thus provide a more favourable environment for the LP implementation process in the long term.

The literature review provides reason for the variables chosen in this study. The argument in this project is that organisational climates are indirectly responsible for worker attitudes and behaviours, which in turn build the fundamental foundation for the success of long term systems like Lean Production.

This project also aims to draw attention to variables often considered as least important to strategy by organisations, when in actual fact they should be among the fundamental considerations in organisational change.



## **CHAPTER 3**

### **3. RESEARCH METHODS**

A combination of methods was chosen for this study because it provides an opportunity to study the in-company HR/IR relationships from more than one perspective. This paper uses two methods for collecting and analyzing data:

1. Interviews with role players (qualitative research which will allow in depth study).
2. A survey of worker attitudes (quantitative research).

A case study is suitable to a small-scale investigation, in this instance, chosen as it is used to increase understanding of worker perspectives of HR/IR. In this case, the focus of attention is on the case and not the industry (Nunan, 1986:76). The empirical research of experience and observation focuses on management initiative and worker attitude in a South African organisation using both qualitative and quantitative methods.

The quantitative element involved a survey of worker attitudes while the qualitative element included interviews with role players within Xco. Qualitative methods were used to gather the background information on the company and to provide the context within which the study took place. The recent history of the organisation with reference to relationships, culture and climate is drawn from interviews with the CEO, change agent, managers and the union representatives. Xco policies, procedures and records are not readily available for public scrutiny and were treated as confidential company information. This complicated the collection of data from company records. The broader organisational changes, discussed in Chapter 4, are drawn from the interviews to address the macro context of the study and research questions relating to the relationship between organisational change, the Organisational Climates that support these changes and Individual Attitudes and Behaviours that contribute to the Organisational Climate.

In many cases company records may reflect only management perspectives. In many instances influential factors may have been eliminated or just left out of records and minutes, as records do not reflect management errors or matters which will tarnish the company's reputation. On these grounds, a survey of worker perspectives was chosen to overcome associated problems and uncover the story from the worker perspective, as in-company IR reflects the IR climate and effectiveness of the IR system of the organisation (Bluen & Donald, 1991: 13). Quantitative research methods were used to analyse the research questions based on the results of a survey questionnaire to collect the data from workers.

### **3.1 Data collection process**

The general background information was gathered in a series of meetings ranging from November 2005 to July 2007, with the Continuous Improvement Consultant. The purpose of the meetings was firstly, to ascertain if the study was acceptable for the organisation and suitable for the project as well as to arrange access to the organisation and, secondly, to uncover the background information that would form the context for the study. Arranging access created many challenges. However, after a few months, the HR/IR manager was appointed as the survey contact person. The study was discussed in detail and the questions for the survey were approved by the HR/IR manager. Key role players were identified and the arrangements for the interviews went ahead.

The study was not introduced to the workers before hand to exclude co-worker and or union strategy which would influence the study outcome. Therefore, the questions were tested on external and unrelated workers for ease of understanding and to test the time required for each respondent to complete the questions.

Ten key role players were interviewed within the organisation using semi-structured questions and their responses were recorded. Issues arising out of interviews and relating to change and actual events were noted. All data was collected during the survey at the work site.

### **3.2. Interview process (Qualitative Methods)**

Semi-structured interviews were used to obtain the history of individual accounts of events, to collect the background information and to formulate a context within which the survey took place. Worker representatives and managers were interviewed on their experience with the aim of getting their direct view of the change process. In the interviews, topics relative to the project were covered and each interview took about 1 hour. Each person gave insight to their department and their department's experience of HR/IR. The identical semi-structured and open questions were used for each interview. The questions for these interviews were not the same as those for workers. These questions were directed at gathering contextual information for the background of the study as well as to triangulate what the thoughts were around the hypothesis question. The results of these interviews are presented in Chapter 4.

### **3.3. Survey (Quantitative Methods)**

Workers were not tested for literacy skills before doing questionnaires. It was taken for granted that the majority would be comfortable with English. Only one person indicated that he needed assistance. The questionnaire was based on previously tested questionnaires to best suit the organisation. However, it was not translated into other South African languages.

Surveys were conducted in May 2006 and again in June 2007. The same questionnaires were used for both surveys but the same workers were not necessarily surveyed on both occasions.

A sample of 60 workers out of production employees, randomly selected, was used for the first survey in May 2006 and 70 in June 2007. Though sampling was random, a stratified sampling approach was adopted so that the number of workers surveyed per department is relative to the department size. Survey respondents took about 40 minutes to complete their questionnaires. Shop-floor workers completed their questionnaires individually, four at a time. While completing the surveys they were free to ask the researcher questions of

clarification. This process continued for two full days to cause the least disruption to the production process. In total, the survey took 40 work hours, spread over the two day period to cover all shifts, including morning, afternoon and night shift, starting at 07h00 and ending around 00h00.

The process was repeated in June 2007 although the groups of respondents were bigger as production processes went off line at the time of the survey. This allowed more workers to be seen at the same time, as they would not be able to spare them once the line was up and running again due to work time lost. Each division sent workers in groups when they were between routine operations. This meant that production influenced the process of selection. The questionnaires were filled in, in the presence of an assistant and collected immediately.

### **3.4 The Survey Instrument**

The survey instrument draws questions from a variety of previous studies. The attitudinal survey instruments measuring In-company IR and Communication have previously been verified by Bluen & Donald (1991) whose questions reflect the current IR status of an organisation. Questions from Warr, Cook & Wall (1979) address the current worker attitudes with regard to job satisfaction and intrinsic job motivation. Baer & Frese's (2003) questions assess the climate for initiative and climate for psychological safety, and Cook and Wall's (1980) measures of organisational commitment, interpersonal trust at work and personal need non-fulfilment (Worker Participation) were used. The above authors designed and verified these questions for use in further studies, and they are still widely used in current studies.

#### **3.4.1. Measures**

Eleven measures were used in this study. All measures used a 5-point scale ranging from 1 (not at all) to 5 (always), except in the set of questions for Job Satisfaction, which had a 7-point scale ranging from 1 (Very dissatisfied) to 7 (Very satisfied). The job satisfaction measure of 7 points was re-scaled using the factor 0.714 (i.e. 5/7) in order to facilitate comparisons of the means. Where the

Cronbach alpha for the questions exceeded 0.6, variables were created by aggregating the results into a composite measure. All measures then became comparable. The number of items per set varied and open ended questions was not used for analysis as they provided information for background context. In the final analyses, scoring for the negative keyed questions was reversed.

### **3.5 Validity**

Questionnaires used have been previously tested and the same questionnaires were used for each survey. In order to test internal validity, triangulation of background information was attempted; however, formal documentation was not available to test system implementation, procedures and processes, but then information from interviews appear in alignment with each other and with survey results.

Demographic distributions in Chapter 5 show no significant difference in the two survey samples. As the samples were drawn at random, it is not known how many respondents participated in both surveys of 2006 and 2007. In order to protect the survey from being skewed by preconceived ideas, respondents had no prior knowledge of the survey content.

### **3.6 Data Analysis Process**

Two cross sectional studies were done on site at Xco, one in May 2006 and the other in June 2007. The 2007 study was carried out in order to address research question 2, "What are workers' present attitudes to HR/IR practices?", relative to change in HR/IR and production over a one year period. The method of analysis includes correlation and partial correlations using SPSS. The results of the two surveys are compared. The means and standard deviations of the total scores of both studies together are used to discuss the 11 measures. The Cronbach alpha will be used to assess whether or not the measure is reliable. Then, a comparative study is done between the first study and the second study. The data from the survey will determine the difference in worker attitudes to HR/IR practices over the period. Further, a conceptual model is produced from the results to show the



strength of relationships between variables based on the hypotheses discussed in Chapter 2.

The survey analysis of worker perspectives and the interpretation of the survey are presented in Chapter Five. The questionnaire used for the survey is presented in Annexure I.



## **CHAPTER 4**

**This chapter informs the contextual survey background and provides an understanding of the organisational changes and challenges experienced at Xco.**

### **4. ORGANISATION Background at XCO**

Xco hosted the research where all surveys and interviews took place on site. This chapter introduces the organisation, its history, strategies, HR/IR and the current context within which the research took place. Diagrams explain the organisation's strategies, the effects on operational change and departmental changes toward LP and WCM.

The information and diagrams in this chapter are compiled from a variety of interviews held with the relevant department managers and union representatives from 2006 to 2007. Departments and people interviewed included CEO, Manufacturing, Finance, Production, HR, IR, Training, Benefits and Union representatives. In order to keep the interviewees anonymous, names and positions are not always referenced.

#### **4.1. Business Environment**

##### **4.1.1. Organisation Background**

The company is located in an industrial area, set away from the city, surrounded by a town developed into a low income housing community for the workers who supply labour to the industry. The local community is rife with social problems including unemployment, drugs and gangsterism. Cost of living is relatively high since only one shopping centre services the area and there are no local social outlets for a working class which cannot afford private transport to travel to neighbouring towns. Industry in the area originated in the apartheid era when government funded and offered huge tax rebates to set up business in the area.

### History of Organisation

Xco has an interesting history. It was established in 1983 as an independent firm. Then, about three years later, it joined a parastatal. At the time, as a government parastatal, Xco enjoyed relief from certain tax duties and government protected certain industries by limiting international trade of certain goods and placing very high tariffs on imports. In 1994, the Board of Trade and Tariffs reduced trade barriers and began to reduce import and export tariffs. Xco continued to export and lost revenue on the trade adjustment to international importation of the same components.

In 1998, the parastatal unbundled and, in 2000, Xco became a private company. The change of ownership meant the withdrawal of government funding and the loss of large government contracts. Around the year 2001, the demand for this type of product dropped by 60% due to the new import / export tariffs. In addition, the cancellation of a large export order in 2001 saw a 50% reduction in turnover, accompanied by a cancellation of a local order which led to a negative cash flow and unprofitable operations. At the time, 2001, Xco supplied non-core components to local suppliers and was awarded a European contract for the same. However, this part of the business was later closed, around 2005/6, due to financial pressure. A 2001 supply contract promised to keep the company afloat for a period of 18 months.

In 2002, a new shareholder acquired Xco and a capital investment of about R200-million was made and set to create about four hundred jobs and two more machining lines by 2004. This investment also promised to include efficiency improvements, the exchange of tooling to enable the shift from one product to another, the development of products and joint marketing in the UK. This investment should have enabled Xco to negotiate international contracts to meet global market requirements. It was predicted that Xco would employ 1000 workers by 2006. However, this has taken a lot longer than expected and after a lot of hardship, it seems to be showing benefits mid-2007. In 2003, a parastatal partnership venture enabled R60-million to be spent on the organisation's

expansion of a third production line. The deal includes a trust and that a portion of the government's dividends will be ploughed back into the community through training and education. Since 2003 the company has been in a financial crisis (details of, and references to, the above related articles will be withheld in order to protect Xco's identity).

#### Recent times (2006/7)

Currently, Xco is split into two major sections, namely, the Press Plant and the Machining Plant. On the same premises as the Press Plant are the Tool / Die Shop and the main administration block for Xco that houses all the managers, HR/IR, training officers and clerks. Diagonally across the street, on separate premises, is the much larger Machining Plant where there is an administration area to support the plant, and offices for an IR Officer and the Production Managers.

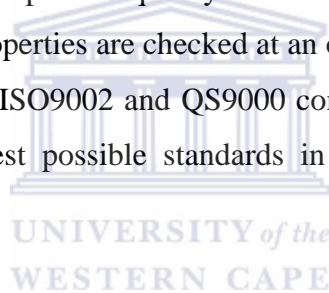
In May 2006, there were 443 shop floor workers at the plant, 50 office workers and 8 senior managers. The company has grown from 180 workers, before year 2000, to about 470. In April 2006, 31 workers left, 11 of them were retrenched, 12 were contractors, 8 resigned and some were recruited into other sections. Changes in employment are shown in Table 1 below. Resignation and retrenchment information were not made available to the researcher.

**Table 1** Resignation and Retrenchment Table

Year End-28 February 2007	Total No. Employees	Left other reasons	New Employees	No Employees transferred sections
2007	435			
2006	470	79	44	41
2005	500	79	49	93
2004	428	54	126	18
2003	395	35	68	1
2002	331	53	117	4
2001	267	39	103	
<b>01 March '07 to May '07</b>		3	40	19

Xco now owns the Tool / Die Shop (17 workers) & Press Plant (105 workers) and the Machining line 2 (74 workers). Machine line 1 (98 workers) is rented from a client and Xco has a contract to manage the line for the client. Machine line 3 (14 workers) is a sales / lease agreement with a client, to purchase the line over a period and will eventually become Xco's property. Current investment is focused on developing technology or technology acquisition, die shop development and a UK investment for product research and development (Interview with Production Management, March 2007).

Globally, Xco is one of only four producers of similar components. They have the largest and most modern press in southern Africa. All tools and dies are manufactured in-house, in-process quality checks are performed at all key process areas and mechanical properties are checked at an on-site metallurgical laboratory. Xco operates to VDA6, ISO9002 and QS9000 compliant standards. This enables them to meet the highest possible standards in terms of product quality and service excellence.



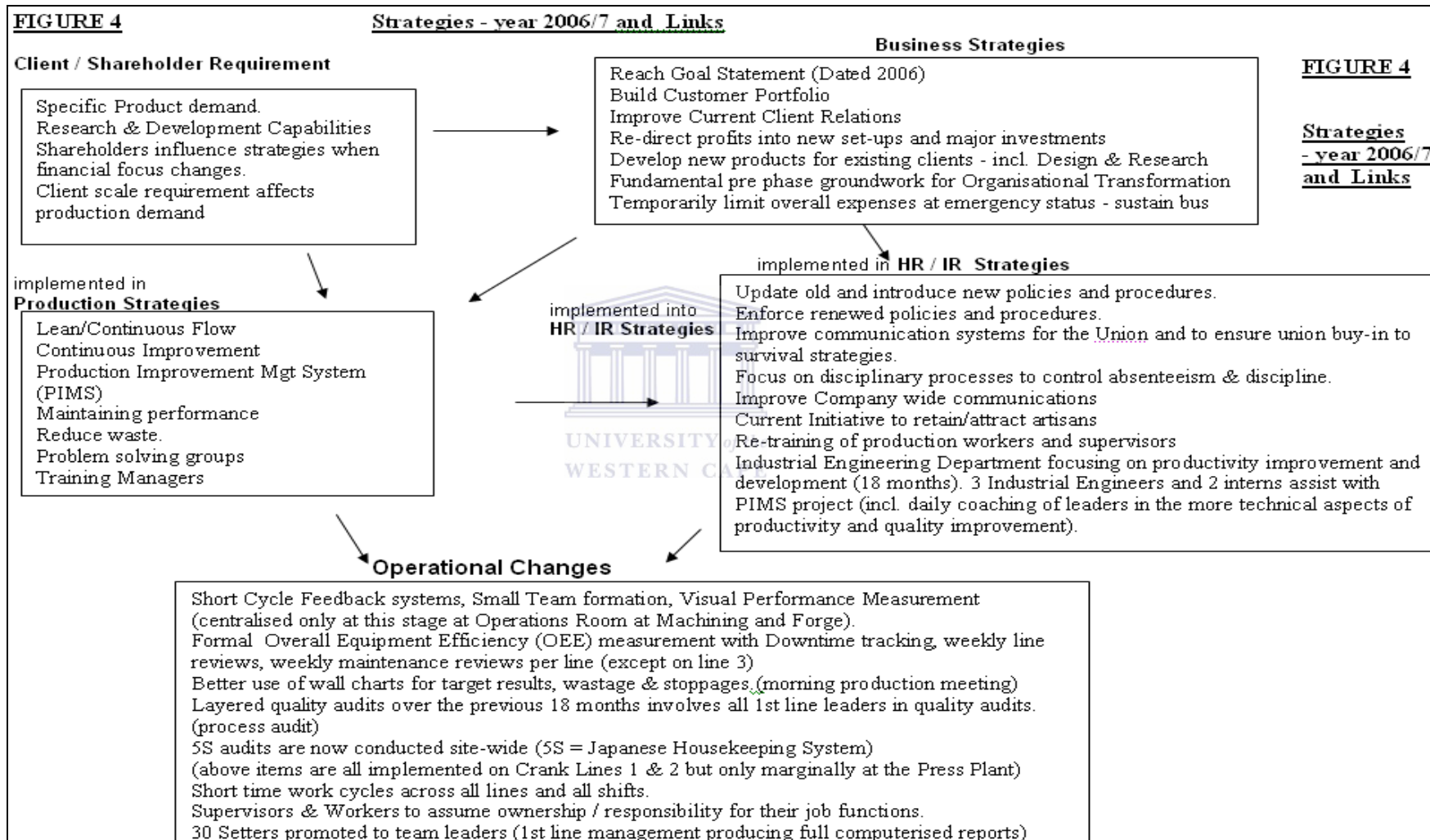
#### **4.1.2. Organisation Strategies – Figure 4**

Business strategy and strategic planning are in the hands of the CEO and the Board of Directors. The Board of Directors, in conjunction with sub-committees, make decisions about operational improvement levels, costs, quality, product range and critical issues to be discussed / negotiated with the shop stewards.

Figure 4 below attempts to plot and link the organisation's strategies for 2006/7. It shows that Client / Shareholder requirements affect Business and Production strategies, and how business and production strategies affect and ripple through HR/IR and filter into Operational Changes either directly or through HR/IR. This diagram is a detailed description of Xco's organisational strategies and individual innovation implementation per department in order for strategies to be actualised on the shop floor. It also sets the tone of the overall direction and flow of the organisation's development.

The information in this chapter and the diagrams in this chapter were compiled from a variety of interviews held with relative department managers, and union representatives from 2006 to 2007. In order to keep the interviewees anonymous, names and positions are not always referenced.





#### **4.1.3. From traditional practice to prepare for LP & WCM**

The entire top structure of the organisation was re-organised as five department managers left the company, leaving only two experienced managers. To fill the gaps, one middle manager was promoted and four new managers were recruited. This is a serious loss in terms of experience and in-depth process knowledge in the organisation. In the words of the Manufacturing Manager, “it takes 5 to 10 years to replace lost skills and experience, and the company has had huge losses over the past 3 years as people resigned and took retirement packages.” This re-organisation of management was not seen as a strategic move but rather a necessary shift as two senior members of executive management passed away (2005/6) and created a ripple effect in the top management ranks.

Xco Board of Directors have recognised that lean production, as a system of production, cannot be successful in isolation, and are currently doing research to identify ways to improve and develop climates for lean production by discussing strategies to focus attention on worker value and HR/IR. The search for process improvement includes system performance measurement per zone area in the plant to identify areas for improvement, particularly in areas where bottlenecking occurs. Examples of measurement include down time, maintenance time, throughput time and causes of stoppages and shortages. The research tests for efficiency, identifies problem areas for attention and makes recommendations for improvement.

A skills best practice audit was done to highlight problem areas that needed attention. A full audit, focused on flow-through, was done in order to identify problem areas that needed fixing. One of the problems is that there are existing technical training learnerships in place, that started 2 or 3 years ago, but there is currently no new training.



Long development cycles and the introduction of new products put a strain on productivity, as limited funds are available. New products together with old machinery and limited skills are of the many challenges they face.

Of two sites, each has a production and maintenance section. Each production section is split into 2 groups. One group has 2 shifts and the other group works 3 shifts. The system is a flow line, a conveyer belt system that runs a 5-day week and is a 24 hours a day operation. The employees are split into morning, afternoon & night shifts, and work a week of each shift on a rotational basis. Another shift works only on weekends and gets paid for a full week's work (Interview with Maintenance & Production Managers).

Up until July 2007, Xco was not in a financial position to implement full Lean Production or WCM methods. They did, however, use the time to phase in various systems that would prepare the organisation for further LP processes. Tables 3, 4 and 5 show Xco bridging the gap from a fully fledged traditional system toward LP and WCM methods and ways of thinking.

WESTERN CAPE

The tables below show the pre-lean phase of Xco. These indicate what operational issues and changes have affected the workplace from 2005 to July 2007. The diagram has a column for each section in the organisation. This information was put together from interviews with various managers involved in production and manufacturing over the period from 2005 to July 2007.

Table 2 provides an overview of organisational changes describing the current operations, management structure, and production system in each of the plants. The table shows the major changes and challenges endured by this organisation. The most significant changes are highlighted in Table 2, where major changes include top management restructuring and production system changes. Many new managers were employed to replace those who left and those remaining from the previous structure moved departments. System changes in production involved

small group activities, improvement in standard operating procedures, visual management and feedback systems.

Table 3 provides an overview of the LP and WCM innovations and initiatives that have been implemented on each line from 2005 to June 2007, bearing in mind that advancement of any kind was limited by finances at the time. They did the best with the available resources. The most significant changes are highlighted in Table 3. In Table 3, LP implementation has seen team leaders progress to first line management and pre-lean concepts like housekeeping and the implementation of small group activity. Other changes include improvement of cycle times, visual management, fault finding and resolution, improved production control, training and maintenance.

Table 4 provides an overview of HR/IR changes implemented during the period studied. These changes were not driven by HR/IR but rather by the introduction of production and manufacturing initiatives which then used HR/IR as the logistics vehicle.


Table 4 introduces HR/IR changes which were limited to their role in training, reorganising shift structures in conjunction with production management and disciplinary processes.

**Table 2 - Overview of Organisational Changes**

**CONTRIBUTING FACTORS - TOWARD LEAN PRODUCTION & WCM**

	<b>PRESS PLANT</b>	<b>LINE 1</b>	<b>LINE 2</b>	<b>LINE 3</b>
Ownership	Xco	Managed for Client	Xco	Leased from Client
No. Employees	105	98	74	14
% Export & Local Prod.	95 % export & 5% (non-core local item)	100% export	100% export	100% export
No. Operations	13	37	31	13
Basic Sequence of Line	Currently Zigzag however there is a plan to re-arrange extra heavy equipment into a straight flow line.	Straight Flow Line	Straight Flow Line	Snake Flow
Briefly Describe Ops	Semi-Automatic sequential line with skilled operators. (3-6 months training a prerequisite)	Semi- Skilled and Skilled operators	Semi- Skilled and Skilled operators	Semi-Automatic sequential process line, requiring only semi-skilled operators
Management Changes & Year (The MD and the Technical Director both passed away, causing top mgt restructuring)	Early 2005 & again 2006 & 2007- Press Plant & Maintenance Manager - 2006 Tool & Die Shop manager -	Mid 2005 Press Plant Production Manager moved to Machining - Mid 2006 Machining Manager resigned - October 2006 Tool & Die Shop Mgr took up position as Machining Plant Manager - Jun 2006 Plant Services Manager <u>standin</u> for Line 3 Production Manager		
Production System Changes & Year.	2005-7 Short cycle feedback systems - short time shifts - progress to target & corrective action discussions - retrenchments? Process Flow change investigated for later implementation as moving machinery is costly	2005 - 30 Setters promoted to Team Leaders and management on production lines re-structured. Model for direct management. Short Cycle Feed back systems. Continuous Flow Manufacturing. Flow Management - Value stream mapping / machine charts / visual performance measurement. Structured process improvement. Structured problem solving techniques. Multi-discipline weekly problem solving sessions - progress to target & corrective action discussions Focused improvement plan?		

**Table 3 – LP Implementation**

	<b>PRESS PLANT</b>	<b>LINE 1</b>	<b>LINE 2</b>	<b>LINE 3</b>
Group Experiments & Yr	Problem Solving is mostly done during our weekly Product and Process Improvement sessions which is multi-disciplinary and at a higher level than production cells - the members are prepared for this role through Problem Solving training	2005 Team leaders manage 4 to 5 small teams in zone. (Originally line had 2 groups - input and output on a shift with 2 team leaders & 1 Facilitator.)	2005 Team leaders manage 4 to 5 small teams in zone. (Originally line had 2 groups - input and output on a shift with 2 team leaders & 1 Facilitator.)	There too few workers on the line now. The line is treated as one team due to the start-up phase. Each operator responsible for respective machines. Consultation takes place in the morning meetings
eg. Multi-skilling - green areas	N/A	 N/A	N/A	levels 2 & 3 are multi-skilled in order to be able to recognise faults of other machining processes
Implementation toward Lean Prod / WCM [Competitive Capabilities International (CCI)]	Since 2005 implementing pre-lean concepts, working toward LP based on Toyota Lean practices and industry Best Practice. Training supported by CCI methods	Since 2005 implementing pre-lean concepts, working toward LP based on Toyota Lean practices and industry Best Practice. Training supported by CCI methods	Since 2005 implementing pre-lean concepts, working toward LP based on Toyota Lean practices and industry Best Practice. Training supported by CCI methods	2007 Latest in-house methods used as line is still new and currently used intermittently to assist other lines.
Extent to which LP practise implemented	basic level, short-cycle feedback - 20%, machine balance charts - 20%, value stream mapping - 10%	basic level short-cycle feedback - 80% machine balance charts - 75% value stream mapping - 10% Standard work (5%) - training only Standard WIP (5%) - measurement only small team formation (50%) - need team development and training Line-focused Maintenance (50%)	basic level short-cycle feedback - 80% machine balance charts - 75% value stream mapping - 10% Standard work (5%) - training only Standard WIP (5%) - measurement only small team formation (50%) - need team development and training Line-focused Maintenance (50%)	Line is new therefore no recent or new changes occur.

**Table 3 – LP Implementation, Continued.**

	<b>PRESS PLANT</b>	<b>LINE 1</b>	<b>LINE 2</b>	<b>LINE 3</b>
Particular problems wt LP/WCM implementation & in/external	Production backlog and survival issues inhibited the formal implementation of Best Practices	Production backlog and survival issues inhibited the formal implementation of Best Practices	Production backlog and survival issues inhibited the formal implementation of Best Practices	Cycle Time improvement - Lack of skills - Production backlog and survival issues inhibited the formal implementation of Best Practices
Other Initiatives	Overall Equipment Efficiency (OEE) - (performance measurement system) worker participation in 3 month research to move machinery with ducting and piping. Mapping Multi problem solving short cycle reviews	Production Improvement Management System (PIMS) - (incorporating OEE) Short Cycle Meetings	Production Improvement Management System (PIMS) - (incorporating OEE) Short Cycle Meetings	Line started up with a back-log (2007), no time for training, only on-the-job training and basic introduction training - use of operational checklist at change of shift

;Table 4 – HR/IR Changes

	<b>PRESS PLANT</b>	<b>LINE 1</b>	<b>LINE 2</b>	<b>LINE 3</b>
HR/IR presence	Only social issues and issues related to discipline	Only social issues and issues related to discipline	Only social issues and issues related to discipline	Only social issues and issues related to discipline
Team Changes	n/a	2005 Small teams formed with Setters assuming Leadership roles	2005 Small teams formed with Setters assuming Leadership roles	n/a
Shift Changes	Mon to Fri work on 3 tier shift system (7am, 3pm, 11pm). Small section changed from 4 shifts (groups) to 3 shifts in 2006, rest of line from 3 shifts to 2, too little work flow.	Launched weekend shift 22 hours (on constraint resources during 2006) Work is only on the weekend, off during the week.	Launched weekend shift 22 hours (on constraint resources during 2006) Work is only on the weekend, off during the week.	Recruited 4 workers from line 1 & 2 plus 10 from the closed line plus external recruitment to follow? Mon to Fri work on 3 tier shift basis
Initiative Training & Yr [Performance Improvement Mapping Systems (PIMS)]	generic PIMS - discussion sessions for new leaders	generic PIMS - discussion sessions for new leaders	generic PIMS - discussion sessions for new leaders	generic PIMS - discussion sessions for new leaders
Name specific training	Structured Problem solving training	PIMS training for Setters & Shift Leaders - 2006 Process Capability/Standard Work Training for operators and Setters in the Grinding area (3 hrs each - 30 people)	Lean/Continuous Flow training for Setters and Team Leaders end 2005 PIMS training for Setters & Shift Leaders - June 2007	

**Table 4 – HR/IR Changes Continued**

	<b>PRESS PLANT</b>	<b>LINE 1</b>	<b>LINE 2</b>	<b>LINE 3</b>
Training methods - Generic type Within the last 5 years basic training included "free to grow" life-skills training and Set-up time reduction workshops were held.	Product and tooling improvement in monthly discussion meeting wt managers. 1 Day Problem Solving course. WCM game - Structured Process Improvement	(2005/6) introduction to the small group concept/system and one-on-one training of the Setters in using the system (not current but will resume shortly). 1 Day Problem Solving course. WCM game - Structured Process Improvement (3 hrs x 4 sessions = 10 team leaders)	(2005/6) introduction to the small group concept/system and one- on-one training of the Setters in using the system (not current but will resume shortly). 1 Day Problem Solving course. WCM game - Structured Process Improvement (3 hrs x 4 sessions = 10 team leaders)	
Hours of training p/p	4 hours	2 - 4 hrs	Continuous Flow - 4 hrs (X 12 workers) PIMS - 2 - 4 hrs	Continuous on the job training
How many people trained	10	22 (+30)	Continuous Flow (CF) = 24 PIMS = 14	All involved in continuous training as the line is still new.

Additional factors:

The plan in the press plant is in process to move machines that perform the same function next to each other and in a group.

This so that it crosses the line at an intersection only taking one place in the flow.

Promotion of 30 setters to team leaders brought forth a mammoth task of restructuring the entire shop-floor and re-training in all ripple effect promotions that became available.

Team Leader positions took on a different form and adjusted the position tasks to make the team leader responsible for all management issues on the shop-floor, including the introduction of the computerised report systems for measurement & reports. Internal training is on-going as each level is trained for the next position; in addition 60 new employees (2007) are being trained to take level 2 positions, in order to meet production requirements. (July 2007) Line 1 is required to increase production by 50% and Line 2 100%.

#### **4.2. HR / IR**

Corporate governance, transformation, leadership compliance, experiential training, policy development, quality and remuneration structures are current strategic issues discussed at board level. Draft policies are then discussed at management level and later second drafts are presented to the union at the Employment Equity Forum. Monthly meetings with the unions inform the union of company strategy developments.

HR/IR is purely driven by management with workers consulted on some issues but there is no worker input in the HR/IR system.

As indicated in Figure 3, HR Strategies have in the last few years been directed at upgrading policies, systems and processes. HR/IR Strategies are in the process of change. However, both the HR department and the Union reported that workers are excluded from policy formation in a sense that new policies are presented to workers, but their input is not addressed. HR feels that workers need training on how to participate, before their participation can be effective. The union is currently in the process of formally disputing one or more new policies, due to their exclusion from the policy formation process.

Standard operating procedures are set out in the ISO Quality manual, and are sign posted next to each work station. The HR/IR department work according to procedure as set out in the company policy document. However, HR/IR documentation is not open to public scrutiny and the union has to make application through the management rank structure to access company information and/or documentation. Though the union is included on committees to improve HR/IR related issues, policies and procedures, any union contribution appears to be overshadowed by management prerogative.

About three years ago (2005), the majority of worker issues were raised at regional union level. Since 2006, the plant union representatives address issues with the IR Officer in their plant and the next level manager (team leader). Each level manager



is consulted if necessary. Only if matters are still unresolved is HR consulted and, if necessary, the local union office is used to mediate. This structure provides the opportunity for issues to be raised and resolved at the lowest levels, involving line management where necessary. In management's view, communication with the union has since improved dramatically.

The HR/IR department is not set up to engage when production improvements are introduced and only gets involved in recruitment, induction training, on-the-job training and disciplinary issues. On-the-job training addresses new employees and re-training of existing employees. Other department managers reported that HR/IR operated in isolation and that they had no idea what strategies and plans were happening around HR/IR.

In 2005, the IR department conducted extensive research within the organisation to find out what the organisation's training requirements were. Xco found sixty level 1, 2 & 3 recruits for English and Numeracy Classes. However the classes were cancelled due to financial constraints. Another assessment was done for Individual Development Plans (IDP), which allowed HR/IR to put together a personal profile for each worker, based on their position and current qualifications to ascertain what qualifications were required to improve their performance and follow their career path. The improvement of qualifications was also cancelled due to the financial constraint. This has left the workers disappointed and frustrated. They have not voiced this directly to management because they are afraid to speak to management; however, word reaches management through the worker representatives (Management interview).

#### **4.3. Union membership**

There are two representative unions in the work place. The minority union historically represented the white collar workers but it eventually extended to all structures in the organisation. Non-union members are only represented on the statutory workplace forum. Both unions have members in the Tool & Die Shop /

Press plant and consult on issues and work together to reach consensus. The majority union also have representatives and members in the Machining Plant.

The unions operate under the main industry agreement, negotiated annually by NUMSA. In-house agreements have expired and they await discussion to renew these. Union representatives meet weekly with each other, and monthly with management. The union members meet for one hour per month, inclusive of all employees, who get one hour paid time-off to attend.

The union is included in negotiation around issues like shutdowns, wage increases and bonus negotiations. Management meets frequently with the union at times of crises to find a common solution, which can take weeks; however, the union feels that this should be continuous and not just in times of crises.

Over the last few years the unions have moved from adversarial political positions to representing workers at management level to improve working conditions, but the current financial constraint limits opportunities. This is the driving force behind the unions' change in attitude toward negotiating with management, as they recognise that adversarial relationships will threaten an already fragile financial position. Changing union strategy to achieve common organisational goals is an asset that the union feels is not seen and appreciated by top management. It is the opinion of the union that when management is in crisis, they use the union to soften the blow to the workers, whereas the unions feel that the advantage of the relationship should flow in both directions.

Managers view unions as loyal to the company and reasonable at negotiations. The unions' opinion of management is that they still have a long way to go to meeting the union halfway. The unions have many issues that plague the current relationship with management. To mention a few, on occasion the unions accepted late pay, bonuses paid half in December and half in February the following year, no increases, going home when electrical shortages cut power supply to the

factory, more overtime hours per week than should be allowed, pension contributions not being paid for six months, and reduced worker insurance, etc.

The unions negotiated short time, in times of financial constraint, so that it gave opportunity for more people to have jobs, and weekend shifts to cover shortfalls in production. (Key workers work Friday, Saturday and Sunday in place of Monday to Friday for a full weeks pay.) Workers were aware that the company was in financial difficulty; however, they were not informed as to the reasons or contingency plans, while colleagues were being retrenched. Currently, the unions have a problem that the main shareholder is also the CEO as they feel that financial decisions may be taken at the cost of worker benefits. Workers feel that they are purposely kept in the dark regarding the company's true financial status.

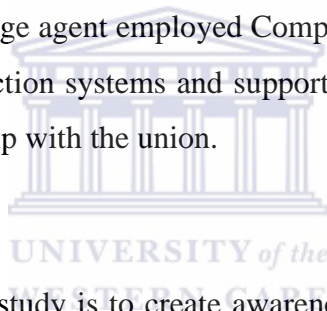
The union representatives believe that the majority of the workers are left unsatisfied with the uncertainty regarding their job security due to the financial constraint, many dismissals, many resignations and some workers even just staying away without resigning. Exclusion from decisions made around their future job prospects adds fuel to the fire as old frustrations around little growth and no promotion of the past few years, prior to 2007, take effect.

#### **4.4. Key changes in Business Context**

In summary, this organisation has been through the simultaneous challenges of new ownership, management restructuring and expansion while under financial constraint. The Change Agent, by the authority of the Board of Directors, drives change and reorganisation toward LP and WCM methods through all systems under trying conditions. Though the implemented changes appear small in comparison to huge machinery and process flow changes, which are yet to be implemented, it has taken a lot of research and development to get progress thus far. The current system changes are also effective in addressing the peoples' mind sets to adapt to LP and WCM thinking methods. These trends encourage other departments like HR/IR to step into its rightful position to drive the process. The

process is currently driving HR/IR when, in actual fact, it should be the other way around.

Key changes at Xco since the year 2000 have had a domino effect on the organisation's current position. For this reason all changes at the organisation played a role in its development. The change of ownership in the year 2000 affected the loss of government funding which led to financial crises which would ensue for the next several years. Though Xco faced challenging times, they consolidated their options to gain advancement in laying the foundation for Lean Production and future prospects through changing the strategic approach to the management and operation of their organisation's business. This included the employ of a change agent and subsequent major top management restructuring. Simultaneously, the change agent employed Competitive Capabilities International (CCI) methods in production systems and supporting systems like HR/IR and the organisation's relationship with the union.



One of the tasks of this study is to create awareness of the relationships between various organisational climates and how these variables are fundamental to, and form the foundation of, change for Xco and HR/IR.

## **CHAPTER 5**

### **5. DATA ANALYSIS**

This chapter presents the results of the data analysis of two surveys of employees conducted in 2006 and 2007. SPSS statistical package was used to analyse the data. Questionnaires with close-ended questions were used to collect the data which was then coded. Descriptive statistics were used to present a general description of the variables investigated in this study. Descriptive statistics describe the phenomena of interest (Sekaran, 2003, cited in Bull, 2005: 69) and are used for classifying and summarising numerical data. It includes the analysis of data frequencies, dispersions of dependent and independent variables and measures of central tendency and variability (Sekaran, 2003, cited in Bull, 2005: 69). The variables presented include, In-company IR Policy, Communications, Climate for Initiative, Climate for Psychological Safety, Job Motivation, Organisational Commitment, Interpersonal Commitment, and Workers' Participation in Decision making.

Two cross sectional surveys were conducted on site at Xco, one in May 2006 and the other in June 2007. The demographic distributions are reported in Tables 5 to 9. They show that the two samples do not differ significantly on Age, Education, Gender, Race and Union membership. However, it is not known to which extent the same workers were sampled in both surveys.

The Table in Appendix III contains bivariate correlations of all variables used in this study, in order to identify the relationships between variables. The conceptual model (see Figure 6) derived from the Locke et al (1988) framework, is then analysed and investigated using the data in tables 12 to 15. The results are then further interpreted relative to the literature and other research consulted.

The method of analysis includes correlation and covariances using SPSS. The means and standard deviations of the total scores of both studies together are used

to discuss the 11 measures in Table 10. The Cronbach alpha will be used to assess whether or not the measure is reliable. Then, the results of the first study and the second study are compared in Table 11. Further, a conceptual model is produced from the results to show the strength of relationships between variables based on the hypotheses discussed in Chapter 2.

Eleven constructs are measured in the surveys, which were conducted about one year apart. Validities and reliabilities of measures used had previously been verified in published international and South African literature. These eleven constructs were grouped as follows:

- a) Organisational Climate includes the variables Climates for Initiative, Climate for Psychological Safety, In-Company IR Policy, and Communication.
- b) Workplace Context variables are Interpersonal Trust, Participation in Decision Making and Supervision.
- c) The variables for Individual Attitudes and Behaviour are Job Satisfaction, Organisational Commitment and Intrinsic Job Motivation.

These constructs are illustrated in Figure 6.

The first objective of this analysis is to establish whether or not the constructs above covary with other constructs grouped within the composite constructs Organisational Climate, Workplace Context and Individual Attitudes and Behaviours respectively. This corresponds to hypotheses 4, 5 and 6. Cronbach alpha will be used as a measure of internal consistency of each of the three constructs. The main hypotheses will then be tested.

Descriptive statistics of the eleven variables are presented together with Cronbach alpha values. The strength of the paths between the elements will be tested by regression analysis and  $r^2$  is used as a measure of the strengths of these relationships.

Correlation tables will be used to highlight relationships between constructs and the elements of the secondary variable. These are purported to be related to, as presented in the model, Figure 6 (and propounded in hypotheses 1 to 3). The size and significance of the standardised regression coefficients will be used to test this relationship. No attempt at any stepwise regression will be made.

A bivariate regression table will be constructed for the secondary measures. Partial regression coefficients between each of two measures, keeping the third measure constant, will be tendered as proxies for path coefficients. Changes on each of the eleven variables between the two surveys are compared by means of the independent sample t-test.

### **5.1 Description of the sample**

The following Tables 5 to 9 show no significant difference in the description of the sample for both surveys.

**Table 5. – Age Distribution**

	Current Age					Total
	18-25	26-35	35-45	46-55	56-65	
1st Survey	5	22	24	6	3	60
2nd Survey	5	20	27	16	2	70
Total	10	42	51	22	5	130

$$\chi^2 = 3.88, df=8, p>0.8$$

There were more respondents in the 46-55 age group in the second survey.

**Table 6. - Highest Education Qualification Levels Cross-tabulation**

EDUCATION		Survey	
		1st Survey	2nd Survey
Highest education Qualification	Non		
	Primary	1	1
	Std 6-8	16	26
	Std 9-10	36	38
	Degree/diploma incomplete	2	7
	Degree/diploma complete	5	1
Total		60	73

$$\chi^2 = 8.69, df=5, p=0.122$$

Although there are more respondents in the Std 6-8 category in the 2<sup>nd</sup> survey, the difference in levels of education between the two surveys is not statistically significant.

**Table 7. - Gender Distribution**

		Gender		Total
		Female	Male	
	1st Survey	13	47	60
	2nd Survey	15	56	71

$$\chi^2 = 0.006, p=0.$$

$P > 0.9$ . There is no significant gender difference between the two surveys.

**Table 8. - Racial Distribution**

RACIAL DISTRIBUTION		Surveys	
		1st Survey	2nd Survey
What race do you identify yourself as?	Black	8	7
	African	8	2
	Coloured	37	58
	Indian	1	1
	White	2	5
Total		56	73

$$\chi^2 = 7.84, p=0.112$$

The Racial Distributions do not differ significantly between the surveys.

**Table 9. – Union membership by interview session**

UNION MEMBERSHIP		Interview		Total
		1st Interview	2nd Interview	
Are you a member of the UNION?	Union member	50	66	116
	Not Union member	9	6	15
Total		59	72	131

$$\chi^2 = 0.216, p=0.168$$

There is no significant difference in Union membership between the two periods



## 5.2. Descriptive Statistics

The descriptive statistics for the two surveys are presented in Table 10. Measures were re-scaled according to the number of questions to provide an easier basis for comparison. The means and standard deviations of both studies together are used to discuss the eleven measures in Table 10. The Cronbach alpha results show that the measures are moderately reliable.

**Table 10** – Descriptive statistics of study variables

DESCRIPTIVE STATISTICS	N	Min	Max	Mean	SD	Cronbach alpha
<b>Organisational Climate</b>	66	1.28	4.36	2.50	0.58	0.79
Climate for Initiative	121	1.00	5.00	2.94	1.02	0.92
Climate for Psychological safety	87	1.14	4.29	2.71	0.63	0.61
Acceptable In-Company IR Policy	103	1.00	5.00	2.23	0.86	0.87
Extent of Communications	123	0.83	4.17	1.86	0.60	0.79
Worker representation	116	1.00	4.29	2.62	0.75	0.88
<b>Workplace Context</b>	83	1.39	5.00	2.74	0.67	0.68
Participation in Decisions	109	1.00	5.00	2.33	0.78	0.86
Approachable Supervisors	117	1.20	5.00	2.94	1.02	0.85
Interpersonal Trust	106	1.00	5.00	2.93	0.76	0.79
<b>Individual Attitudes &amp; Behaviour</b>	42	1.85	4.34	3.25	0.65	0.76
Organisational Commitment	113	1.43	4.86	3.38	0.73	0.59
Intrinsic Job Motivation	83	1.57	5.00	4.01	0.65	0.65
Job Satisfaction	62	0.83	4.32	2.63	0.96	0.91

Most of the means are around the mid-value of 2.5 except Intrinsic Job Motivation at 4.01 and Organisational Commitment at 3.38, which suggest a rather high value for this sample. However, the Cronbach alpha of Organisational Commitment is below 0.6 and considered not very reliable. The mean for Communication at 1.86, In-Company IR Policy at 2.23 and Participation in Decision Making at 2.33 are low values, which suggest that these variables are less prominent in the organisation than the other variables.

All Cronbach alpha values are acceptable except Organisational Commitment at 0.59, 0.01 below the acceptable 0.6, and therefore still considered useful. This could possibly be due to the phrasing of some of the questions, which could have been misunderstood and subsequently left out by respondents. For example, the **not** in the statement “If offered more money with another employer I would *not* seriously think of changing my job” could easily be misread by missing the word not in the statement. A bivariate correlation of the elements of Organisational Commitment in a spreadsheet gives the only significant negative correlation between questions 23.4, “To what extent do you agree that even if the firm were not doing well financially, I would be reluctant to change jobs?”, and 23.7, “To what extent do you agree that if offered more money with another employer I would not seriously think of changing my job.”, which suggests that the question may have been wrongly read or misunderstood by the respondents. The research instrument is therefore not completely portable for all environments.

Factor analysis was used to eliminate two poorly answered questions in the sub-set of Organisational Commitment. (Questions 23.3 and 23.4 had eleven missing answers and when these are excluded then Cronbach alpha rises to 0.591). This particular measure needs to be reassessed for future research using this variable. The psychometric properties of Organizational Commitment thus need further investigation in future studies.

The mean for Organisational Climate is at the mid-point of the scale, suggesting that employees do not regard these climates in a strongly positive light. However, the results suggest that employees are somewhat more positive about the Climate for Initiative, Climate for Psychological Safety and Worker Representation than they are with Company IR Policy and Communications.

Workplace Context overall mean is 2.74, with Interpersonal Trust and Supervision showing a more positive result than Participation in Decision Making.

Individual Attitudes and Behaviours show stronger overall means at 3.25 with Organisational Commitment and Intrinsic Job Motivation showing more positive results than Job Satisfaction. Below, we test these results using correlation and regression models to show whether relationships exist between variables and the respective strength of those relationships respectively.

A comparison between the overall results of the first and the second surveys is presented in Table 11. The difference between the 2006 survey and the 2007 survey can be measured using the t-test.

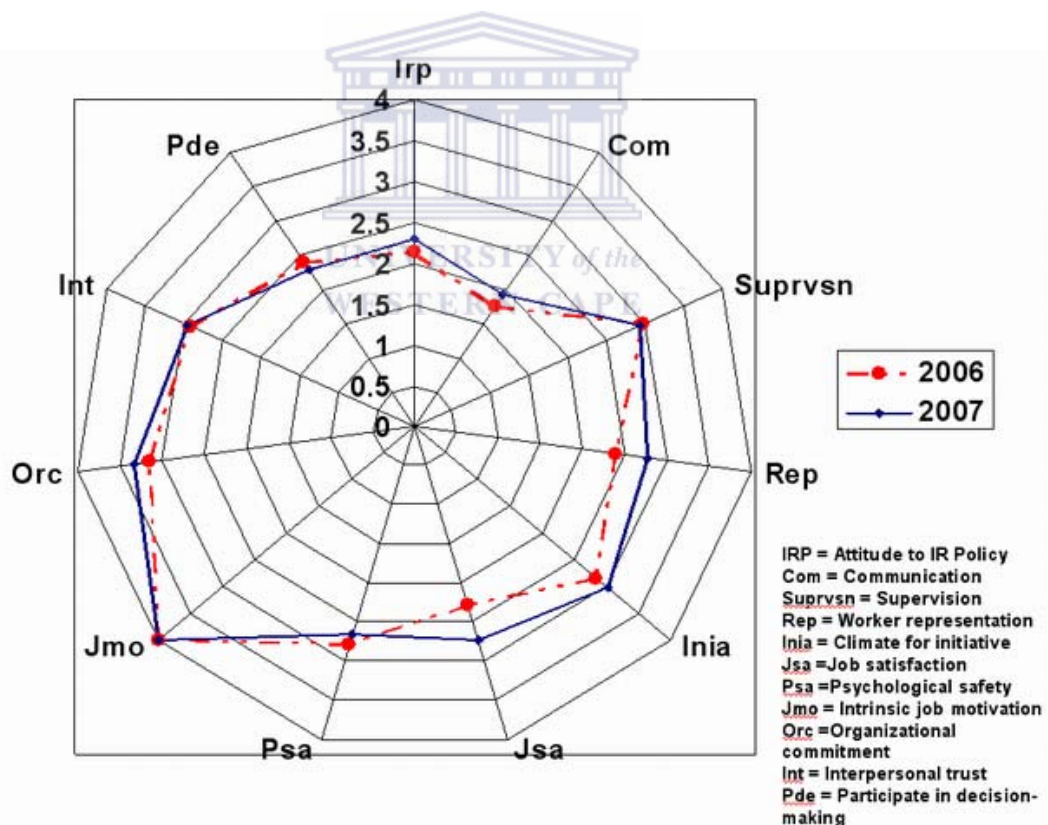
**Table 11 – 2006 and 2007 surveys compared**

	Surveys	N	Mean	SD	P-value
<b>Organisational Climate</b>					
Climate for Initiative	1st Survey	50	2.84	1.06	
	2nd Survey	71	3.02	1.00	0.176
Climate for Psychological Safety	1st Survey	38	2.78	0.68	
	2nd Survey	49	2.66	0.60	0.058
In-Company IR Policy	1st Survey	45	2.14	0.86	
	2nd Survey	58	2.30	0.86	0.184
Level of Communication	1st Survey	51	1.76	0.59	
	2nd Survey	72	1.93	0.61	0.064
Worker Representation	1st Survey	48	2.40	0.72	
	2nd Survey	68	2.78	0.73	0.006
<b>Workplace Context</b>					
Participation in Decision Making	1st Survey	49	2.40	0.87	
	2nd Survey	60	2.27	0.69	0.196
Supervision	1st Survey	47	2.98	1.00	
	2nd Survey	70	2.92	1.04	0.380
Interpersonal Trust	1st Survey	43	2.91	0.84	
	2nd Survey	63	2.94	0.72	0.475
<b>Individual Attitudes &amp; Behaviour</b>					
Organisational Commitment	1st Survey	48	3.16	0.63	
	2nd Survey	63	3.31	0.65	0.110
Intrinsic Job Motivation	1st Survey	19	4.01	0.77	
	2nd Survey	64	4.01	0.62	0.496
Job Satisfaction	1st Survey	14	2.27	1.12	
	2nd Survey	48	2.73	0.90	0.058

These results apply to research question 2, “What are workers’ present attitudes to HR/IR practices?”. Table 11 suggests that the level of Worker Representation improved most significantly over the period. The positive changes in Level of Communication and Job Satisfaction are all marginally significant. Although the measures are not strong indicators, these positive changes should be noted.

The number of respondents is particularly low for Intrinsic Job Motivation and Job Satisfaction for the 2006 survey, due to case wise deletions; however, the mean is derived from the strength of the responses and not the number of responses. Consequently, the improvement in Job Satisfaction should be treated with caution.

**FIGURE 5 - Web Diagram presenting Table 11 variables.**



The web diagram is a visual representation of the means in Table 11. It shows that there has been progress from 2006 to 2007 in all variables except Psychological Safety and Participation for Decision making.

### **5.3 The Conceptual Model of Hypotheses**

To provide an overview, the analysis of Climate for Initiative, Psychological Safety, In Company IR Policy, Communication and Worker Representation are combined under the construct termed Organisational Climate; Interpersonal Trust, Participation in Decision making and Supervision are brought together under the construct called Work Place Context; and Job Satisfaction, Organisational Commitment and Intrinsic Job Motivation under the term Individual Attitudes and Behaviour. The model is repeated below, in Figure 3. In the analysis below we consider Hypotheses 1, 2 and 3 sequentially and conclude with an assessment of the relationships between composite constructs for Organisational Climate, Workplace Context and Individual Attitudes and Behaviours.

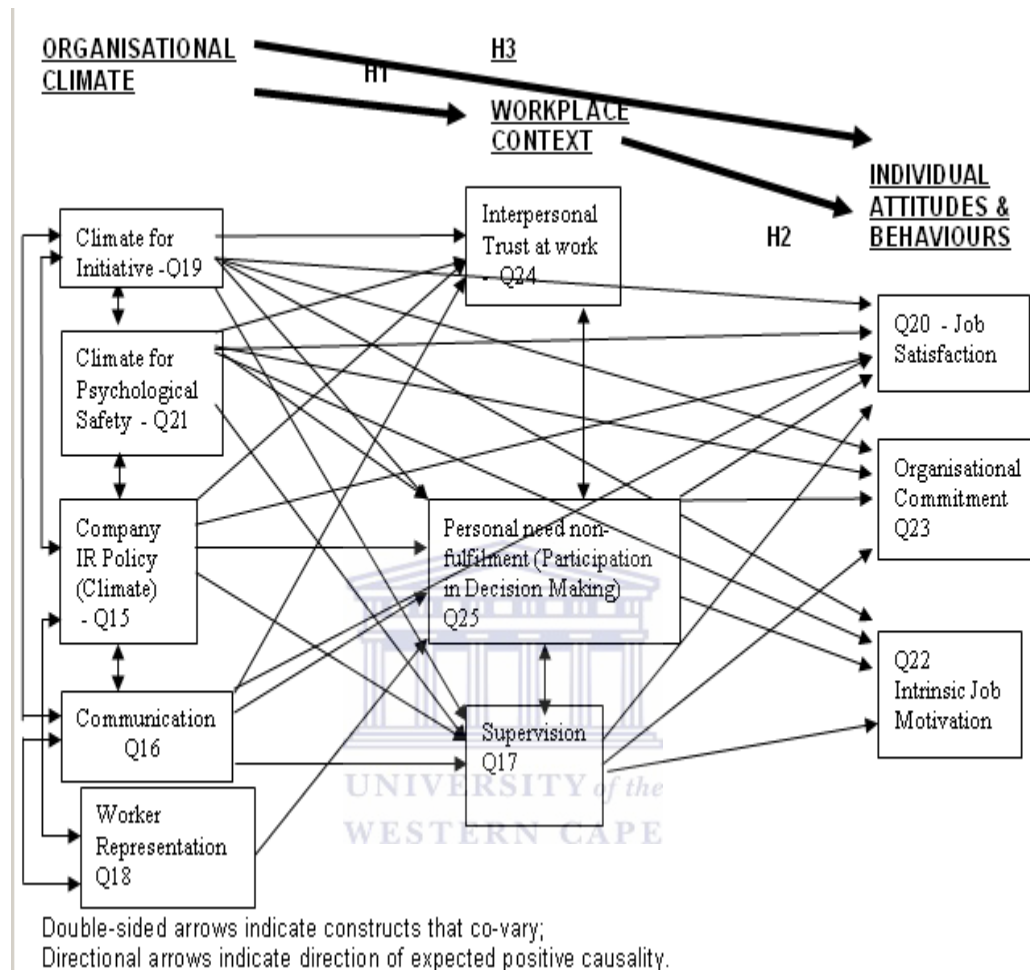
It is hypothesised that Hypothesis 1 precedes Hypothesis 2. In practice, however, the relationship is likely to run in both directions over time. For the purpose of this study, the focus is on the predominant relationship patterns; however, it recognises that other constructs may exist.

Variables are grouped in accordance to their immediate effect. The sub constructs of the questions used in the survey are taken into account when grouping the variables. Variables grouped into organisational climate are those constructs which characterise the organisation. Other variables describe the workplace context, and individual attitudes and behaviours are those of individual workers.

The analysis strategy first shows that the secondary constructs are homogeneous by examining the bivariate correlations of its component variables, and then to analyse the relations between the variables, as proposed in the model, Figure 3.

**Figure 6 Conceptual framework detailed discussion**

– indicating the hypotheses and expected relationships between variables



#### **5.4 Organisational Climate and Workplace Context**

**Hypothesis 1** – *Organisational Climate variables have a positive impact on the Workplace Context conducive to higher levels of Interpersonal Trust, Worker Participation and Supervision.*

**Hypothesis 2** – *Positive Workplace Context in turn leads to more positive Individual Attitudes & Behaviour as measured by Job Satisfaction, Organisational Commitment and Intrinsic Job Motivation.*

**Hypothesis 3** – *Organisational Climate variables will each have a positive impact on the Individual Attitude & Behaviour variables.*

**Hypothesis 4** – *All independent variables (under the Organisational Climate heading) - Climate for Initiative, Climate for Psychological Safety, In-Company IR policy, Communication and Worker Representation – co-vary with one another.*

**Hypothesis 5** – *The Workplace Context variables (Interpersonal Trust, Participation in Decision Making and Supervision) – co-vary with one another.*

**Hypothesis 6** – *The Individual Attitude & Behaviour variables - Intrinsic Job Motivation, Job Satisfaction and Organisational Commitment – co-vary with one another.*

Literature predicts that Psychological Safety co varies with Climate for Initiative. The correlation between the two are low (Appendix iii); however, it may be due to all the issues raised, but mostly that the organisation is still in the early stage of LP added to which the Climate for Initiative may be positively influenced with time as the Organisational Climate settles from the major shifts from within.

Applicable to hypotheses 4 and 5: Independent Organisational Climate variables indicate covariant relationships between Climate for Initiative, Climate for Psychological Safety and Worker Representation of 0.3 to 0.4 and Communication and In-Company IR at 0.7. Hypothesis 4 is therefore supported by the data. Workplace context variables indicated covariant relationships of 0.4 to 0.5. Therefore, hypothesis 5 is also supported by the data.

For each composite construct, Organisational Climate and Workplace Context there are positive co-variances between constructs. Covariant results of the thesis constructs support the use of the constructs as proposed in models 2 and 3.



### 5.5 Analysis of Composite Constructs

To provide an overview of the analysis that follows, Table 12 reports the correlation between the composite measures of Organisational Climate, Workplace Context, and Individual Attitude and Behaviour. Table 12 shows that composites are compatible for measurement.

**Table 12 – Bivariate correlation table of the composite constructs**

COMPOSITE CONSTRUCTS		Organisation al Climates	Work Place Context	Individual Attitudes & Behaviours
Organisational Climates	Pearson Correlation	1		
	Sig. (2-tailed)	.		
	N	66		
Work Place Context	Pearson Correlation	.837(**)	1	
	Sig. (2-tailed)	.000	.	
	N	54	83	
Individual Attitudes & Behaviours	Pearson Correlation	.650(**)	.715(**)	1
	Sig. (2-tailed)	.000	.000	.
	N	29	34	42

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

All the correlations are significant and support the broad hypotheses. The limited number of complete cases is a concern, however. This result suggests that this study needs be repeated with larger samples and include more companies.

**Table 13 - Regression coefficients Organisational Climate Construct as the Independent variable and Workplace Context as Dependent variable**

Model	$r^2 = 0.701$	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.064	.250		.257	.798
	Organisational Climates	1.083	.098	.837	11.032	.000

Dependent Variable: Work Place Context.



**Hypothesis 1** – *Organisational Climate variables have a positive impact on the Workplace Context conducive to higher levels of Interpersonal Trust, Worker Participation and Supervision.*

The regression analysis in Table 13 supports Hypothesis 1 as Organisational Climate is a strong predictor of Workplace Context ( $r^2 = 0.701$ ,  $p < 0.001$ ). Existing literature, as referenced in Chapter 2, suggest that Organisational Climates support Workplace Contexts through conducive variables that will sustain workplace contexts. Climate for Initiative, Climate for Psychological Safety and Communication help to create an atmosphere in which In-Company IR Policies and Worker Representation can be positively influenced to find common solutions for both workers and management. Simultaneously, these positive Organisational Climate variables provide the platform for Interpersonal Trust, Participative Decision Making and Supervision to be positively nurtured.

Hypothesis 1 is thus proven. Tables 14 and 15 show correlations between constructs in Hypothesis 1 in individual variable correlations.

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**Table 14 – Regression with Organisational Climate Variables as the Independent variables and Workplace Context Composite Construct as the Dependent Variable**

Model	$r^2 = 0.721$	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	<b>ORGANISATIONAL CLIMATE INDEPENDENT VARIABLE</b>	B	Std. Error	Beta		
1	(Constant)	-.106	.255		-.416	.679
	Climate for Initiative	.106	.066	.143	1.604	.115
	Climate for Psychological Safety	.450	.097	.418	4.647	.000
	In-Company IR Policy	.088	.098	.104	.896	.375
	Communication	.366	.134	.320	2.727	.009
	Worker Representation	.174	.116	.154	1.496	.141

Dependent Variable: Work Place Context

Workplace context can, in part, be predicted from Climate for Psychological Safety and Communication. The Climate for Initiative, In-Company IR Policy and Worker Representation are not statistically significant predictors.

Multiple regression using the five constructs of Organisational Climate as the independent variables and Workplace Context (i.e. Interpersonal trust, Worker Participation and Supervision) as the dependent variable is shown in Table 14. The regression coefficients ( $r^2 = 0.721$ ) suggest that the five variables in the construct “Organisational Climate” account for 72% of the variance in the dependent variable Workplace Context. However, from this analysis it appears that In-Company IR policy, the Climate for Initiative and Worker Representation are not significant predictors of the Workplace Context composite construct. This is explored further in Table 15.

**Table 15 - Bivariate Correlations between Organizational Climate and Workplace Context Variables**

		Workplace Context Variables		
		Interpersonal Trust	Participation in Decision Making	Supervision
Organisational Climate Variables	Climate for Initiative	0.553 P<0.0005	0.431 P<0.0005	0.431 P<0.0005
	Climate for Psychological Safety	0.396 P<0.0005	0.616 P<0.0005	0.631 P<0.0005
	In-Company IR Policy	0.548 P<0.0005	0.504 P<0.0005	0.483 P<0.0005
	Communication	0.580 P<0.0005	0.527 P<0.0005	0.491 P<0.0005
	Worker Representation	0.474 P<0.0005	0.434 P<0.0005	0.419 P<0.0005

All the variables are significantly correlated with  $p < 0.0005$ , i.e., all of the correlations differ significantly from zero at  $p < 0.0005$ .

For simplicity, a correlation of 0 to 0.3 is considered a low positive correlation while 0.4 to 0.5 is moderate and 0.6 plus is a strong positive correlation. From the

Table above, one can see that most correlations are moderate, with the exception of Climate for Psychological Safety and Interpersonal Trust with a low correlation of 0.3 and Psychological Safety with Participation in Decision Making and Supervision at 0.6. Therefore, it can be said that Climate for Psychological Safety is a strong predictor of both Participation in Decision Making and Supervision as dependent variables.

One positive outcome of this test is that all correlations show some level of relationships. (Factor analysis has not been considered because of limited sample size and missing data.)

## **5.6. Workplace Context and Individual Attitudes and Behaviour**

**Hypothesis 2** – *Positive Workplace Context in turn leads to more positive Individual Attitudes & Behaviour as measured by Job Satisfaction, Organisational Commitment and Intrinsic Job Motivation.*

**Hypothesis 5** – *The Workplace Context variables (Interpersonal Trust, Participation in Decision Making and Supervision) – co-vary with one another.*

Workplace context comprises of the variables Interpersonal Trust, Participation in Decision Making and Supervision which also co-vary between 0.4 and 0.5, a moderate positive correlation.

**Hypothesis 6** – *The Individual Attitude & Behaviour variables - Intrinsic Job Motivation, Job Satisfaction and Organisational Commitment – co-vary with one another.*

The independent variables of Individual Attitudes and Behaviours co-vary between 0.4 and 0.5, a moderate positive correlation.

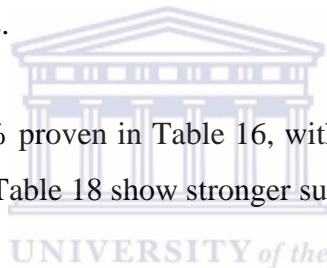
**Table 16 - Regression Coefficients with Work Place Context Composite Construct as the Independent variable and Individual Attitudes and Behaviours Composite Construct as the Dependent Variable**

Model	Independent Variable	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.323	.340		3.892	.000
	Workplace Context	.729	.126	.715	5.782	.000

Dependent Variable: Individual Attitudes and Behaviours

It is suggested by  $r^2 = .496$  that the results reported in Table 16, where Workplace Context is the Independent variable, account for 50% of the variation in Individual Attitudes and Behaviours.

Hypothesis 2 is thus 50% proven in Table 16, with moderate support in Table 17. However, covariance in Table 18 show stronger support.



**Table 17 - Regression coefficients with Workplace Context variables as the Independent variables and Individual Attitudes & Behaviours Composite Construct as the Dependent Variable**

Model	WORKPLACE CONTEXT $r^2 = 0.479$	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.397	.355		3.931	.000
	Participation in Decision Making	.374	.141	.420	2.653	.013
	Supervision	.204	.111	.274	1.839	.076
	Interpersonal Trust	.160	.133	.185	1.204	.238

Dependent Variable: Individual Attitudes and Behaviours

Table 17 indicates that 48% of the variance in Individual Attitudes and Behaviour can be explained by the Workplace Context variables Participation in Decision Making, Supervision and Interpersonal Trust. Therefore, hypothesis 2 can be considered as only moderately supported. Participation in decision-making

provided the only statistically significant regression coefficient at the 95% confidence level, although Supervision is moderately significant at the 90% confidence level. However, Interpersonal Trust shows an insignificant regression coefficient. It is possible that the construct Individual Attitudes and Behaviour and/or Work Place context needs to be reconsidered.

Workplace Context leads to more positive Attitudes and Behaviours in Job Satisfaction, as seen in Table 18. Although the results for Organisational Commitment should be treated with caution, as mentioned earlier, the construct is moderately correlated with all Workplace Context variables (see Table 18 below).

**Table 18 - Bivariate Correlations between Workplace Context and Individual Attitude and Behaviour Variables**

		Individual Attitude and Behaviour Variables		
		Job Satisfaction	Organisational Commitment	Intrinsic Motivation
Workplace Context Variables	Interpersonal Trust	0.403 P=0.002	0.335 P=0.001	0.270 P=0.029
	Participation in Decision Making	0.618 P<0.0005	0.393 0.0005	0.256 0.035
	Supervision	0.560 P<0.0005	0.388 P<0.0005	0.213 P=0.062

Correlations between Workplace Context variables and Individual Attitude and Behaviour variables in Table 18 are varied. Results in Table 18 indicate that Intrinsic Job Motivation has a very low correlation below 0.3 with all the Workplace Context variables, Interpersonal Trust, Participation in Decision Making and Supervision. Job Satisfaction is strongly predicted by Participative Decision-making & Supervision while other predictors are much weaker. Participative Decision Making and Job Satisfaction show a strong relationship with an “r” value of 0.618. This result indicates that Worker Participation in Decision Making is strongly associated with higher levels of Job Satisfaction.

Interpersonal trust has a weak but positive influence on Intrinsic Job Motivation and a moderately positive influence on Job Satisfaction. Supervision has a moderate correlation (0.560) with Job Satisfaction, which indicates that when they have an approachable and fair supervisor who is able to assist them, job satisfaction is enhanced. The lower correlation between Supervision and Intrinsic Job Motivation (0.213) is not surprising as the impact of supervision is only likely to be indirect.

All the variables correlate positively with one another; however, the lowest is between Intrinsic Job Motivation and Supervision at 0.213. This correlation is only significant at the 90% level ( $p=0.06$ ) but, as the correlation coefficient is 0.62, the relationship can be regarded as relatively strong. Hypothesis 2 of covariance can therefore be considered supported.

### **5.7 Organisational Climate and Individual Attitudes and Behaviour**

**Hypothesis 3:** *Individually the Organisational Climate variables - Climate for Psychological Safety, Climate for Initiative, and In-Company IR Policy, Communication and Worker Representation - will each have a positive impact on the Individual Attitude & Behaviour variables - Intrinsic Job Motivation, Job Satisfaction and Organisational Commitment.*

**Table 19 -** Regression with Organisational Climate Composite Construct as Independent and Individual Attitudes & Behaviours Composite Construct as Dependent variable.

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.896	.532		1.685	.104
	Organisational Climates	.933	.210	.650	4.449	.000

Dependent Variable: Individual Attitudes and Behaviours

When the Organisational Climate variables are aggregated (see Table 19), Organisational Climates account for about 40% of the variation in Individual Attitudes and Behaviours. Therefore, hypothesis 3 is largely supported.

**Table 20 – Regression Coefficients with Organisational Climate variables as Independent and Individual Attitude & Behaviour Composite Construct as the Dependent Variable.**

Model	$r^2 = 0.422$	Unstandardised Coefficients		Standardised Coefficients	t-test	Sig.
		B	Std. Error	Beta		
	ORGANISATIONAL CLIMATES INDEPENDENT VARIABLE					
1	(Constant)	.729	.540		1.349	.191
	Climate for Initiative	.262	.142	.350	1.851	.077
	Climate for Psychological Safety	.474	.236	.412	2.007	.057
	In-Company IR Policy	.203	.215	.186	.944	.355
	Communication	.506	.285	.365	1.776	.089
	Worker Representation	-.393	.275	-.335	-1.428	.167

Dependent Variable: Individual Attitudes and Behaviours

Overall, results in Table 20 indicate that the Organisational Climate variables have a moderate ( $r^2 = 0.422$ ) direct effect on Individual Attitude & Behaviour. However, none of the Organisational Climate variables is significant at the 95% confidence level. The results suggest that Climate for Psychological Safety and Communication have a moderate direct influence on Individual Attitudes and Behaviours ( $p < .10$ ).

**Table 21 - Bivariate Correlations between Organizational Climate Variables and Individual Attitude and Behaviour Variables**

		Individual Attitude and Behaviour Variables		
		Job Satisfaction	Organizational Commitment	Intrinsic Motivation
Organizational Climate Variables	Climate for Initiative	0.343 P=0.007	0.341 P=0.001	0.282 P=0.012
	Climate for Psych Safety	0.575 P<0.0005	0.412 P<0.0005	0.263 P=0.050
	In-Company IR Policy	0.405 P=0.003	0.288 P=0.006	0.245 P=0.053
	Communication	0.486 P<0.0005	0.345 P=0.000	0.182 P=0.110
	Worker Representation	0.475 P<0.0005	0.313 P<0.002	0.203 P=0.087

Results in Table 21 indicate that Climate for Psychological Safety and Job Satisfaction holds the highest correlation of 0.575, which is significant at a very low p-value. Each of the Organisational Climate Variables has a low correlation with Intrinsic Job Motivation, which suggests that Organisational Climate constructs do not have a strong direct positive influence on Intrinsic Job Motivation.

Climate for Initiative has a moderate correlation relation with each of the dependent variables of Job Satisfaction but weak with Intrinsic Job Motivation. As discussed earlier in the literature review, this suggests that the Organisational Climate does not directly influence Individual Attitudes and Behaviours.

In-Company IR Policy, Communication and Worker Representation have a moderate positive influence on Job Satisfaction. Therefore, improving In-Company IR Policy, Communication and Worker Representation are useful and valuable tools for the organisation to build on during the implementation of LP systems. Communication and Intrinsic Job Motivation has the weakest (non significant) correlation.



The relatively higher bivariate correlations between Workplace Context and Individual Attitude and Behaviour Variables (see Table 18) suggest that Workplace Context has relatively more direct influence on individual Attitude and Behaviour than the Organisational Context variables. This is not surprising. Hypothesis 3 is thus moderately supported.

### **5.8 Conclusion**

Overall, there is a relatively high level of Intrinsic job motivation (mean=4.0), most other constructs are only evident to some extent (means between 2 and 3), with Communications the poorest (1.86), suggesting that respondents regard it as only evident to a little extent.

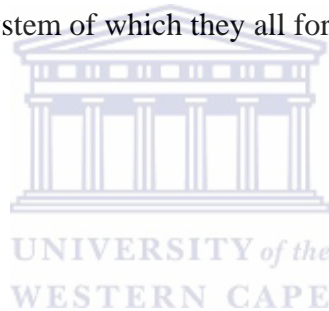
With reference to Table 11 and Figure 5, present worker attitudes to HR/IR related variables may have low to moderate results; however, there is improvement over the period studied.

Each variable in this study relates to Organisational Climate and HR/IR Climate is a construct within Organisational Climate. Variables were chosen relative to the literature reviewed and the questions used in the survey. From those variable correlations discussed, relationships vary from one variable to another. It is in the discussion of each table where the independent relationships give an overview of the current HR/IR climate. The current Organisational Climate is moderately supportive of LP implementation, but the areas for improvement are apparent in the results. Recent changes between 2006 and 2007 appear to have had a positive impact on worker attitudes as the improvement, though small, is evidenced in Table 11.

The hypotheses modelled in Figure 3 proved useful to guide the study and group the results in order to draw out the conclusions. From the analysis, it can be concluded that all variables have shown positive correlations. Though in some cases the correlation was low, the relationships between variables were shown to exist and need further development in order for the system and the organisation to

benefit from those variables. The results have shown how constructs proposed in the model are inter-dependent. The relatively low ratings in answers to many questions for most variables may explain why the resultant relationships between constructs are only moderate.

It can be concluded that Xco, with consideration to their experience of the “change” challenge, have the foundation on which to monitor the impact of organisational change in the future. To build a healthy Organisational Climate, much work is needed from internal departments like HR/IR to assist in fundamental developments of weaker climates. An aim of this paper is that managers and workers must learn the value of Organisational Climates and, even more importantly that they understand, on a holistic level, how it works and to appreciate the delicate system of which they all form a part.



## **CHAPTER 6**

### **6. DISCUSSION and CONCLUSION**

Over the period studied, the organisation experienced many strategic changes as discussed in detail in Chapter 4. These changes include Structural reorganising, Management restructuring, Operational restructuring, Union Representation changes, and HR/IR structure, policy and procedure changes. These factors, in addition to the constant pressure of financial constraint, form the background and context within which this study took place. Bearing this in mind, this chapter leads to a conclusion based on findings and results relative to the literature reviewed.

This chapter will discuss the Analytical Framework Model in Figure 2 in relation to the hypotheses and results. A discussion comparing results in the Web Diagram of Figure 5 (Results of Table 11 plotted in the Web Diagram) and Figure 6 (Conceptual Framework) to authors referenced in the literature review will follow. There is a short discussion on HR/IR and research questions followed by a concise summary of the conclusion. The chapter ends with a short discussion of study limitations and further research suggestions. Recommendations are not necessary in this case as discussion and conclusions draw out the areas for further attention and development.

#### **6.1 The Analytical Framework Model Figure 2**

The practical usage of the Analytical Framework Model guided the steps that lead to positive Individual Attitudes and Behaviour. That means that the model depicts the concept “Work Place Context” with “Organisational Climate” as a prior. The inter-correlation table of these variables (Chapter 5.5) suggests the effects to be more diffuse. Larger and more detailed follow up studies may be necessary.

#### **6.2 Hypotheses 1 and 2**

It is hypothesised that Organisational Climates set Workplace Contexts which, in turn, drive Individual Attitudes and Behaviours. This hypothesis suggests that Individual Attitudes and Behaviours are influenced by Organisational Climates.

The results show that Organisational Climates account for 72% of the variance in Workplace Context, which in turn accounts for 46% of the variance in Individual Attitudes and Behaviours.

Therefore, the first and second hypotheses are supported by the results. It is recognised that the study is done on a scale too small to generalise; however, it does indicate further that the investigation on a larger scale will be fruitful with possibilities of similar findings. This study uncovered the idea that effectively organisations are to some extent accountable for the individual Attitudes and Behaviours of employees. In the same way, it also indicates that there is something that organisations together with management can do to change organisational climates and subsequent Work Place Context to affect individual Attitudes and Behaviours for the benefit of the bigger picture. This bigger picture would be to progress the pre-requisites that organisational climate and cultures require for the long term successful implementation of LP.

The above discussion leads to the paper's main argument that HR/IR should be central to the development of Organisational Climates. If Climates, as shown in this study, have such strong influence over the Work Place Context, which in turn accounts for 46% of the variance of individual Attitudes and Behaviours, under the rather adverse conditions that prevailed in the organisation under study, it is possible to imagine the endless potential that this chain reaction can yield. It is here that organisations fail to take advantage of uncaptured energy that fuels the growth and progress of LP implementation.

#### Relating to Authors in the Literature Review

This study is guided by the Analytical Framework in Figure 2. The variables are grouped under Organisational Climate, Work Place Context and Individual Attitudes and Behaviours. The authors discussed reviewed variables as seen in the hypotheses. This section gives logical explanation to the links between the variables and LP principles. Variable correlations identified by authors Baer &

Frese (2003) and Hay (2002) fall in the category of Hypothesis 1. Cook & Wall's (1980) variable correlations are covered in Hypotheses 2 and 3.

As seen in the literature review, these variables are paired and grouped in different ways by other authors depending on their study focus.

Baer & Frese's (2003: 57, 61) study on Climate for Initiative and Climate for Psychological Safety found that Climate for Initiative was significantly related to firm goal achievement and return on assets, and that Psychological Safety, significantly predicted firm goal achievement and return on assets. Their results suggest that companies which encourage their employees to engage in self starting behaviours and provide a personally non-threatening work environment, are more successful in firm goal achievement and return on assets. Their research results further suggested that Climates for Initiative and Psychological Safety should be incorporated into conceptualisations of the change management processes. In this study Climate for Psychological Safety had a strong positive correlation (of 0.6) with Participation in Decision Making and Supervision. This study's results support the Baer and Frese (2003) suggestion. In addition, it suggests that Psychological Safety creates a safe space for Participation in Decision Making and better relations with Supervision.

Hay (2002) found significant changes in trust over time. Variables, Team, Inter-Team and Management, showed significant inter-correlation, suggesting that trust promotes more open communication between team members, but that trust also decreased over a period of 11 months. However, the study suggested that trust is more visible by its absence and subsequent mistrust resulted in a number of consequences for new work practices. For this reason, it is important to include measures of trust in preliminary preparation for implementation of LP. In this study Interpersonal Trust showed moderate correlations of 0.5 with Climate for Initiative, In-Company IR Policy and Communications. Correlations are moderate ( $r=0.4$ ) between Interpersonal Trust and Worker Representation. Therefore,

although trust exists at a moderate level which, under the organisation's difficult circumstances, is a positive element, there is much opportunity for development.

Cook and Wall's (1980) questions, on organisational commitment and interpersonal trust at work, were used in a study by Coyle-Shapiro, Jacqueline A-M. & Morrow, Paula C. (2003: 19). Their study found organisational commitment was positively related to teamwork and allegiance to quality, but no significant effects were found for active involvement or personal accountability. Trust in colleagues was positively related to teamwork but no significant effects were found for continuous improvement. They found that individual level factors (variables) studied were relatively better predictors of Total Quality Management (TQM) orientation and consequently suggested that understanding how individuals respond to TQM and other change initiatives would be enhanced through a more balanced perspective that considers both organisational and individual antecedents. Their study suggests that organisational leaders could improve individual employee acceptance of organisational change efforts like TQM through greater consideration of individual differences. In effect, the investigation of individual attitudes and behaviours in the present study seeks such understanding. Although the results of the present study indicate positive relationships between constructs, the research is not set up to show leadership intervention in practice. Organisation leaders are still in the process of change toward the development of the individual. This study is based on the individual worker perspective and, although scores are low, they are positive. In lieu of the holistic view of Organisational Climate and its various variables, the current study shows that there is a premise on which to build allegiance to organisational strategies aligned with the successful implementation of LP.

Berg, A & Ohlsson, F. (2005) set out to work at Volvo Truck Production Australia and focused on a Lean Production implementation plan, but, instead, found that preparations had to be done first and a stable foundation for the implementation needed to be created. One of the key building blocks was that workers needed to be included in the planning and development of such implementation so that they

could take ownership and responsibility for their part in it. This thinking influenced the current study to test the organisation's preparedness for lean production implementation. Though positive, this study's results are generally low (varying between midpoint and below midpoint in Table 10), which may be an indication that the organisation is at the beginning phase of LP implementation. However, the results are clear indicators that workers need to be involved in the early stages of implementation.

### **6.3 Discussion relating to Hypothesis 3**

It is hypothesised that the Organisational Climate variables will each have a positive impact on the Individual Attitude and Behaviour variables. This hypothesis is 40% supported by the results in the sense that Organisational Climate directly influences Individual Attitudes and Behaviours by 40%.

It is assumed that existence of organisational climates is broadly accepted. This study adds to the debate of how much weight organisational climate carries in the contribution to an organisation's overall success. This paper aims to recognise that organisational climates do in actual fact have effect on the individuals' attitudes and behaviours. This paper suggests that organisational climate, to some extent, influences Job Satisfaction, Organisational Commitment and Intrinsic Job Motivation.

With this knowledge, it brings into focus that organisations and managers have a lot more potential in terms of unlocking employee resources at their disposal than they were previously willing to acknowledge. One can even go as far as saying that, under South Africa's historical apartheid conditions, our traditional managers were in practice operating in reverse mode. In actual fact they did everything in their power to eliminate such employee potential, and sadly this still appears to be the norm in many cases. With management attitudes turned around, organisations have the potential to grow in areas that they have not previously been willing to acknowledge. It is in the development of the individual that organisations have their real strength.

Cook and Wall (1980) measured the quality of working life applicable to blue collar workers in Britain and found that all trust scales correlated substantially with all organisational commitment subscales, with the exception that trust in peers was unrelated to organisational loyalty. They also found that trust correlated negatively with Personal Need Non Fulfilment (Worker Participation) and, in turn, inversely correlated with all the organisational commitment subscales.

The present study did not review variable subscales in order to limit the scope of the study; however, there were no negative correlations between variables. Trust had a low correlation with commitment and a moderate 0.4 with Participation in Decision Making. However, overall, Intrinsic Job Motivation correlation scores with all the other variables are low and this is clear indication of an area for development.

Warr, Cook and Wall (1979) assessed the quality of working life and found positive correlations between Intrinsic Job Motivation and Job Satisfaction. However, their other subscale correlations are not variables discussed in this paper. In comparison, this study found moderate positive correlations between the two variables.

Warr, Cook & Wall's (1979) questions on Intrinsic Job Motivation were used for the Society for Industrial & Organisational Psychology Inc. (SIOP) Conference paper by Kerrie L. Unsworth, Hilary Brown and Lauren McQuire (2000). The aim of their study was to further understand employee innovation. They hypothesised innovation to be influenced, via the mediating effect of idea generation, by creative personality, job competence and intrinsic motivation. They found a measure of adequate alpha coefficient of reliability ( $\alpha=0.68$ ) for Intrinsic Job Motivation. Their results showed that the effects of creative personality and motivation on innovation were related. In this study Intrinsic Job Motivation has a Cronbach alpha of 0.65, and this did not change over the period studied. Though present with a higher than average mean, workers appear individually motivated, although the results do not show exactly what the motivating factors are. It can



then be assumed that workers find changes in HR/IR and production motivating as this provides promise of a better future for them.

This study's one year follow up at Xco found worker representation and job satisfaction to have undergone the biggest change. This is particularly remarkable since there were no significant increase in union membership over the period. However, there had been a change of worker representative over the period and this indicates the first element for change. An increase in Climate for Initiative, In-Company IR Policy, and Communication are strong contributing factors to the increase in Job Satisfaction. However, this may be in parallel with the positive effects of changes in HR/IR and production systems.

Bluen and Donald (1991) investigated IR climate and found significant correlations between In-Company IR Climate Scale and subscales. "Past research has found significant relationships between measures of IR Climate and both job satisfaction" (Dastmalchian et al, 1982; Fryxell & Gordon, 1989; Hartley, 1984; Klandermans, 1986 in Bluen & Donald, 1991: 13), "and organisational commitment" (Dalton & Todor, 1982; Welsh & Lavan, 1981 in Bluen & Donald 1991: 13). Bluen and Donald's (1991) results suggest that perceptions of IR Climate are associated with conceptually related work attitudes.

In the present study, Job Satisfaction showed moderate positive correlations of 4.5 with Climate for Initiative, Communications, Worker Representation, Interpersonal Trust, Supervision, and Intrinsic Job Motivation. However, Job Satisfaction showed correlations of 0.6 with Participation in Decision Making. This is an indication that Participation in Decision Making exists. At this stage in the organisation, participation in decision making is practiced at a minimum, but the results show its development potential. This result supports Sagie and Koslowsky (2000) who said that workers respond positively to participation in decision making and also supports Pfeffer et al (1995) who maintain that HR/IR should form the integral part of LP achieving success through people.

#### **6.4 Data Summary**

This study's data reveals that there is overall a relatively high level of Intrinsic Job Motivation (mean=4.0). Most other measures are low (means of 2-3), with Communications the poorest (1.86).

The strongest positive correlations of 0.6 and 0.7 were found between Job Satisfaction, Psychological Safety and Participation in Decision Making, between Supervision and Psychological Safety and between In-company IR Policy and Communication. The weakest correlations, although positive at 0.1, are between Communication and Intrinsic Job Motivation.

These results yield clear indicators of areas for improvement and, even more so, existing areas that can be developed into the organisation's strengths. People are the organisation's strongest assets, and it is through them that development can shape the organisation's future as well as their own.

#### **6.5 HR/IR & The Research Questions**

Indications are that the HR/IR initiatives and initiatives implemented on the production lines over the period have contributed positively to the change in workers' attitudes, but other internal politics, for example, the change of their union representative and a more interactive relationship between management and the union cannot be entirely excluded. However, there is more evidence of change in strategies and initiatives that have contributed positively to the change of worker attitudes than the latter.

Research question 1 asks: "What HR/IR and production changes have been implemented in recent years?". Figure 4, Strategies – year 2006/7 and links, in Chapter 4, gives a brief overview of production and HR/IR changes. In addition, Tables 3 and 4 show change in Production and HR/IR over the period. This included the promotion of 30 setters to team leaders and their training which led to the re-structuring of the entire shop-floor, 60 new employees being trained and the start up of a new line. The survey itself may have had some effect on the survey

results as this may have been perceived by workers as assistance to positive change.

The survey data reveals that workers respond positively to change initiatives in HR/IR and production, as discussed in the beginning of this chapter and in the section responding to research question 2. Figure 5, the web diagram presented in Table 11, compares the study results of 2006 to 2007 and shows an improvement in all variables over the period, except Psychological Safety and Participation for Decision Making. The extent of HR/IR and production changes on worker attitudes can be seen on the web diagram in Figure 5. Survey results comparing the two surveys show that workers respond positively to change initiatives in production and HR/IR.

In response to the second research question: “What are workers’ present attitudes to HR/IR practices?”, the overall results showed that change initiatives improved HR/IR parameters over the period studied. The result scores were positive but between midpoint and below midpoint, and current HR/IR climates and practices still need to strengthen in order to meet pre-requisite requirements for the successful long term implementation of LP. It must be noted that the organisation under study was in financial crisis over the period; therefore, these results are good under the circumstances.

The present study contends that Individual Attitudes and Behaviours (Job Satisfaction, Organisational Commitment and Intrinsic Job Motivation) are largely mediated via Workplace Context and initial Organisational Climate processes in LP, in which HR/IR is the effective agent. Although the Organisational Commitment Cronbach alpha measure is weaker by comparison, it has a strong mean, but Job Satisfaction under the circumstances has the strongest outcome amongst the hypotheses.

## **6.6 Summary**

The data gave only moderate support for the Analytical Model in the sense that the results reflected moderate p-values for hypotheses. The low significance levels in the data may not necessarily weaken the model, but could rather reflect Xco's youth in its development toward LP, laden as it was with financial and other problems, which would imply that the model may not fit organizations that are young in their development towards LP. Therefore, this outcome may reflect an early stage in the transition to LP. It would thus be necessary to follow up developments at XCo. To seek a cause-effect using correlation as in this situation may very well be an over simplification, since changes in company practice and modes of production as well as changes in management practice are jointly necessary for the development of LP.

Correlations that were expected to show direct relationships with reference to the conceptual model of hypotheses in Figure 6 can be seen in the correlation table of Appendix III. Regression tables are not conclusive; however, the independent and dependent variables give an idea of the direction of the flow of influence between the different variables and also provide an idea of the strength of the relationships. Minimally, there are no negative relations between variables which places this organisation in a good position and shows improvement in implementation planning in all areas.

HR/IR is in a good position to harness the potential climate that this survey results reveal. It is a broadly accepted concept that someone in particular takes responsibility for task co-ordination, while it is all participants' responsibility to ensure that the task is carried out. In this case, it is HR/IR that should be central to the harnessing of organisational climate. As discussed in this study, HR/IR has full opportunity to be the central driving force to unleash the potential of individual workers' attitudes and behaviours through entrenching cultures within all structures to recognise, appreciate and develop a positive organisational climate

which in turn provide Work Place Context for the development of individual attitudes and behaviours.

### **6.7. Study Limitations**

In sum, the analytical framework sought to address whether Organisational Climates have a positive impact on Workplace Context. This in turn was expected to influence outcomes in workers' Individual Attitudes and Behaviours, and thus provide a more favourable environment for the LP implementation process in the long term. Confirmation that changes in HR/IR and production processes caused an improvement in attitudes and behaviour of workers by a positive impact in the work place context needs to be investigated in studies done over a longer period of time, as conclusive causality may not be possible to infer from a cross sectional study.

The literature review provides reason for the variables chosen in this study. The argument in this project was that organisational climates are responsible for worker attitudes and behaviours, which in turn build the fundamental foundation for the success of long term systems like Lean Production. The measurement of LP presents a problem on its own and no such measure has been standardized. If there is indeed a measure of LP so that changes in LP over time can be traced, the elements which make up these measures may be very difficult to derive since management may not be amenable or prepared to provide data from which LP change can be derived. In the present study, it was virtually impossible to pin down this type of information.

The organisation did not allow access to documentation and policies and, therefore, the survey interviews failed to draw out the documented history of the organisation and records of system changes and restructuring strategies. It also failed to find the exact reasons for the slow HR/IR development toward LP implementation strategies other than pointing out financial constraints. HR/IR at Xco is left to the discretion of the HR Manager and the system is not set up to link or make HR/IR accountable to other departments. This made fact finding and

triangulation difficult, added to which other department managers could not assist in the exploration of details.

### **6.8 Further research**

Based on the findings of this research as well as those areas that were excluded in the design, the following future research projects are suggested:

- To track the development of the change process and repeat the survey annually.
- Variables with low Cronbach alpha may need to be reassessed.
- Research HR/IR in more detail to follow progress and establish clear and direct relationships between HR/IR and Worker Attitudes and Behaviours.
- HR/IR best practice comparison with other organisations or countries.
- Do larger studies at larger organisations.
- Compare findings of similar studies on an organisation with a similar background.



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All interviewee information is withheld to protect the identity of the participants and the organisation.

**APPENDIX I**  
**QUESTIONNAIRE OF EMPLOYEES**

Interviewer:..... Questionnaire No:

Location in factory .....

1. Gender                      Female              Male
  
2. Which race do you identify yourself as?    Black   African    Coloured  
 Indian    White
  
3. Highest Education Qualification:  
     No Formal    Primary school              Std 6-8              Std 9-10  
     Diploma/degree incomplete                      Diploma/degree complete
  
4. Current Age:  
     18-25                      26-35                      36-45                      46-55                      56-65  
             66+
  
5. Are you a member of UNION?              Yes                      No
  
6. When did you first join a trade union?  
     1960s              1970s    1980s    1990s    since 2000-
- 6a. Indicate union name if not NUMSA
  
7. What year did you start working for this company?
  
8. If you previously worked for a company that has now joined the main group, what year did you start working for them and what company was it?
  
9. Which occupational category?  
     unskilled                      semi-skilled operators    skilled                      supervisor  
     clerical                      artisan/technician                      professional  
     other(specify:.....)
  
10. Which plant do you work in here?
  
11. Describe the training you have received since you started working for the company.
  
12. Do you have any plans to further your studies or training in the near future?  
     Yes    No  
     If yes, describe briefly.

Is your proposed study in line with company goals?

Yes    No

13. If the company offered to pay for your training / studies would this encourage you to start studying sooner? Yes                      No

State reasons

14. What do you think about participating in a program where you are required to be multi-skilled?



**15. COMPANY IR POLICY**

15.1 To what extent is the company policy towards the union acceptable to workers?

Not at all	To a little extent	To some extent	To a great extent	Always	Not sure
1	2	3	4	5	

15.2 To what extent are the views and opinions of workers considered when management makes decisions?

1	2	3	4	5	
---	---	---	---	---	--

15.3 To what extent is the company a fair and just employer?

1	2	3	4	5	
---	---	---	---	---	--

15.4 To what extent is the company's approach to worker / management relations the right one?

1	2	3	4	5	
---	---	---	---	---	--

15.5 To what extent has the company succeeded in establishing a good relationship with workers?

1	2	3	4	5	
---	---	---	---	---	--

**16. COMMUNICATIONS**

16.1 How up to date are workers kept on matters that affect their job (e.g. Pensions, pay, etc.)?

NO Not at all	To a little extent	To some extent	To a great extent	YES Always	Not sure
1	2	3	4	5	

16.2 To what extent are the reasons for changes in the company explained to workers?

1	2	3	4	5	
---	---	---	---	---	--

16.3 To what extent does the company inform workers of what they want to know?

1	2	3	4	5	
---	---	---	---	---	--

16.4 To what extent is it possible to obtain relevant information when you need it?

1	2	3	4	5	
---	---	---	---	---	--

16.5 To what extent is information given by management to workers reliable?

1	2	3	4	5	
---	---	---	---	---	--

16.6 To what extent has the style of communications changed in the past years? (i.e. since the new changes have been implemented)

**17 SUPERVISION**

17.1 How easy to approach is your supervisor/section leader?

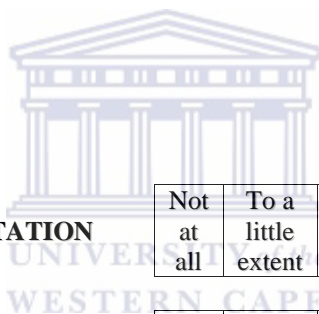
17.2 To what extent is your supervisor/section leader willing to discuss problems?

17.3 How much does your supervisor/section leader help you with your problems?

17.4 To what extent is your supervisor/section leader capable of solving your problems?

17.5 To what extent is does your supervisor/section leader treat all workers fairly and equitably?

	Not at all	To a little extent	To some extent	To a great extent	Always	Not sure
17.1	1	2	3	4	5	
17.2	1	2	3	4	5	
17.3	1	2	3	4	5	
17.4	1	2	3	4	5	
17.5	1	2	3	4	5	

**18. WORKER REPRESENTATION**

18.1 To what extent are representatives truly representative of the workforce?

18.2 To what extent are workers able to approach their representatives?

18.3 How much do representatives help workers with their problems?

18.4 To what extent do representatives take worker problems to management?

18.5 To what extent do representatives report back on what has been discussed with management?

18.6 To what extent are you satisfied with the relationship between management and the union?

18.7 How would you describe the relationship and how do you think it could be improved?

	Not at all	To a little extent	To some extent	To a great extent	Always	Not sure
18.1	1	2	3	4	5	
18.2	1	2	3	4	5	
18.3	1	2	3	4	5	
18.4	1	2	3	4	5	
18.5	1	2	3	4	5	
18.6	1	2	3	4	5	
18.7						

**19. CLIMATE FOR INITIATIVE**

To what extent do you agree that

Not at all	To a little extent	To some extent	To a great extent	Always	Not sure
------------	--------------------	----------------	-------------------	--------	----------

19.1 Workers at this factory actively attack problems

1	2	3	4	5	
---	---	---	---	---	--

19.2 Whenever something goes wrong, members of our cell search for a solution immediately.

1	2	3	4	5	
---	---	---	---	---	--

19.3 Whenever there is a chance to get actively involved, people in our cell take it.

1	2	3	4	5	
---	---	---	---	---	--

19.4 People in our cell take initiative immediately, more often than in other cells.

1	2	3	4	5	
---	---	---	---	---	--

19.5 People in our cell use opportunities quickly in order to attain goals.

1	2	3	4	5	
---	---	---	---	---	--

19.6 People in our cell usually do more than they are asked to do.

1	2	3	4	5	
---	---	---	---	---	--

19.7 People in our cell are particularly good at translating ideas into action.

1	2	3	4	5	
---	---	---	---	---	--

UNIVERSITY of the WESTERN CAPE

Introduction: The next set of items deals with various aspects of your job. Please describe how satisfied or dissatisfied you feel with each of these features of your present job, using the scale

**20. JOB****SATISFACTION**

	Dissatisfied				Satisfied		
	Very Dissatisfied	Dis-satisfied	Some-what	Not sure	Some-what satisfied	Satisfied	Very satisfied
	1	2	3	4	5	6	7
20.1 The physical work conditions.	1	2	3	4	5	6	7
20.2 The freedom to choose your own method of working.	1	2	3	4	5	6	7
20.3. Your fellow workers.	1	2	3	4	5	6	7



20.4. The recognition you get for good work.	1	2	3	4	5	6	7
20.5. Your immediate boss. Approachable? Open Door Policy?	1	2	3	4	5	6	7
20.6. The amount of responsibility you are given.	1	2	3	4	5	6	7
20.7. Your rate of pay.	1	2	3	4	5	6	7
20.8. Your opportunity to use your abilities.	1	2	3	4	5	6	7
20.9. Industrial relations between management and workers.	1	2	3	4	5	6	7
20.10 How do you feel about your chances for promotion	1	2	3	4	5	6	7
20.11. The way your firm is managed.	1	2	3	4	5	6	7
20.12. The attention paid to suggestions you make.	1	2	3	4	5	6	7
20.13 Are you included in decision making with regards to your job.	1	2	3	4	5	6	7
20.14. The amount of variety in your job.	1	2	3	4	5	6	7
20.15 Does the climate support open communication.	1	2	3	4	5	6	7
20.16. Taking everything into consideration, how do you feel about your job as a whole?	1	2	3	4	5	6	7

## 21. CLIMATE FOR PSYCHOLOGICAL SAFETY

To what extent do you agree that

21.1 At this company some employees are rejected for being different.

Not at all	To a little extent	To some extent	To a great extent	Always	Not sure
------------	--------------------	----------------	-------------------	--------	----------

1	2	3	4	5	
---	---	---	---	---	--

21.2 When someone at this company makes a mistake, it is often held against them.

1	2	3	4	5	
---	---	---	---	---	--

21.3 People at work would deliberately act in a way that undermines others' efforts.

1	2	3	4	5	
---	---	---	---	---	--

21.4 It is difficult to ask others for help at work

1	2	3	4	5	
---	---	---	---	---	--

21.5 At work one is free to take risks.

1	2	3	4	5	
---	---	---	---	---	--

21.6 The people at work value others' unique skills and talents.

1	2	3	4	5	
---	---	---	---	---	--

21.7 As an employee at this company one is able to bring up problems and tough issues.

1	2	3	4	5	
---	---	---	---	---	--

21.8 Are there times when you are afraid to speak up and why?

## 22. INTRINSIC JOB MOTIVATION

NO

YES

22.1 How do you personally feel about your present job?

Not at all	To a little extent	To some extent	To a great extent	Always	Not sure
------------	--------------------	----------------	-------------------	--------	----------

22.2 I feel a sense of personal satisfaction when I do a job well.

1	2	3	4	5	
---	---	---	---	---	--

22.3 My opinion of myself goes down when I do my job badly.

1	2	3	4	5	
---	---	---	---	---	--

22.4 I take pride in doing my job as well as I can.

1	2	3	4	5	
---	---	---	---	---	--

22.5 I feel unhappy when my work is not up to my usual standard.

1	2	3	4	5	
---	---	---	---	---	--

22.6 I like to look back on the day's work with a sense of a job well done.	1	2	3	4	5	
---	---	---	---	---	---	--

22.7 I try to think of ways of doing my job effectively.	1	2	3	4	5	
--	---	---	---	---	---	--

22.8 What motivates you or encourages you to do your job well?

<b>23. ORGANISATIONAL COMMITMENT</b> As a member of this company. To what extent do you agree?	Not at all	To a little extent	To some extent	To a great extent	Always	Not sure
23.1 I am quite proud to be able to tell people who it is I work for.	1	2	3	4	5	
23.2 I sometimes feel like leaving this employment for good.	1	2	3	4	5	
23.3 I am not willing to put myself out just to help the organisation.	1	2	3	4	5	
23.4 Even if the firm were not doing well financially, I would be reluctant to change jobs.	1	2	3	4	5	
23.5 I feel myself to be part of the organisation.	1	2	3	4	5	
23.6 I like to feel that I am making some effort, not just for myself but for the organisation as well	1	2	3	4	5	
23.7 If offered more money with another employer I would not seriously think of changing my job.	1	2	3	4	5	
23.8 I would not recommend a close friend to join our staff.	1	2	3	4	5	
23.9 To know that my own work had made a contribution, to the good of the organisation would please me.	1	2	3	4	5	

23.10 What do you like

(a) most and

(b) least about working for this company?

**24. INTERPERSONAL TRUST  
AT WORK (Perception of Climate)**

Not at all	To a little extent	To some extent	To a great extent	Always	Not sure
------------	--------------------	----------------	-------------------	--------	----------

To what extent do you agree with these statements about confidence and trust

24.1	Management at my firm is sincere in its attempt to meet the workers' point of view.	1	2	3	4	5	
------	---	---	---	---	---	---	--

24.2	If I got into difficulties at work I know my workmates would try and help me out.	1	2	3	4	5	
------	---	---	---	---	---	---	--

24.3	Management can be trusted to make sensible decisions for the firm's future.	1	2	3	4	5	
------	---	---	---	---	---	---	--

24.4	I have full confidence in the skills of my workmates.	1	2	3	4	5	
------	---	---	---	---	---	---	--

24.5	Most of my fellow workers would get on with their work even if supervisors were not around.	1	2	3	4	5	
------	---	---	---	---	---	---	--

24.6	I can rely on other workers not to make my job more difficult by careless work.	1	2	3	4	5	
------	---	---	---	---	---	---	--

24.7	There is a high level of trust between Coloureds and Blacks at this company	1	2	3	4	5	
------	---	---	---	---	---	---	--

24.8	There is a high level of trust between whites and others at this company	1	2	3	4	5	
------	--	---	---	---	---	---	--

24.9	There is a high level of trust between people from different towns in this company	1	2	3	4	5	
------	--	---	---	---	---	---	--

At this company, what do you think about the level of trust

(a) among employees, and

(b) between management and workers?

**25. PERSONAL NEED NON-FULFILMENT  
( Participation in decision-making)**

NO				YES	
Not at all	To a little extent	To some extent	To a great extent	Always	Not sure

Are you consulted when changes are made  
25.1 to your job or your work environment?

1	2	3	4	5	
---	---	---	---	---	--

Do you have influence on decisions made  
25.2 about your job?

1	2	3	4	5	
---	---	---	---	---	--

Does your Supervisor give you freedom to  
25.3 make decisions?

1	2	3	4	5	
---	---	---	---	---	--

Do you have the opportunity to exercise  
25.4 your own initiative and judgement in carrying out your work?

1	2	3	4	5	
---	---	---	---	---	--

Do you have the opportunity to discuss or  
25.5 question instructions about work.

1	2	3	4	5	
---	---	---	---	---	--

How often does 1<sup>st</sup> line management step in  
25.6 and make decisions that should be made by the team?

1	2	3	4	5	
---	---	---	---	---	--

Do you receive recognition for your  
25.7 achievements?

1	2	3	4	5	
---	---	---	---	---	--

Do you receive feedback from management  
25.8 concerning problems identified at meetings?

1	2	3	4	5	
---	---	---	---	---	--

Have you received sufficient training on  
25.9 how to participate effectively at meetings?

1	2	3	4	5	
---	---	---	---	---	--

Which of the following topics are discussed at  
meetings?

	This a.m. week	Last week	Last month	Last 6 months	Never
--	-------------------	--------------	---------------	---------------------	-------

25.10 Previous days problems

--	--	--	--	--	--

25.11 Planned production

--	--	--	--	--	--

25.12 Machinery Set up

--	--	--	--	--	--

25.13 Process improvements

--	--	--	--	--	--

25.14 Individual suggestions to job improvement

--	--	--	--	--	--

25.15 Other issues (please describe)

--	--	--	--	--	--

Not for  
 This This Last Last 6 Never  
 a.m. week week month months

25.16 When was the last time you attended a meeting ?

--	--	--	--	--	--

25.17 When did you last speak up/participate at your meeting?

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OTHER COMMENTS



## **APPENDIX II**

### **AUTHORS OF MEASURES USED**

#### **15. COMPANY IR POLICY**

#### **16. COMMUNICATIONS**

#### **17. SUPERVISION**

#### **18. WORKER REPRESENTATION**

Bluen, S. D. & Donald, C. (1991). The nature & measurement of In-Company Industrial Relations Climate. *South African Journal of Psychology*, Vol. 21:12-20.

#### **19. CLIMATE FOR INITIATIVE &**

#### **21. CLIMATE FOR PSYCHOLOGICAL SAFETY**

Baer, M. & M. Frese (2003). Innovation is not enough: Climates for initiative and psychological safety, process innovation, and firm performance. *Journal of Organisational Behaviour*. Germany: John Wiley & Sons Ltd, Vol. 24: 45-68.

#### **20. JOB SATISFACTION**

Warr, P., Cook, J. & Wall, T. (1979). Scales for the measurement of some work attitudes and aspects of psychological well-being. *Journal of Occupational Psychology*, Vol. 52: 145-148.

#### **22. INTRINSIC JOB MOTIVATION**

Warr, P., Cook, J. & Wall, T. (1979). Scales for the measurement of some work attitudes and aspects of psychological well-being. *Journal of Occupational Psychology*, Vol. 52: 145-148.

#### **23. ORGANISATIONAL COMMITMENT -**

Developed from Cook, J. & Wall, T. (1980). New work attitude measures of trust, organisational commitment and personal need non-fulfilment. *Journal of Occupational Psychology*, Vol. 53: 39-52.

#### **24. INTERPERSONAL TRUST AT WORK (Perception of Climate)**

#### **25. PERSONAL NEED NON-FULFILMENT (Participation)**

Developed from Cook, J. & Wall, T. (1980). New work attitude measures of trust, organisational commitment and personal need non-fulfilment. *Journal of Occupational Psychology*, Vol. 53: 39-52.

<b>APPENDIX III - Bivariate Correlations of Measures</b>		In-Co. IR Pol. 15	Comm 16	Suprvsn 17	Worker Rep. 18	Climate for Initiative 19	Job Satisfctn 20	Psych. Safety 21	Intrinsic Job Motivation 22	Org. Comtmnt 23	Int. Trust 24	Participation in Decisions 25
IN-Co.IR Policy Q15	PC S2t N	1.000 103										
Communication Q16	PC S2t N	0.721 0.000 97	1.000 123									
Supervision Q17	PC S2t N	0.483 0.000 92	0.491 0.000 109	1.000 117								
Worker representation Q18	PC S2t N	0.342 0.001 95	0.468 0.000 110	0.419 0.000 105	1.000 116							
Climate for Initiative Q19	PC S2t N	0.337 0.001 99	0.309 0.001 114	0.431 0.000 108	0.481 0.000 109	1.000 121						
Job Satisfaction Q29	PC S2t N	0.405 0.003 53	0.486 0.000 59	0.560 0.000 56	0.475 0.000 59	0.343 0.007 61	1.000 62					
Psychological safety Q21	PC S2t N	0.481 0.000 74	0.331 0.002 83	0.631 0.000 76	0.437 0.000 81	0.396 0.000 83	0.575 0.000 50	1.000 87				



APPENDIX III - Bivariate Correlations of Measures		In-Co. IR Pol. 15	Commun- ication 16	Suprvsn 17	Worker Rep. 18	Climate for Initiative 19	Job Satisfctn 20	Psych. Safety 21	Intrinsic Job Motivation 22	Org. Comtmnt 23	Int. Trust 24	Participation in Decisions 25
Intrinsic Job Motivation Q22	PC S2t N	0.245 0.053 63	0.182 0.110 78	0.213 0.062 77	0.203 0.087 72	0.282 0.012 78	0.469 0.001 48	0.263 0.050 56	1.000 .83			
Organisational Commitment Q23	PC S2t N	0.288 0.006 89	0.354 0.000 103	0.388 0.000 92	0.313 0.002 95	0.341 0.001 98	0.519 0.000 56	0.412 0.000 78	0.541 0.000 72	1.000 .103		
Interpersonal Trust Q24	PC S2t N	0.548 0.000 91	0.580 0.000 102	0.400 0.000 96	0.474 0.000 96	0.553 0.000 102	0.403 0.002 55	0.396 0.000 80	0.270 0.029 66	0.335 0.001 90	1.000 .106	
Participation in Decisions Q25	PC S2t N	0.504 0.000 88	0.527 0.000 104	0.522 0.000 96	0.434 0.000 98	0.431 0.000 103	0.618 0.000 54	0.616 0.000 79	0.256 0.035 68	0.393 0.000 89	0.458 0.000 92	1.000 .109

\*\*

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

\*

Correlation is significant at the 0.05 level (2-tailed).

PC = Pearson Correlation  
S2t = Sig. (2-tailed)  
N = No. of respondents

0	is no correlation
0.1 / 0.2	- Closer to zero is a weak positive correlation
0.3	low positive correlation
0.5	moderate positive correlation
0.7	strong positive correlation
+1	perfect positive correlation



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