

# CHAPTER 1

## INTRODUCTION

*Organisational jobs are normally complex, multifarious, and seldom done by individuals in isolation (Pearson, 1991).*

"Teams" have become a key component in workplace design. Despite the growing prevalence of teams in organisational settings, however, an extensive review of the literature indicates that the empirical evidence regarding the effectiveness of teams is limited (Cohen & Ledford, 1994). The evidence that is available is primarily anecdotal and it is therefore believed that further empirical studies need to be conducted in order to improve the theoretical foundation of this growing trend. Teams are chiefly associated with boosting productivity, yet not all companies can report success. As Eileen Appelbaum, author of *The New American Workplace*, notes, "It's not that teams don't work. It's that there are lots of obstacles." The importance of improving the theoretical understanding regarding teams is highlighted by Dumaine (1994):

*"Yes, teams have troubles. They consume gallons of sweat and discouragement before yielding a penny of benefit. Companies make the investment only because they've realised that in fast-moving, brutally competitive economy, the one thing sure to be harder than operating with teams is operating without them."*

The purpose of the present study is to examine three factors which may explain why some teams are more effective (in this case, specifically productive) than others. An understanding of these factors is considered to be useful for enhancing the effectiveness of all teams.

Factors selected for this study are job satisfaction, internal work motivation and psychological participation. The reason for their selection is twofold. Firstly, the general literature available on teams suggests that each of these factors is improved when teams are implemented and,

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explored in the report together with the question of how team factors can influence an individual's perception of job satisfaction. Serving as foundation for discussion is the argument that job satisfaction is an attitude which is primarily cognitively-based. In addition, a key focus of the discussion is that no significant relationship was found between internal work motivation and team productivity or between psychological participation and productivity.

These findings and their theoretical and practical implications are outlined. In addition, the limitations of the present study are explained and recommendations for future research on teams are made.

## ABSTRACT

Teams have, over the last decade, become a popular feature of workplace design. The basis for this trend is the belief that teamwork allows individuals to satisfy more of their work-based needs and should therefore, ultimately, improve performance.

Despite the increased implementation of teams across a broad spectrum of organisations, empirical research on teams is still in its formative stages and precisely what contributes to team effectiveness remains elusive. Addressing this need, the present study embodies an exploratory empirical investigation of teams as they are practised at the rock face of a gold mine. The research involved examining a sample of these teams using three specific variables which, it was hypothesised, may explain the differences in performance between these teams.

More specifically, this study investigated the impact of job satisfaction, internal work motivation and perceived psychological participation on team performance. Each of these individual variables was examined using a previously-validated scale. The variables were incorporated into a single questionnaire which was administered in a group session with each individual in the teams sampled. A team performance measure ( $m^2/man$ ) was obtained directly from the mins.

Statistical analysis of this data followed a logical progression. At the outset, a one-way ANOVA was run to assess whether statistically there were significant differences between the teams on each of the factors. Indicating that differences do indeed exist, the results justified the reduction of individual scores in each team to a single aggregate of that variable for the team. Correlation tests were then run between each of the variables and the team performance measure.

The results of this study suggest that there is a significantly positive relationship between job satisfaction and team productivity ( $r=.6376$ ). This runs contrary to much of the previous research examining job satisfaction and individual productivity, although it supports some researchers' suggestion that performance should be more broadly defined. This notion is

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## DECLARATION

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

*Theressa Cotterrell*  
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**THERESA COTTERRELL**

..... day of *February*, 19*96*

# **FACTORS AFFECTING THE PRODUCTIVITY OF TEAMS**

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**Theresa Cotterrell**

A dissertation submitted to the  
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# **FACTORS AFFECTING THE PRODUCTIVITY OF TEAMS**

**THERESA COTTERRELL**

A number of quasi-experiments were conducted in response to the Tavistock normative propositions<sup>1</sup> which helped to counter the concern that the propositions were premature and empirically unverified. These research efforts, all of which were published at least 30 years ago, lent further credence to the usefulness of designing work groups to exercise a degree of self-control.

These early research efforts included:

1. The reorganisation of the automatic weaving department of an Indian textile mill into self-regulating work groups resulted in higher levels of "quality and quantity" over an extended period of time (Rice, 1968).
2. Group decision making and leadership participation at Harwood Manufacturing resulted in increased output and member satisfaction (Bucklow, 1966).
3. Group control of conveyor speed resulted in significant increases in output and satisfaction (Strauss, 1966).
4. The reorganisation of the assembly line process at Non-linear Systems, Inc., of California, resulted in a 30% increase in output and satisfaction (Kurtloff, 1963).
5. The reorganisation of women in a Norwegian clothing factory into work groups resulted in an increase in output and satisfaction (King, 1964).

One of the specific aspects of teams examined experimentally are attitudinal and behavioural outcomes. Sociotechnical system theorists have argued that self-regulating work groups have a favourable impact upon member attitudes and behaviour (eg. Emery, 1959; Herbst, 1974; Pasmore, 1988). These predictions are consistent with those made within other theoretical perspectives on work design for autonomous working arrangements (eg. Hackman, 1983;

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<sup>1</sup> The Tavistock Institute developed a set of four broadly-stated conclusions for establishing self-regulating work groups:

- a) The group should be collectively responsible for a substantial but manageable piece of the business.
- b) The arrangement of work should facilitate social relationships that foster co-operative interaction.
- c) Employees should have the opportunity to learn all jobs included within the organisational segment.

are introduced. For example, work technology may facilitate or inhibit the impact of self-directed teams (Emery, 1980).

studies examined turnover, three found lower turnover, while one found higher turnover after moving to self-directed work teams.

In their review of 134 studies of sociotechnical systems from the 1970s, Pasmore, Francis, and Haldeman (1982) reported that 71, or 63%, of the studies described the use of self-directed work teams. The teams were extremely successful in terms of employee attitudes, safety, and quality - 100% of the studies that measured these variables found improvements in them. Considerable success was also demonstrated for other variables. Of those studies that examined productivity, costs, absenteeism, and turnover, 89% found improved productivity, 85% showed decreased costs, 86% found decreased absenteeism, and 81% demonstrated decreased turnover.

In his meta-analysis, Beekun (1989) reviewed studies that involved the formation of teams, not all of which were self-directed. He divided the studies into three groups, dependent on the degree of autonomy given to the teams. Autonomous work teams had complete freedom in the choice of work scheduling, work partners, and work techniques. Semiautonomous work teams had much freedom but also had some external supervision. Non-autonomous work teams provided little freedom, and the workers were directed externally. Beekun found that studies, particularly those conducted outside of the US, involving the establishment of autonomous, rather than semi- or non-autonomous, work teams demonstrated larger increases in productivity. Further positive influences on productivity were effected by increases in monetary incentives.

### **Quasi-experimental studies**

Virtually all of the quasi-experimental studies reviewed by Cotton (1993) showed improvement in employee attitudes and attitude-related behaviours such as turnover and absenteeism. The results for productivity were less consistent. It appears that self-directed teams did not increase productivity in a simple and direct fashion. Indirect improvements often occurred, however, through the elimination of one layer of management, for example, or through changes in work methods via employee suggestions. These findings imply that productivity improvements may occur but that these will be dependent on the environment in which teams

being worked on, and then moved to the next team on individual carriers. Each team was responsible for a particular, identifiable, subassembly of the car - the steering gear, electrical system, interior, and so on (Katz & Kahn, 1978; Thompson, 1981). These changes also have been introduced into other new Volvo plants and, in modified forms, in existing plants as well (Gyllenhammar, 1977a, 1977b).

Volvo has been relatively silent about precise figures, but an independent assessment of the Kalmar plant indicated increased productivity (Mroczkowski & Champagne, 1984). Another report stated that the plant reduced direct manufacturing work hours by 60% from 1977 to 1988, and by 1988 Kalmar was Volvo's lowest cost assembly plant (Sel, 1988). Aguren, Hansson, and Karlsson (1976, in Katz and Kahn, 1978) evaluated worker attitudes at Kalmar in 1976. They found that over 90% of the workers liked the teamwork and job switching within the teams. In addition, these authors found that assembly workers perceived greater direct influence on the work than white-collar employees.

Volvo opened another plant in 1989 at Uddevalla, where it employs teams of seven to ten workers undertaking the final assembly for Volvo 740s. Like Kalmar, the plant has no assembly line. Recently, Volvo claimed that the Uddevalla plant already has demonstrated higher productivity and quality with lower absenteeism and turnover than its other plants (Kapstein & Hoerr, 1989). Other sources, however, have suggested that the plant is not productive enough to be competitive (Prokesch, 1991).

### **Case Study Reviews**

In addition to the well-known examples outlined above, a number of writers have surveyed other case studies examining the impact of self-directed work teams. Cummings and Malloy (1977) reviewed 16 studies, all of self-directed work teams, and found that nine of the ten studies measuring productivity showed increases, while one demonstrated a decrease. Five of the six studies that examined costs found decreased costs (one study had no change). Of the eight studies that surveyed employee attitudes, five found improved attitudes, one found lower attitudes, and two found that some attitudes improved though others worsened. Four

(1953, 1958), who introduced self-directed work teams in Indian weaving sheds and demonstrated increased productivity. Although the findings were impressive, so many other changes (such as increased pay) also occurred that it is difficult to isolate the impact of the self-directed work teams.

In the wake of the success of Trist and his colleagues in Great Britain, and of Rice in India, followed a series of experiments involving sociotechnical systems in Norway (Emery and Thorsrud, 1964/1969, 1976). Four demonstration projects, most dealing with self-directed teams, were conducted in a variety of manufacturing settings (Bohwag, 1976). Three of the four interventions were judged to be successful, with improved attitudes at two sites and higher productivity at one location.

The best-known application of self-directed work teams in the United States occurred at the General Foods dog food plant in Topeka (Walton, 1977, 1982). This plant was conceived in 1968 and started up in 1971. From the outset, self-directed teams formed the foundation of the production process, with teams designed to perform most production and support tasks. A "team leader" was assigned to each team to facilitate group development and processes. This was, to use Lawler's (1978, 1990, 1991) term, one of the first "new plant approaches".

From an overall performance point of view, the implementation of teams at the Topeka plant produced positive outcomes. Walton (1977) cited savings in "the neighbourhood of a million dollars annually, a figure significant in a plant with 100 or so personnel and involving a capital investment in the range of 10-15 million dollars" (p. 423). Walton (1982) reported that, through 1977-1981, productivity had improved every year except one, and product quality was consistently one of the best in the corporation.

Another well-known example of self-directed work teams is the work in Sweden of Volvo and Saab. Because of high taxes, low unemployment, and generous sick leave and unemployment practices (Bednarek, 1990), these auto companies have had considerable trouble in recruiting and keeping Swedish workers. Volvo opened a plant at Kalmar in 1974, with teams of 15 to 20 employees assembling sections of passenger cars. Rather than having the cars move past the workers on the assembly line, the cars are held stationary while

approach that attempts to optimise the relationship between the social and technical systems of an organisation (Beekun, 1989, p. 877).

All of the definitions presented may be applicable in specific circumstances and for specific purposes. In actual organisational settings, however, the author contends that such a formal process of defining teams seldom occurs. There are numerous reasons for this. In many cases, teams as defined for the purposes of this study do exist throughout the organisation, although they are not consciously designated as such. In other cases, although the team may be formally constituted, dynamics within the group do not permit it to function as a team in the true sense. To incorporate this multitude of conditions would result in complicated definitions and thus the author suggests that some degree of inaccuracy in definition is the only practical solution.

In light of the above discussion, it is clear that a review of the research on teams is problematic. Exactly what the research results are depends to a great extent on what the definition of the team is at the outset. Notwithstanding this limitation, it is considered worthwhile to review the research to date.

### ***Research on Teams***

Cotton's (1993) review on self-directed work teams divided the relevant research into three groups, dependent on the information and the methodology involved:

1. Classic case studies which are described in detail
2. Reviews that describe many other smaller case studies
3. Quasi-experiments.

### **Case studies**

The case study by Trist and Bamforth (1961) of British coal mining teams and its findings by the Tavistock Institute of Human Relations in London prompted additional studies of self-directed work teams. Several of these (Trist, Suman, & Brown, 1977) were quasi-experiments and so are reviewed later. Another of the earlier case studies was that of Rice

Several factors influence what comprises a team. Time is one factor for consideration in constituting teams, in that teams tend to evolve over time (Gerslck, 1988; Morgan et al., 1986). That is, both roles and norms evolve, and team members develop new skills and attitudes. Further, tasks are modified, communication patterns unfold, goals are revised, and personnel may change (Fannenbaum et al., 1992).

The variety of purposes, structures and types of teams has given rise to a number of different names to specify the nature of the team. Dumaine (1984) suggests that there are five 'species' of teams: management teams, virtual teams, problem-solving teams, work teams and quality circles. Even these can be further specified. For instance, work teams are variously called self-directed work teams, self-regulating work groups, self-managing teams (although these may also refer to one of the other 'species'), autonomous work groups or semi-autonomous work groups.

According to Dachler and Wilpert (1978), self-directed work teams involve a formal system of employee involvement, direct employee participation, and a high degree of control. The content of the involvement is on day-to-day work decisions. Incorporating groups of lower level employees and involving all of the employees in a specific area, or those working on a specific product or process (Cummings, 1978), the team may be any size but is generally not more than 12 to 16 employees. Essentially self-directed work teams can be defined as where front line employees (typically blue-collar production or clerical employees) are given the opportunity to make decisions (as a group) over their day-to-day work operations that typically would be made by a supervisor or foreperson.

Much of the theory regarding self-directed work teams (especially the original theory) derives from the sociotechnical systems framework, in particular work done at the Tavistock Institute which is renowned for its sociotechnical system specialisation. A number of authors (Herbst, 1962; Susman, 1976; Trist, 1981) cite self-directed work teams (autonomous work groups or semi-autonomous work groups) as part of the sociotechnical systems approach. It must be noted, however, that sociotechnical systems theory is a lot broader - it is an open systems

Salas et al. (1992) have proposed a holistic definition. According to them a team is:

*"a distinguishable set of two or more people who interact, dynamically, interdependently, and adaptively toward a common and valued goal/objective/mission; each of whom has been assigned specific roles or functions to perform, and who have a limited life-span membership" (p. 4).*

This definition has been shaped by the input of many authors, including Dyer (1984), Hall and Rizzo (1975), Modrick (1986), Morgan, Glickman, Woodard, Blaiwes, and Salas (1986), and Nlava, Fleishman, and Rieck (1978), among others; and it is viewed as being somewhat more appealing than the typical dictionary definitions.

However, since the teams which are being examined in this study are in fact "work teams", which are constituted as permanent bodies, it is clear that this definition is not appropriate.

Thus, for the purpose of this study, the author has slightly modified Salas et al's (1992) definition to conform with the type of team under investigation:

*"A team is a distinguishable set of two or more people who interact dynamically, interdependently, and adaptively toward a common and valued goal/objective/mission; each of whom has been assigned specific roles or functions to perform."*

The central premise of this definition incorporates task orientation. That is, the accurate completion of a team task requires: (a) a dynamic exchange of information and resources among team members; (b) co-ordination of task activities; (c) constant adjustments to task demands; and (d) organizational structuring of members. From this perspective, it is clear that some form of task dependency must exist among team members in order for them to interact dynamically and adaptively to accomplish an objective. Member interdependency is a key element in distinguishing teams from groups. Although teams are essentially groups of individuals, not all groups of individuals are considered teams (Driskell & Salas, 1992; Lewis, Hritz, & Roth, 1983; O'Neil et al., 1992; Tannenbaum, Beard, & Salas, 1992).

Table 1: A Variety of Team Definitions.

Author(s)	Definition
Boguslaw & Porter (1962)	a relationship in which people generate and use work procedures to make possible their interaction with machines, machine procedures, and other people: the pursuit of system objectives
Dieterly (1978)	a distinguishable set of individuals who function together to accomplish a specific objective
Smillie, Shelnut, & Bercos (1977)	small groups, usually two to eleven men, who normally perform their tasks in an interactive and interdependent manner. Position or member assignment within a team must be formally defined.
Thorndyke & Weiner (1980)	set of individuals working co-operatively to achieve some common objective
Scanland (1980)	synergistic set of individuals, the sum of whose purposes is the execution of a desired function in which no individual effort is redundant of another member's effort, with no gap in the total contribution of members in fulfilling the function of the team
Daniels, Alden, Kanarick, Gray, & Reuge (1972)	three or more persons working in concert toward a common, identifiable, and relatively immediate goal
McDavid & Harari (1968)	a standard set of role relationships among its members, and has a set of norms that regulate the function of the group and each of its members
Neva, Fleishman, & Rieck (1978)	two or more interdependent individuals performing coordinated tasks toward the achievement of specific task goals
Klaus & Glaser (1968)	teams are characterized by a rigid structure, organization, and communication network, well-defined assignments and the necessity for co-operation and co-ordination

*From Knerr, Nadler, and Berger (1980).*

teams being formulated and these are considered a suitable starting point for a review of the literature.

### ***Definitions of Teams***

The Collins English Dictionary (1986) defines a team as "a group of people organised to work together." As Swezey et al (1994) note, however, the identification of just what comprises a team is difficult. Team boundaries are often nebulous, with many overlapping memberships and borders (Knerr, Nadler, & Berger, 1980). Additionally, the structure and composition of a team is often unstable, and typically varies according to changes in the problems that confront the team (Glanzer, 1962). The number and variety of definitions present in the earlier literature provide simple evidence of the difficulty inherent in clearly specifying the constitution of a team (Knerr et al., 1980). Table 1 lists several such definitions.

productivity, an imperative to enhance that productivity has prompted South African organisations to follow the world-wide trend of implementing teams as a solution to the problem.

### ***The changing nature of our workforce***

External forces are not the only motivator for finding a new way of working. It is evident that individuals employed in organisations are also changing. The reasons are largely external - employees are generally better educated than they were a generation ago and, consequently, they expect to be able to apply their intellect in their work. In addition, governments are allowing their constituents more of a say in their operation, yet most organisations disallow democracy in their own functioning.

These forces of change do not operate in isolation. They converge, simultaneously fuelling and being fuelled by one another. Thus, the rapidly increasing prevalence of teams may be seen to be dualistically driven.

Although it would seem that teams have only been prominent in the last decade, the original study of self-directed work teams dates back to an investigation of British coal mining teams by Trist & Bamforth in 1951. The authors examined the impact of a modern mine where management had invested in large amounts of machinery and had designed specialist jobs. Contrary to management's expectation, these improvements led to lower productivity than found in an old-fashioned mine, not the higher productivity anticipated. Trist and Bamforth studied the work processes at the "old fashioned" Durham mine and found that workers and managers had devised a system of job rotation. In addition, because they worked together as a group, the Durham miners could chart their fellow miners' progress and adjust their own jobs accordingly. Although no statistical tests were presented by Trist and Bamforth, miners in the newer, more specialised, roles appeared less satisfied, less productive, and more likely to be absent than the miners employed in the traditional, self-directed work teams (Trist, 1981).

This finding may be considered the catalyst for the interest in teams, precipitating further research on the subject. In-depth examination of teams has resulted in various definitions of

secondly, the extensive literature regarding individual performance links these factors to productivity.

This introductory chapter will examine teams as a general concept, while the ensuing chapters will explore work motivation, job satisfaction and psychological participation in more detail. With reference to particular studies, the link between each of these factors and performance will be examined within the context of the changing business environment identified by Dumaine (1994), amongst others, as one of the primary forces encouraging the implementation of teams.

### ***The changing environment of business***

Several powerful environmental forces are driving organisations to change the way they currently operate. Undoubtedly, a key feature of this changing business environment is that competition is growing increasingly fierce. Globalisation of the marketplace is one of the main reasons for heightened competition. As a result, organisations need to be able to improve productivity without expanding resources. Increasingly, teams are seen as a vital solution (Cannon-Bowers, Oser, & Flanagan, 1992; Hackman, 1989; Lawler, Mohrman & Ledford, 1992; Dumaine, 1994; Hoer, Pollock, & Whiteside, 1986). According to Boeing President, Philip Condit (*In Fortune*, Sept. 5, 1994): "Your competitiveness is your ability to use the skills and knowledge of people most effectively, and teams are the best way to do that." This opinion is corroborated by Tosi, Rizzo & Carroll (1986), who maintain that one of the ways that industry can adapt to these challenges is through greater use of work teams, committees, and task forces within the workplace. It would seem that industry is following this advice - a survey in 1994 of Fortune 1000 companies found that 68% use self-managed or high performance teams (Dumaine, 1994), which is up from 47% in 1992 (Lawler, Mohrman & Ledford, 1992).

While most of these authors base their findings on the United States experience, it is undeniable that South African companies are impacted equally, if not to a greater extent, by such forces. The seclusion of South African industry during the apartheid years, amongst other factors, has contributed to a workforce which is particularly unproductive (a fact confirmed in the *World Competitiveness Report*, 1995). Whatever the reasons are for low

Nlewa et al., 1978). Feedback enhances performance on that aspect of performance about which feedback is provided (Salas et al., 1992).

In addition to feedback itself, the manner in which feedback is presented and sequenced may have motivational consequences. Sequencing feedback on various aspects of a team task is a useful method for training teams to enhance performance. Salas et al. (1992) have suggested that feedback should focus only on one aspect of task performance during early training sessions, but on several aspects of task performance during later training sessions. Briggs and Johnston (1967) found that when this sequencing strategy was employed, teams attempted to enhance performance for all aspects of a team task on which they had received feedback.

### ***Critique of the current research on teamwork***

The preceding review of the literature on teamwork confirms Cohen and Ledford's (1994) assertion that the empirical evidence regarding the effectiveness of teams is limited. Various researchers have highlighted specific aspects which in their exposure is limited. For instance, McCallum, Oser, Morgan & Salas (1989) suggest that there is a general lack of understanding of the components of teamwork with regard to specific teamwork behaviours. Alternatively Dyer (1984) believes that the research is lacking on team member interactions and whether or not interactions vary over time, by situation, and/or by team experience. Another issue which has been highlighted is how team productivity or performance is actually measured, as Swezey et al (1994) point out. Close examination of the literature illustrates that initially the spotlight fell on performance, but during the 1980s this emphasis has been superseded by a greater focus on productivity (Akin & Hopelain, 1986; Armitage, 1984; Griffin, Welsh, & Moorhead, 1981; Schilling & Brauer, 1985). This interest has not been matched with a commensurate examination of group effectiveness issues (Pritchard et al. 1988). Also, the considerable research on individual performance has often been for relatively simple tasks (frequently in quasi-work climates) and, although valuable, the findings have limitations because organisational jobs are normally complex, multifarious, and seldom undertaken by individuals in isolation (Pearson, 1991). This membership interdependence, task integration,

behaviour, as, too, does the rank of a given team in relation to other teams. According to Morgan and Lassiter (1992), a team's perception of its own role, status, and value to an organization is an important factor in determining the way a team interacts and performs.

### **Evaluation**

The presence or absence of potential evaluators has been shown to impact on team performance (e.g., Harkins & Szymanski, 1987; Jackson & Williams, 1985). Cottrell (1972), for example, has reported that potential for evaluation may produce arousal which facilitates performance on simple tasks, but impairs performance on more complex tasks. Extending this notion, Harkins and Szymanski (1987) found that in order to evaluate performance, the standard of performance must be known. In addition to performance quality. When an individual suspects that his or her performance may be evaluated, it is likely that he or she will be more highly motivated and will therefore perform better (Penner & Craiger, 1992). The potential also exists for self-evaluation to influence individual performance. A study by Harkins and Szymanski (1989) appears to confirm this potential. When individual group members were provided with a standard against which their group's performance could be compared, individuals increased the quantity and quality of their performance. The motivating effect of potential evaluation, however, is moderated by team size (Penner & Craiger, 1992). As team size increases, a given individual may feel that the probability that his specific performance will be identified and evaluated is decreased. This, in turn, can result in both decreased individual and team performance. The complexity of evaluation is illustrated in Franklin's (1994) study. His data indicate a reduction in anxiety yet poorer performance in a high stakes evaluation, as compared to training evaluation, for antisubmarine warfare aircrews.

### **Feedback**

The amount of feedback available to a team may have a motivational impact. Feedback is one way to facilitate team member performance and demonstrates the contribution of that performance to the performance of other members and to the team as a whole (Salas et al., 1992). Among researchers there is general agreement that feedback about the effectiveness of task performance should be provided to team members in a timely manner (Dyer, 1984;

As a result, de-individuation can affect an individual's motivation level and, presumably, performance (Panner & Craiger, 1992). Finally, with regard to motivation specifically, several studies have indicated an inverse relationship between group size and motivation (e.g., Barker, 1960, 1968; Thelen, 1949; Wicker, 1969).

### **Task Characteristics**

The influence of the task type on team performance and motivation has been documented by several researchers (Gladstein, 1984; Goodman, 1986; Steiner, 1972). Tannenbaum et al. (1992) have reported that task complexity is related to task performance and that task difficulty accounts for a significant amount of variance in team performance. Several researchers have also shown that task organisation and task type can influence team effectiveness (Kabanoff & O'Brien, 1979; McGrath, 1984). Task demands appear to have a moderating influence on the impact of team homogeneity or heterogeneity. If successful task completion requires smooth and timely team member interactions, then homogeneity of personalities, abilities, attitudes, etc. will result in better team performance. Heterogeneous teams, by contrast, tend to perform better when the task is relatively complex and/or requires a creative solution (Morgan & Lassiter, 1992).

### **Organisational Context and Environment**

The organisational context and environmental surroundings in which the team functions also merit consideration with respect to team performance and motivation. Organisational culture may motivate teams. The degree of formalisation in a team has profound effects on performance (Pugh, Hickson, Hinings, & Turner, 1968). If a high degree of formalisation exists in team structure, team performance tends to be procedural and routinised. Highly formalised teams are therefore better suited to performing routine tasks that require little creativity (Morgan & Lassiter, 1992), while less formalised teams respond more effectively to less predictable situations. Sundstrom, Perkins, George, Futrell, and Hoffman (1990) have reported that supportive organisational cultures are associated with higher performing teams. Other organisational variables, such as reward systems (Hackman, 1983; Steiner, 1972) and the nature of intergroup or lateral relations (Brett & Rognes, 1986), may also influence team

specifically, that performance enhances cohesion. Anderson (1975), as a case in point, has demonstrated that within task-oriented teams cohesion can increase when teams are more successful. Detractors also exist from the position that team cohesion is strongly related to team performance (e.g., Stodgill, 1972). Indeed, team cohesion may influence motivation and performance through the phenomenon known as de-individuation. Deindividuation refers to a psychological state in which a person has a decreased sense of personal identity and responsibility (Penner, 1986). Among factors that can produce de-individuation are excessive levels of physiological and psychological arousal and strong feelings of attraction to one's team (Penner & Craiger, 1992).

### **Team Size**

In addition to the structure of a team, its homogeneity or heterogeneity, and its cohesiveness, team size has also been shown to affect motivation and performance. As team size increases, so does the size of the pool of performance resources (Shaw, 1976). According to Morgan and Lassiter (1992), larger teams have more resources available to them which, in turn, can lead to increased creativity, varieties of information processing, and increased team effectiveness. There is, however, a tradeoff. Increasing the size of a team may prove to be a double-edged sword, since increases in team size beyond a certain point may produce diminishing returns and can hinder team performance. Larger teams face problems associated with the greater number of team member interactions necessitated by size, more difficulty in co-ordination, and potential decreases in member participation. Increasing team size has also resulted in increased co-ordination demands and communication workload (Shaw, 1976), decreased communication (Indik, 1965), and reduced participation among team members (Gerard, Wilhelmy, and Conolley, 1968). Another study (Gibb, 1951) found that as team size is increased, members report increased inhibition to participate. The heightened complexity and difficulty of communication, along with changes in the team's social structure, may lead some individuals to decrease their involvement in team communications (Morgan & Lassiter, 1992). The phenomenon of de-individuation (described earlier) may also pose a problem as team size expands. According to Penner and Craiger (1992), de-individuation makes the individual relatively inattentive to previously-held principles, and self-regulation breaks down.

that general abilities can produce various effects on group performance. Firstly, the abilities of team members may be combined in an additive fashion to increase overall team performance in proportion to members' ability levels. Secondly, individual abilities may also be combined so as to produce an overall loss in team efficiency; and, finally, the individual abilities of team members might be combined so that team performance is higher than the levels predicted on the basis of additivity. In an examination of three-member tank crews, Tziner and Eden (1985) reported that abilities appeared to have an additive effect when teams were heterogeneously able. Specifically, uniformly low-ability teams performed poorly, while uniformly high-ability teams appeared to perform well. Not surprisingly, studies on the relationship between task-relevant abilities, team members and team performance have generally indicated that team performance is improved by selecting individuals with high levels of task-specific skills (Morgan & Lassiter, 1992).

### **Cohesiveness**

Along with homogeneity and heterogeneity, cohesiveness may play a role in a team's motivation and performance. Tannenbaum et al. (1992) suggest that cohesiveness – which reflects a team's feeling of belongingness and sense of teamness – is related to team performance. Highly cohesive teams tend to have members who: (a) are greatly involved in the team's activities; (b) have less tendency toward absenteeism; and (c) display high levels of co-ordination during team tasks. The effects of cohesion have been related to team member interactions, satisfaction, and team performance (Shaw, 1976). A significant positive relationship between team cohesion and team member interaction has been reported by Lott and Lott (1961). Also, positive relationships between team cohesion and member satisfaction have been found. In general, members of cohesive teams tend to be more satisfied with their jobs and their team situations (Morgan & Lassiter, 1992). Manning and Fullerton (1988) have reported that members of highly cohesive army units tended to indicate greater job satisfaction than did members of less cohesive units.

Although the general consensus, with regard to cohesiveness and performance, is that group cohesion enhances performance (Shaw, 1976), the reverse has also been shown -

Driskell et al. (1987) have proposed a taxonomy of six personality traits (Intelligence, adjustment, ambition, prudence, sociability, and likability), which they believe impact team performance: "different personality types will perform better in different task groups, because different behaviours are required in different task situations" (p. 106). Morgan & Lassiter (1992) recommend this taxonomy as a guide for selecting team members on the basis of personality, and as a framework for designing investigations of the performance effects of personality in teams.

### ***Biographical Differences***

There is evidence to suggest that biographical variables such as age, gender, race, sex, and socio-cultural background, among others, are important factors in the performance of teams (e.g., Shaw, 1976). McGrath and Altman (1966) have reported that factors such as age, gender, and education level, among others, are predictive of team performance, and Shaw (1976) has reported that gender-mixed groups tended to be more conforming and spend more time and effort on interpersonal issues than on task-relevant behaviours. Members of non-mixed teams, by contrast, tended to be more task-oriented, individualistic, and competitive (Kent & McGrath, 1969; Wyer & Malinowski, 1972). Evidence also exists to suggest that the chronological age of team members may impact on team performance (McGrath & Altman, 1966). When generalized to teams, findings on the effects of aging on individuals suggest that younger teams will perform better than older teams on tasks requiring sensory/perceptual sensitivity, speed of responding, fine motor responding, or complex cognitive processing. Additionally, teams that are homogenous in age are more likely both to interact among themselves and to perform more efficiently than are teams that are heterogenous with respect to age (Morgan & Lassiter, 1992).

### ***Ability Differences***

A third category of individual-difference variables that impact on team performance includes general and task-related abilities of members. Laughlin, Branch, and Johnson (1969) found that teams that were heterogeneous in ability performed better than homogenous teams on intelligence tests. Tziner and Eden (1985), in summarizing the results of prior research, noted

military aircraft, to lend itself to an autocratic style of leadership with inherent motivational effects similar to those found by Lewin and his colleagues (Swezey, 1992).

### **Group Homogeneity and Heterogeneity**

Team makeup appears to bear some influence on performance. Compatibility is an important factor when considering team composition and its relationship to performance. It is not uncommon for high-ability teams that contain incompatible members to experience difficulty in maintaining effective communications and interactions among members and, consequently, collateral difficulty in attaining goals (Bass, 1982). Indeed, Gunderson and Ryman (1967) have indicated that team makeup (which includes homogeneity) is related to performance. Issues of team homogeneity and heterogeneity embrace such factors as personality differences, biographical differences, and individual differences in abilities.

### **Personality Differences**

Personality is one of the individual characteristics influencing team characteristics and work structure, as indicated in the model of team effectiveness presented in Figure 1, and is a factor involved in the homogeneity or heterogeneity of a team. The magnitude of the role that personality characteristics play with regard to team performance is, however, a contentious point (Morgan & Lassiter, 1992). Some researchers have argued that findings on the subject have been inconclusive (Kahan et al., 1985). According to Morgan and Lassiter (1992), this position is based on the notion that personality traits represent constructs that are too broad to be of use in predicting specific team performance. For example, in Butler and Burr's (1980) investigation of locus of control personality types in military teams, only one of the three personality types examined was found to be related to performance, and only weakly at that. Other research has shown that the combination of personalities within a team can exert an influence on a team's performance (Driskell et al., 1987; Hackman & Morris, 1975). Schultz (1955), for instance, found that more productive teams were homogenous with respect to several personality traits (dependence, assertiveness, and personalness). Research by Helmreich (1984, 1987) and by Chidester (1987) has indicated that attitudes and co-ordination behaviours among members of aircraft crews may be predicted from personality measures.

(h) the nature and sequencing of performance feedback provided to members (Swezey et al., 1994).

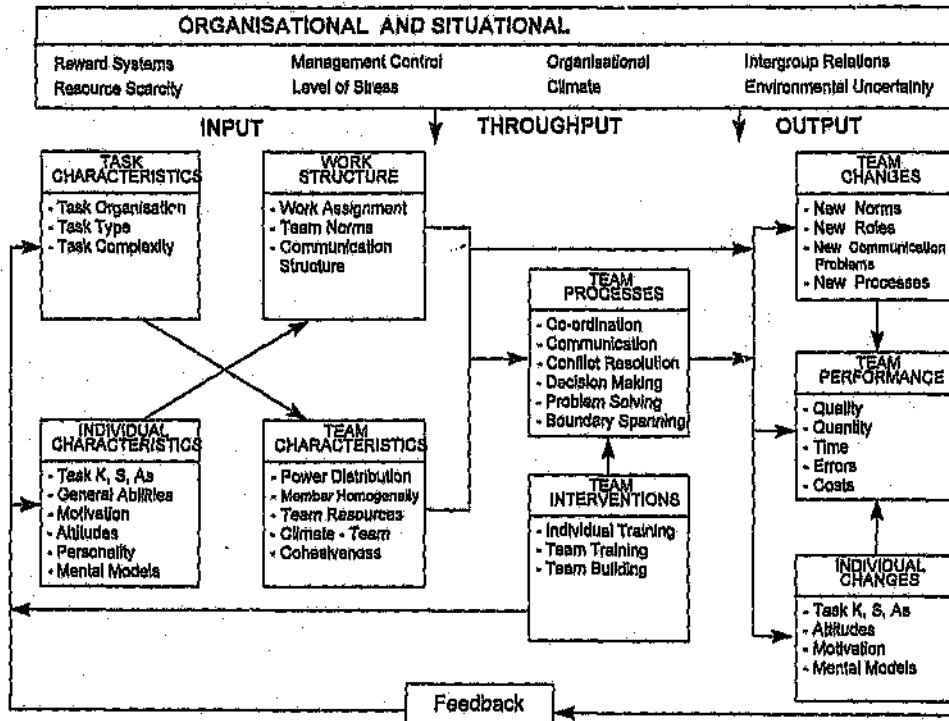
A brief overview of some of the research examining these characteristics follows.

### **Group Structure/Leadership**

Power distribution within a team usually relates to the team's hierarchical structure. (Nlewa et al., 1978). From the leadership literature, two dimensions can be identified that appear to produce substantial effects on team performance. One is autocratic versus democratic leadership. Generally, teams with autocratic leaders perform better than teams with democratic leaders, while members of democratic teams tend to react more positively to their team (Morgan & Lassiter, 1992). A classic study that provides such group motivation data was conducted by Lewin, Lippett, & White (1939) and examined the effects of power distribution on performance. A field experiment was performed on clubs of 10-year-old boys, exposing them to three different styles of adult leaders: autocratic, democratic, and laissez-faire. Members of the autocratic group demonstrated the highest short-term productivity while the democratic group scored highest for motivation as measured by continued work after the leader had departed.

Another leadership dimension that appears to affect team performance is the social distance between the leader and other team members (Kahan, Webb, Shavelson, & Stolzenberg, 1985). Teams with greater social distance between leaders and followers usually perform better than teams where the social distance is smaller. In addition to the constructs of team leadership and social distance, rank structure within a team has both motivational and performance implications. Different rank structures impose different interaction requirements upon team members which, in turn, may affect team performance as a whole (Morgan & Lassiter, 1992). Foushee and Helmreich (1988), for instance, found team role structure to be a powerful indicator of aircraft crew interaction. The ingrained chain of command within a cockpit may present a significant communication barrier for crew members who are often reluctant to question superiors or to assume control of the aircraft in emergency situations (Foushee & Helmreich, 1988). Potential exists for the rank structure present in cockpit crews, especially in

Figure 1: Team Effectiveness Model (from Tannenbaum, Beard, and Sales, 1992)



### General Characteristics Affecting Teamwork

Several characteristics of teams can be important for understanding their effectiveness, according to Tannenbaum et al. (1992). These factors include the team's

- (a) structure;
- (b) homogeneity and/or heterogeneity;
- (c) cohesiveness (i.e., its sense of "teamness");
- (d) size;
- (e) the characteristics of its task (i.e., task difficulty);
- (f) the organizational context and environment in which it operates;
- (g) the presence of potential evaluators; and

3. Environmental-level factors: the nature of the task, the level of environmental stress, and reward structure.

Figure 1 presents a recent model of team effectiveness. Included as inputs to the model, among others, are Driskell et al's three input factors. In this model, team performance is the outcome of dynamic processes reflected in the co-ordination and communication that teams develop over time (Salas et al., 1992). It should be noted that in the model motivation appears as both an input and output. On the input side, motivation is one of the individual characteristics that influence team characteristics and work structure. On the output side, motivation is one of the individual changes that influences team performance. The team's performance serves as feedback affecting individual and task characteristics. According to Hackman (1987), teams will evaluate their performance as they work. These evaluations ultimately affect team processes and, in turn, influence future team performance.

teams, each consisting of eight to twelve members. They concluded that it is possible to discriminate the more effective from the less effective teams on the basis of type, frequency, and relationship of observable behaviours. More effective teams displayed more intra-team reinforcement behaviours – characterized by thanking other members for correcting errors and praising work well done. According to McCallum et al. (1989), these behaviours may have fostered a sense of task competency among team members. These findings are consistent with Hackman and Walton's (1986) suggestion that providing reinforcement for good task performance, and giving assistance to members, lead to effective task performance.

Effective teams also tended to exhibit intra-team monitoring behaviours. Specifically, effective teams exhibited increased levels of communication and co-operative behaviours oriented toward detection and acknowledgment of errors (McCallum et al., 1989). Oser et al. (1989) extended the work of McCallum et al (1989). Again, their purpose was to identify critical team behaviours that can be used to differentiate more effective from less effective teams. Their results provided additional support for the findings discussed above. One of the critical team behaviours they identified was team reinforcement. Team reinforcement refers to the motivational and reinforcing statements made between team members. Effective teams had members who praised one another for a job well done, made positive statements to motivate each other, and thanked others for catching mistakes (Oser et al., 1989).

### ***A Model of Team Effectiveness***

From the preceding review of the research on teams, it is clear that the issues of team performance and effectiveness are important ones. Team effectiveness, however, differs vastly from individual effectiveness (e.g., Yetton & Bottger, 1982). Three input factors that may define a team's performance potential have been identified by Driskell et al. (1987, p. 95):

1. Individual-level factors: member skills, knowledge, personalities, and status characteristics.
2. Group-level factors: group size, group structure, group norms, and cohesiveness.

Hackman & Oldham, 1976). The quality of the empirical research supporting these assertions has, however, often been called into question (Lawler, 1971; Pasmore, Francis, & Haldeman, 1982; Wall, Kemp, Jackson, & Clegg, 1986), and a major longitudinal study of autonomous work groups (Wall et al, 1986) has failed to support fully claims of positive attitudinal and behavioural outcomes. Although that study found clear links between employee perceptions of work group autonomy and intrinsic job satisfaction, it was also found that the operation of autonomous work groups "did not demonstrably affect reported levels of job motivation, organisational commitment, mental health, work performance, and voluntary labour turnover" (Wall et al., 1986).

Self-managing teams are hypothesised to be effective and contribute to employee quality of work life for two major reasons. Firstly, they permit employee self-regulation or self-control over changing conditions facing the group. The sociotechnical perspective emphasises the structural properties of self-managing teams that enable employees to control key sources of performance variance (Cummings, 1978; Susman, 1976), while social learning theory indicates that self-managing teams encourage self-regulation through cognitive and behavioural mechanisms, such as self goal setting (Manz & Sims, 1987). Secondly, the work and organisational designs for self-managing teams are motivating. Work high in task variety, autonomy, identity, significance, and feedback foster internal work motivation which, in turn, leads to high performance and satisfaction (Hackman & Oldham, 1975). Organisations help to motivate team members to perform well by sharing power and reward with them (Lawler, 1986; Hackman, 1987).

Several studies (McCallum, Oser, Morgan & Salas, 1989; Oser, McCallum, Salas & Morgan, 1989) have attempted to identify behavioural constituents of teams and the effects of team evolution and maturation over time. The basis for these studies lies in the notion that successful teams exhibit specific interaction, communication, and co-ordination behaviours that enhance performance, whereas less successful teams display different types of specific behaviours. McCallum et al. (1989) analyzed critical team behaviors from a sample of 13

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d) The groups should have the authority, materials, and equipment necessary to perform their jobs, and the feedback required to evaluate their performance.

receive performance feedback on both individual and team levels (Matsui, Kakuyama, & Onglatco, 1987), and the provision of team feedback by itself can be dangerous when the good performance of one team member can compensate for the poor performance of a teammate (Salas et al., 1992). Members performing below their individual goal level who receive only team feedback may not attempt to improve their performance if the team is succeeding. Alternatively, individuals performing satisfactorily with respect to their individual goals who receive only individual level feedback may not improve if their group is falling.

### ***Research On Team Motivation***

As mentioned earlier, much theory and research on motivation has focused on the individual, while there is a dearth of theory and research on team motivation. One of the most useful theories is provided by Katz and Kahn (1978).

#### **Theoretical Research of Katz and Kahn**

Grounding their research in the field of social psychology Katz and Kahn (1978) have identified three types of motivational patterns or frameworks in teams: rule enforcement, external rewards, and internalised motivation. In the case of *rule enforcement*, team members obey rules because they arise from legitimate sources of authority and can be enforced by legal sanctions. Rule compliance causes the acceptance of legitimate edicts and regulations to be of value within the team (Katz & Kahn, 1978). Here motivation bears a limited relationship to the activity being performed, since legal bases are notoriously deficient in affecting performance beyond narrow role prescriptions for quantity and quality (Katz & Kahn, 1978). Further, the potential exists for rules to become more important than the goals they were designed to accomplish, causing members to follow the rules for the sake of the rules themselves (Hall, 1991). The members in such a system may become increasingly unable to operate on their own initiative. In such cases, it is unlikely that individuals within a team will perform above and beyond the call of duty (Hall, 1991).

Within the *external rewards framework*, incentives are typically linked to desired behaviours (Katz & Kahn, 1978) and actions become instrumental in achieving external rewards. This framework appears to share similarities with earlier instrumentality based models of individual

towards attaining the team goal and, as such, the team goal appears to have exerted a strong motivating affect. Although the team goal was unattainable for any individual, subjects in the team goal condition still strove toward it, even after having accomplished individual goals.

Another effect of team goals can be found in an examination of what occurs when a group fails to achieve its goals. In particular, responses to failure in groups tend to be the opposite of those usually found with individuals (Ilgen et al., 1987). Zander, Forward, and Albert (1969) examined team member attitudes as a function of the success of the team and found that ineffective teams continually set goals higher than previous performance indicated they should.

### **The role of feedback in goal-driven performance**

As is evident from this discussion, effects of performance goals on individuals are well documented. When individuals hold specific goals, performance tends to be higher than when these goals are absent (Locke et al., 1981; Locke, 1994). Further, knowledge of results (i.e. feedback) plays an important role in goal-setting. Just as feedback is crucial to individual goal-setting, so it is when goal-setting is applied to teams.

Performance goals may act to structure work situations by making it possible for individuals to receive feedback about their performance relative to their goal (Ilgen, Fisher, & Taylor, 1979). This feedback may serve as a source of accomplishment and may create other effects that are interpreted as being beneficial (Ilgen et al., 1987). Indeed, Nadler (1979) has noted that team feedback provides motivational effects which influence the effort expended by team members. The comparison between the team goal and team performance feedback, may influence members' cognitive processes which, in turn, impact on behaviour (O'Leary-Kelly, undated). According to O'Leary-Kelly, individual team members may engage in social comparison aimed at measuring their own performance levels against those of other team members in order to interpret the personal implications of team feedback.

There are caveats, however, when it comes to examining the motivational effects of feedback in team situations. According to Salas et al. (1992), team level feedback provides little direct information about the quality of individual performance. It is important for team members to

exist between team and individual goals, as well as among the goals of individual team members.

The motivational effects of goals on teams may also differ from the impact of goals on individuals. In teams, goals affect individual as well as team-level phenomena (Ilgen et al., 1987). Factors such as size, social pressure, and structure may also exert an influence on the motivational properties of goals.

Notwithstanding these co-varying factors influencing the effect of goals on team motivation, overall research in the area of goal-setting appears to provide an opportunity for generalization from individual to team motivation. To reiterate, key ideas can be highlighted. Goals serve two motivational purposes. Firstly, they rouse people to action. That is, they influence an individual's willingness to invest time and effort in an attempt to accomplish a specific goal. Secondly, they serve to channel an individual's time and energy in a particular direction.

The general finding with regard to goals and performance can be viewed in terms of goal specificity. The more difficult and specific a goal is, the greater the motivational impact. Motivational effects of goals, however, appear to be moderated by task complexity. With a simple task, the energizing function of goals is of primary importance (Ilgen et al., 1987). In this case, difficult goals are more beneficial. On complex tasks, where task methods are ambiguous, difficult goals may hinder performance (Ilgen et al., 1987). In this case, goal specificity becomes critical.

Goal perceptions of individual team members are important to consider in light of the fact that goal perceptions of individuals as team members may be different to those of individuals working alone because of the presence of a group goal (Ilgen et al., 1987). A study by Matsui, Imaizumi, Onglatco, and Kakuyama (1987), for instance, examined the effects of differing perceptions on performance. Matsui et al. (1987) had subjects work alone under one of two experimental conditions. In one, subjects had an individual goal. In the other, in addition to an individual goal, each subject had an assigned partner and a team goal to be attained with that partner. Matsui et al. (1987) found that individuals in teams performed better than those working in isolation. Individuals with team goals perceived their individual goal as one step

Herzberg, 1966; Locke, 1994; Maslow, 1943; Vroom, 1964), certain aspects of goal-setting theory (e.g., Locke, 1968; Locke, 1994) may be applicable to the issue of team motivation (Swezey et al, 1994). Perhaps some insight into this issue lies in the examining of various complexities involved in motivating both individuals and teams in the context of goal-setting theory.

According to Locke, Shaw, Saari, and Latham (1981), a goal is "what an individual is trying to accomplish; it is the object or aim of an action" (p. 126). Goals essentially represent standards of behaviour (Ilgen, Shapiro, Salas, & Weiss, 1987). Research on the effects of goals on individual performance has shown that goal specificity and difficulty have a motivational impact. In particular, as Ilgen et al. (1987) point out, goals that are challenging and specific, lead to higher performance than those that are not. Ilgen et al. (1987) also indicate that goals serve two motivational purposes at the individual level. Firstly, they stir the person to action. In other words, they serve to influence a person's willingness to invest time and effort in an attempt to accomplish the task at hand. Secondly, they serve to guide time and effort in a particular direction. At the individual level, it is clear to whom a goal applies. The individual typically is assigned, or participates in defining, a goal, and then proceeds to accomplish that goal.

At group level, however, the question as to whom the goal applies, is less clear (Ilgen et al., 1987). The goals in question may apply to several members of a team. Further, goals in team settings add at least three levels of complexity when compared to goals for individuals (Ilgen et al., 1987). Firstly, the issue of goals for multiple individuals needs to be addressed. At least two sets of goals are present: the overall goals of the team, and the goals of the individuals who make up the team. Secondly, the source of the goals is more complex. In the case of an individual, goals could originate from the individual, or they could be assigned by an outside agent (i.e., management). Both sources also exist in a team setting although individual members may not share the same goals as the team. Conflict and disagreement can result, which does not pose a problem at the individual level. Finally, multiple interdependencies

motivation is assumed to be good and vice versa. Kreitner and Kinicki (1989) take a different stance, however, and propose the following formula for performance which, they maintain, places motivation in proper perspective:

*Performance = Level of ability x Level of skill x Motivation x Knowledge about how to complete the task x Facilitating and Inhibiting conditions not under the individual's control*

In this context motivation is viewed as a necessary but insufficient contributor to job performance (Kreitner & Kinicki, 1989).

A fundamental question to address with regard to motivating teams (as opposed to individuals) concerns the nature of the term *team*. The failure of the theoretical literature to address this question adequately has created confusion and prevented the systematic accumulation of knowledge on the subject (Salas, et al, 1992). Even after 50 years of research on the subject of teams, few principles and guidelines are available for composing or managing teams (Swezey & Salas, 1992), for distinguishing good and poor teams (Driskel, Hogan, & Salas, 1987), or evaluating teams (O'Neill, Baker, & Kazlauskas, 1992).

### ***Individual Versus Team Motivation***

McIntyre (1988) provides input to an understanding of what team motivation is. Team motivation refers to the extra-task characteristics of the team that make it competent, including team spirit, leadership, interpersonal skill, communication skill, work performance norms, values, and other attributes that serve to facilitate or inhibit team performance. This makes the empirical measurement of team motivation particularly difficult. Clearly, many of these characteristics would result in behaviours which can be observed, but, as already highlighted, inferring motives from behaviours is problematic.

A major issue of interest to this study is the difference between team motivation and individual motivation. In line with Swezey et al's (1994) suggestion, however, understanding of this difference proves particularly elusive. Although most theories of motivation attempt to explain the motivational process at the individual level (e.g., Alderfer, 1969, 1972; Graham, 1994;

## ***Theories of Individual Work Motivation***

Notwithstanding the inherent difficulty in appraising motivation, understanding the nature of the concept has been of keen interest to students of human behaviour for centuries. The Greek philosopher Epicurus, for instance, proposed the hedonistic view that people are motivated to seek pleasure and avoid pain, a position which, according to Franken (1982), continues to be the cornerstone for various current theories of human motivation. In the 1930s and 1940s the study of human motivation attracted a great deal of interest among psychologists, resulting in the emergence of a variety of theories, including need-based conceptualizations (e.g., Maslow, 1943), and cognitive formulations (e.g., Lewin, 1938; Tolman, 1932), among many others. Later, in the 1950s and 1960s, psychologists began to focus on the role of motivation in the work place, specifically in the areas of job satisfaction and job performance, resulting in a variety of equity-based (e.g., Adams, 1965), instrumentality-based (e.g., Porter & Lawler, 1968; Vroom, 1964), and goal-setting (e.g., Locke & Latham 1968) orientations. Much recent work has attempted to co-ordinate various theories of motivation by placing an emphasis on the diverse effects of goals (e.g., Graham, 1994; Kanfer, 1990; Locke, 1994).

Work motivation theories fall into one of two categories - content and process theories. Historically, content theories emerged first, and specify the correlates of motivated behaviour, i.e. states, feelings or attitudes associated with motivated behaviour as described by Maslow and Herzberg. Process theories, by contrast, concentrate on variables predicting work behaviour. Valence-expectancy theory, organisational behaviour modification, and goal setting (to a lesser extent) typify this approach. In brief as Nicholson (1981) states, content theories are concerned with *what* behaviours are motivated, while process theories focus on *how* behaviour is motivated.

## ***The Link between Motivation and Performance in Individuals***

Within the parameters of this study, motivation is limited to how an individual's perception of his own motivation is linked to the productivity/performance of the team to which he belongs. To reiterate, motivation must be inferred from observed behaviour. All too often, motivation and performance are assumed to be one and the same. Thus, when performance is good,

Table 2: Definitions of Work Motivation.

Definitions
... the contemporary (immediate) influences on the direction, vigour, and persistence of action (Atkinson, 1964).
... how behaviour gets started, is energised, is sustained, is directed, is stopped, and what kind of subjective reaction is present in the organism while all this is going on (Jones, 1955).
... a process governing choice made by persons or lower organisms among alternative forms of voluntary activity (Lewin, 1964).
... motivation has to do with a set of independent/dependent variable relationships that explain the direction, amplitude, and persistence of an individual's behaviour, holding constant the effects of aptitude, skill, and understanding of the task, and the constraints operating in the environment (Campbell & Pritchard, 1976).
... Internal work motivation may be defined as the degree to which an employee is self-motivated to perform effectively. It refers to the extent to which he or she experiences positive feelings when doing well and negative reactions when working poorly (Cook et al., 1981).
... Motivation represents "those psychological processes that cause the arousal, direction, and persistence of voluntary actions that are goal directed" (Mitchell, 1982).

A number of worthwhile definitions (presented in Table 2) have been selected from the literature and these appear to have three common denominators which may be said to characterise the phenomenon of motivation: what energises human behaviour; what directs or channels such behaviour; and how this behaviour is maintained or sustained. The difficulty in understanding motivation is highlighted by each of these characteristics - that is, that motives must be inferred from observed behaviour. Expanding this point, Hilgard & Atkinson (1967) have identified at least five reasons why this is difficult:

1. any single act may express several motives,
2. motives may appear in disguised forms,
3. several motives may be expressed through similar or identical acts,
4. similar motives may be expressed in different behaviour, and
5. cultural and personal variations may significantly moderate the modes of expression of certain motives.

Like any other theory of applied social science, a theory of work motivation must account for the control and prediction of behaviour (Lawler, 1973), and fulfil three criteria :

1. It must account for the phenomenon of voluntary behaviour being initiated, in other words, it should identify the energisers of voluntary work behaviour.
2. It must explain how human behaviour is channelled in a particular direction. In this respect, a theory of work motivation would obviously need to predict how effort is channelled in a constructive direction.
3. It must account for the maintenance of work-related behaviour (Steers & Porter, 1979).

The measurement of motivation is hampered by the fact that motivation itself is not directly observable. As a result, motivational processes can only be inferred based on behavioural observations. Attempting to delineate motivation involves concern with the question of what arouses and energizes behaviour. The direction of behaviour, the intensity of action, and the persistence of behaviours over time provide raw data from which inferences about motivation can be made (Kanfer, 1990; Vinacke, 1982).

### ***Towards defining motivation***

Before discussing motivation and its effects on performance, an understanding of what 'motivation' means is necessary. The term "motivation" was originally derived from the Latin word *movere*, which means "to move." As a definition, however, this single word is obviously inadequate for the purposes of this study. Vroom (1964) explains motivation as referring to the intra- and inter-individual variabilities in behaviour that are *not* attributable to differences in ability, or to environmental demands, that coerce or force action. Vroom (1964) has further pointed out, however, that this statement is insufficient as a definition because it fails to specify what is involved in motivation.

factors, a full understanding of work motivation is crucial to obtaining maximal performance.

3. Attempts at classifying individuals in terms of demographic characteristics which may relate to performance, such as one's rate of advancement (Barling & Neill, 1976) have not contributed much to the understanding, prediction or control of work performance.
4. The impact of mechanizing the work force. Although mechanization was supposed to revolutionise productivity, it reinforced the role of individual behaviour in productivity.

Most of the prevailing theories of work performance, however, are concerned with individual motivation. They prescribe various techniques intended to stimulate, reinforce, or lure individuals into working harder. Little is said about the individual's limits of task ability, predisposition for working hard, or the general energy or activity level of the employee. Somewhat naively, existing theories maintain that performance is under the complete control of the individual. Even though there are major individual differences affecting the quantity or quality of work produced, it has been assumed that if the employee really wants to perform better, his performance will naturally improve (Staw, 1986).

Performance may not be restricted merely by the individual's level of ability and effort, however. Jobs themselves may be designed so that performance is not under the control of the individual, regardless of ability or effort. Certainly, there is an awareness of the fact that an assembly line worker's output is more a product of the speed of the line than any personal preference. In administrative jobs, too, performance may be constrained by the work cycle or technical procedures. There may be many employees with interlocking tasks so that an increase in the performance of one employee does not mean much if several tasks must be completed sequentially or simultaneously in order to improve productivity (Staw, 1986). Thus, the nature of the organisation, combined with the abilities and efforts of individuals to manoeuvre within the organisation, may serve to constrain changes in individual performance (Staw, 1986).

## CHAPTER 2

# WORK MOTIVATION

### *Introduction*

A key reason for the attention directed at motivation centres around the pervasive nature of the concept itself. Motivation represents a highly complex phenomenon that affects, and is affected by, a multitude of factors in the organizational milieu (Steers & Porter, 1991).

Given the ever-tightening constraints placed on organizations by governmental regulations, increased foreign and domestic competition, citizens' lobbies, and the like, management has had to look for new mechanisms to increase - and, in some cases, just to maintain - its level of organizational effectiveness and efficiency. Much of the "slack" that organizations could depend upon in the past has disappeared in the face of these new environmental constraints. Because of this, management must ensure that it is deriving full potential benefit from those resources - including human resources - that it has at its disposal. Thus, organisational effectiveness becomes to some degree a question of management's ability to motivate its employees to direct at least a reasonable effort towards the goals of the organisation (Steers & Porter, 1991).

Research into this subject abounds. In fact, it is estimated that work motivation comprises 25% of the industrial psychology literature (Staw, 1986). Barling (1983) proposes a number of reasons why work motivation theories are so important:

1. Even though the managerial function is not synonymous with work motivation, motivation nonetheless remains a crucial determinant of work performance and productivity. Lawler (1973) states that: work performance =  $f(x)$  (motivation  $\times$  ability).
2. The increasing restraints placed on the organisation in the form of union activities, government legislation and social pressures. Given the combined effects of these

The greatest concern regarding the research presented is highlighted by Pasmore et al. (1982). They comment that reports on self-directed work teams "have tended to report on successful projects almost exclusively, leaving the literature almost void of data concerning the potential pitfalls of the sociotechnical approach" (pp. 1197-1198). In addition, even with successful projects it is not always clear whether other variables were measured but not reported because the data were disappointing.

### ***Teams and Motivation***

Although there is a realization that teams may, in some situations, perform better than individuals on specific tasks (Miller, 1991), there is also some evidence to suggest that work team problems can impede performance (DeMeuse & Liebowitz, 1981). In light of the increasing importance of teams to organizations throughout the world, an improved understanding of how teams function is essential. Accordingly, the motivation of teams with regard to their performance and effectiveness has been identified as an important avenue of research, especially given the relationships identified between individual motivation and performance.

and the difficulty to accurately isolate individual contributions determines that the measurement of productivity must be group based (Chowdhury, 1986; Schoeder, Anderson, & Scudder, 1985; Slnk, 1986; Tuttle & Romanowski, 1985). Although some suggestions are offered (Cohen-Rosenthal, 1985; Oden, 1986; Riggs, 1986; Rosenberg & Rosenstein, 1980; Slnk et al., 1984), and organisational effectiveness has been measured in several different ways, there is no universal system.

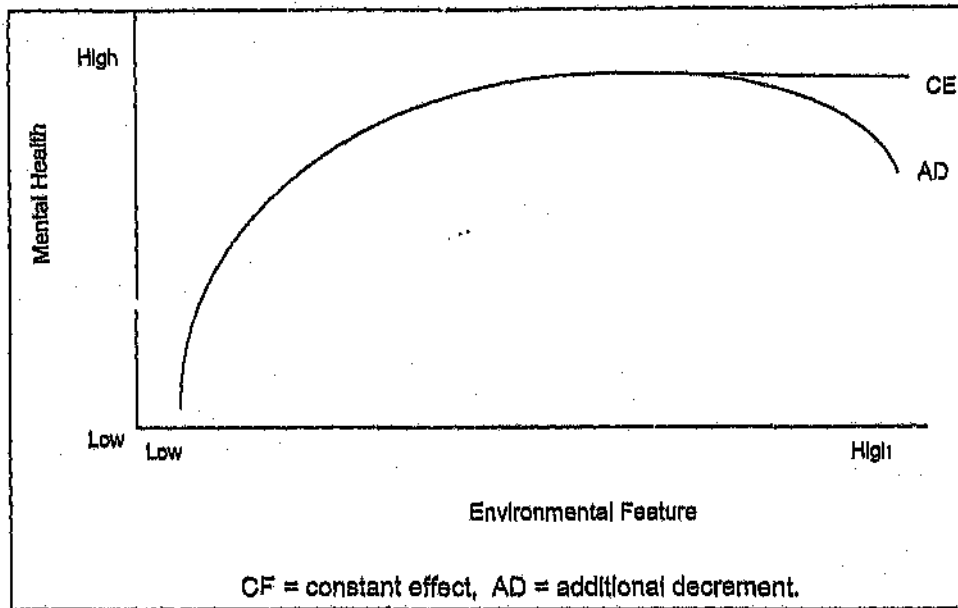
Specifically, with regard to the issue of teamwork and performance, the results of the research reviewed indicate that the implementation of teams does not necessarily always lead to improvements in performance and attitudes. However, there are a number of reasons why this may be the case:

1. The internal dynamics of the team.
2. External constraints on the team.
3. The environment in which the team operates.
4. The amount of autonomy the team has.
5. The measurement of the team's performance (as highlighted above).

Pasmore et al. (1982) noted that although self-directed work teams were employed by a majority of the studies, many characteristics of these teams were not incorporated. For example, feedback on performance, providing interaction with customers, providing managerial information to team members, allowing team members to choose their peers, and allowing team members to equip themselves were mentioned as features in fewer than 10% of the studies. It appears, then, that many of the self-directed teams may not have experienced extensive autonomy.

Clearly there are a multitude of factors which affect and are affected by the team's performance and attitudes, a notion which provides further support to a multidimensional model of team effectiveness such as that presented in Figure 1.

Figure 2: Schematic Representation of Two Assumed Relationships between Environmental Features and Mental Health



In Warr's opinion, there are, however, certain environmental attributes that will not cause harm even in overabundance. These are called CE factors and are analogous to the harmless vitamins C and E. Other variables, called AD factors, will cause a decrease in emotional well-being. Here Warr draws a parallel with vitamins A and D which may cause toxic reactions in the event of overdosage. The precise effect of each variable is listed in Table 4.

Few theories propose that too much of a variable may be problematic. For instance, Herzberg, Mausner & Snyderman (1959) implied that an excess of motivator or hygiene factors has no effect beyond some critical value (Landy, 1986), while Instrumentality Theory proposes that greater rewards yield more effort. Warr's theory also differs from Equity Theory which states that individuals compare their inputs and outputs (and productivity rewards) to those of others. If an individual's outputs or rewards are disproportionate to those of co-workers relative to the efforts they have made, dissonance or tension will result. Warr (1987) has a completely different approach to emotional distress. His suggestion that particular variables cause "toxic reactions" contrasts with Equity Theory which suggests that an imbalance causes tension (Landy, 1989).

diagrammatically represented in Figure 2. He believes that several work variables (listed in Table 4 below) cause differences in job satisfaction, similar to the way in which several vitamins acting together affect health (Warr, 1987 cited in Landy, 1989). Like vitamins, a minimum daily dosage of these variable is required.

*Table 4: Effects of work variables according to Warr's Vitamin Model.*

	<b>Variable</b>	<b>Effect</b>
High levels of CE variables	Money	Constant effect at high levels
	Physical security	Constant effect at high levels
	Valued social position	Constant effect at high levels
High levels of AD variables	Externally generated work	Overload; stress
	Variety	Low concentration and achievement
	Clarity	Little control or opportunity for development
	Control	Overload; stress
	Skill use	Overload; stress
	Interpersonal contact	Lack of personal control; overcrowding

Where Warr (1987), breaks with conventional thinking is in his suggestion that an overdose of some variables will lead to toxic reactions.

cognitions (beliefs) and affects (feelings). Not unreasonably, therefore, job satisfaction measures are assumed to reflect cognitions and affects in roughly equal proportion. In this context, further examination of Locke's definition should prove worthwhile. He states that job satisfaction is "a pleasurable or positive emotional state [*affect*] resulting from the appraisal [*cognition*] of one's job or job experiences." Similarly, Smith, Kendall, and Hullin (1969) regard job satisfaction as "feelings or affective responses to facets of the situation," but also "hypothesize that these feelings are associated with a perceived difference between what is expected as a fair return... and what is experienced..." (Smith, et al., 1976, p. 6). Both Locke (1976) and Smith et al. (1976) seem to imply that responses of job satisfaction directly reflect affects but, because cognitions are such a direct determinant of these feelings, both components of attitude are represented strongly in responses.

### ***Causes of Job Satisfaction***

Defined as partly an affective and partly an emotional response to various facets of one's job, job satisfaction cannot be viewed as a unitary concept. Rather, it is anticipated that different individuals will report different levels of satisfaction with different aspects of the job. It follows, then, that the causes of job satisfaction cannot be discovered solely in the job or in man, but appear to lie in the relationship between them (Locke, 1975). To date, attempts to determine the causes of job satisfaction have taken two basic forms. On the one hand, some scholars have sought to develop comprehensive models and theories of job satisfaction - frameworks for understanding not only which factors influence job satisfaction, but also why they exert such effects. On the other hand, certain researchers have adopted a more empirical approach, focusing primarily on the task of identifying variables responsible for positive or negative reactions towards work (Baron, 1986; Baron & Greenberg, 1988). A brief review of various approaches to understanding job satisfaction will provide some insight into the complexity of this seemingly simple concept.

### ***The Warr Vitamin Model***

Departing from conventional thinking, Warr (1987) proposes a theory of job satisfaction that is analagous to the way in which certain vitamins affect physical health. The theory is

As a starting point, Robbins' (1989, p.11) broad definition of the concept is useful. He states that

*"job satisfaction refers to an individual's general attitudes towards the job. A person with a high level of job satisfaction holds positive attitudes towards the job, while a person who is dissatisfied with his or her job holds negative attitudes about the job. When people speak of employee attitudes, more often than not, they mean job satisfaction".*

Of the definitions reviewed, however, Locke's (1976) would seem to be the most comprehensive. He notes that since job satisfaction is an emotional, affective response, the concept's meaning can only be discovered and understood by a process of introspection. Accordingly, job satisfaction is defined as

*"... the pleasurable emotional state resulting from the appraisal of one's job, as achieving or facilitating the achievement of one's job values. Job dissatisfaction is the unpleasant emotional state resulting from the appraisal of one's job as frustrating or blocking the attainment of one's job values or as entailing disvalues. Job satisfaction and dissatisfaction are a function of the perceived relationship between what one wants from one's job and what one perceives it as offering or entailing" (Locke, 1976, p. 1300).*

As an alternative Warr, Cook and Wall (1979) define job satisfaction as "the degree to which a person reports satisfaction with intrinsic and extrinsic features of the job". Job satisfaction is the extent to which individuals are satisfied with their jobs, Cook, Hepworth, Wall and Warr, (1981) and reflects a positive emotional state resulting from the perception of one's job as fulfilling (Locke, 1976). This notion of it being a perception as highlighted by Locke will receive further attention later in this chapter.

Almost by convention, the term "job satisfaction" and "job attitudes" are used interchangeably. Measures of job satisfaction are based on the techniques of attitude scale construction and psychologists (e.g., Herkowitz, 1980) have long defined attitude in terms of constituent

## CHAPTER 3

# JOB SATISFACTION

### *Introduction*

Job satisfaction as a construct has attracted more research than any other variable in the field of Organisational Behaviour. Interest in job satisfaction is inspired by the intuitive belief that if employees are satisfied there will be a concomitant satisfactory level of performance to the employer's benefit. Furthermore, a high level of interest is understandable considering the amount of time an individual devotes to work and the effects that feelings about the job have on all aspects of the individual's life. This viewpoint is immersed in a capitalist approach to business - the pursuit of the happy/productive worker could be viewed as an impossible dream from the Marxist perspective of inevitable worker-management conflict. Such a goal could also be seen as naïve from the traditional industrial relations view of outcomes being a product of necessary bargaining and compromise. Yet, from the psychological perspective, the pursuit of the happy/productive worker has seemed a worthwhile though difficult endeavour and one that might be achieved if our knowledge of work attitudes and behaviour is greatly increased.

In the ensuing discussion, existing definitions of job satisfaction will be outlined as a backdrop for examining the construct in more detail. In particular, research examining the relationship between job satisfaction and performance will be considered. In addition, theory which may explain this relationship in a team setting will be discussed.

### *Definitions of job satisfaction*

The concept 'job satisfaction' implies an individually-based attitude and, typically, the definitions provided in the literature convey this orientation. Although the focus in this study is job satisfaction as it pertains to teams, it is considered worthwhile to examine these definitions based on the premise that the individual may be influenced by the team in which he works.

functions proposed by Nye (1978), particularly the team motivational function, which involves defining a team's objectives and energizing the team towards those objectives.

The motivational effects of goals on teams has received considerable attention. The existence of a team goal in addition to individual goals may prove to be more motivating than the existence of individual goals alone. This motivational effect is further enhanced when failure to achieve a team goal occurs. Teams that fail to achieve a team goal will tend to set higher goals than would appear warranted based upon previous performance. With regard to goal-setting, however, a systematic model for looking at effects of goals in team settings is lacking (Ilgen et al., 1987). This may be due in part to the difficulty involved in obtaining and measuring team constructs (Dyer, 1984; Hall & Rizzo, 1976). Recently, it has been suggested that the concept of shared mental models might be useful for the understanding and training of teamwork skills (Cannon-Bowers & Salas, 1990; Cannon-Bowers et al., 1991). The greater the accuracy and overlap among the mental models of team members, the more likely team members will predict, adapt, and co-ordinate with one another (Salas et al., 1992). This construct may be important in light of the team reinforcement behaviours demonstrated by effective teams (McCallum et al., 1989; Oser et al., 1989). The shared mental model construct may be useful as an organizing concept for understanding team processes, however, considerably more work needs to be done before this construct can be applied to training teamwork behaviours (Salas et al., 1992).

Thus, it may be concluded that empirical research covering motivation at the team level is scant and a gap exists for further investigation. Additionally, although the individual has been the focus of much research, little theory exists explaining the role and nature of team motivation. Given the increasing reliance on work groups and teams by organizations and industries, theories addressing the motivation of teams need to be developed and investigated.

## **Conclusion**

Team motivation, and the various factors which affect it, has been the focus of this chapter. The topic is complex because a considerable variety of motivational theories and definitions of teams exist, a problem that is compounded by the fact that the majority of motivational theories deal with individual, rather than team or group motivation. Differences between individual and team motivation were illustrated via goal-setting theory. The utility and functions of goals appear to be generalizable from individuals to teams. Goals in team settings are considerably more complex than those for individuals. Issues involving multiple goals, internal conflict and disagreement, and interdependencies among team members contribute to this complexity. Factors such as team size, social pressure, and structure may also have an impact on the motivational properties of goals. Potential motivation losses can occur due to social loafing and free-riding phenomena. Team norms were shown to have a motivational impact on team members. The norms of a team can both foster and inhibit individual performance. The likelihood of social loafing and free-riding behaviours are affected by the size of a team. In large teams, social pressure to perform is diffused, thus potentially reducing an individual's motivation to perform.

Empirical research on this subject has addressed mainly the motivation of individuals within teams. A review of this research, however, indicates the possible impact of such factors as team structure, homogeneity/heterogeneity (with regard to biographical, personality, and ability differences), and cohesiveness on motivation. Likewise, the size of a team, the characteristics of its task, the culture/climate of the organization, and the presence of potential evaluators may bear an influence on team motivation. In addition, feedback and its sequencing have been shown to impact on team motivation.

Research on teamwork has identified behaviours that differentiate more effective teams from less effective teams. Of particular interest from a motivational perspective is the idea of team reinforcement behaviours. These behaviours refer to the motivational and reinforcing statements made by team members. Team reinforcement behaviours are more prevalent in effective teams. These team reinforcement behaviours are compatible with the four team

Table 3: Examples of Team Motivation Guidelines (from Swezey & Salas, 1992).

#### Examples of Team Motivation Guidelines

Motivated teams will "stretch" themselves to achieve beyond what individuals, thinking about the capability of the team, might deem possible (Ilgen et al., 1987).

Team members who do not feel central to the team's success will not feel as satisfied as members who feel central to those successes (Ilgen et al., 1987).

Good team leaders tend to identify common factors that inhibit team member motivation (McIntyre, Morgan, Salas, & Glickman, 1988).

Enthusiasm and the "right" attitude are often viewed by instructors as the most important differences between good and poor teams (NATO, 1980).

Like-minded individual team members can often work together more easily, but are likely to be less creative. Members with diverse attitudes will generate more conflict, but will also more often hammer out more creative solutions (Bass, 1982).

Team members should be encouraged to show verbal and physical (i.e. verbal compliments and "pats on the back" ) signs of support for other members and the team as a whole (Morgan et al., 1986; Oser, McCallum, Salas, & Morgan, 1989).

Members of successful teams tend to praise the accomplishments of fellow teammates (Morgan et al., 1986).

Team members should be supportive of teammates when the latter make mistakes (Morgan et al., 1986).

Effective team members make positive statements to motivate the team (Oser et al., 1989).

of teammates will vary as a function of the individuals who comprise the team (Cannon-Bowers et al., 1991). Based on these expectations, a team member may alter his or her behaviour so that it is consistent with how he or she thinks the other team members will perform. Therefore, a team member's mental model of his team's tasks and operations could determine individual behaviour and team effectiveness (Tannenbaum et al., 1992). Consequently, mental models of team tasks and operations, by virtue of their ability to determine individual behaviour, can be seen as having motivational implications for the team.

### **Empirical Research**

Relatively little empirical research directly addresses the issue of team motivation. Much of the existing research is aimed at investigating the motivation of individuals within those teams or groups. Indeed, despite a substantial review of relevant literature, Swezey and Salas (1992) identified only a few prescriptive guidelines to team motivation, several of which appear in Table 3. These guidelines were originally compiled for use in response to a scarcity of behavioural guidance recommendations developing and modelling team training programs and devices. Based on these guidelines, Swezey and Salas (1992) offer some concrete suggestions for motivating teams. They propose: (a) providing opportunities for each team member to take major responsibility for designing and directing a task-related activity that affects the entire team, (b) employing positive reinforcement techniques and developing a system of rewards for those who exhibit supportive behaviours towards teammates, and (c) establishing both homogeneous and heterogeneous groupings of team members for some teamwork activities (this provides team members with a chance to work with individuals of different capabilities and backgrounds).

### **Free-riding**

Closely related to social loafing is free-riding. In essence, the free-rider phenomenon explains social loafing as being a rationally or economically based decision to decrease one's effort. According to Penner and Craiger (1992), the mechanism that explains this behaviour is an individual's belief that since a team member is but a single part of a team (with several other people also working on the task), relatively little actual work needs to be done while still reaping the benefits of the team's performance. Other members of the team may find "carrying" the free-rider to be aversive and, as a result, may reduce their own contributions to the team rather than play the so-called "sucker role" (Kerr, 1983; Orbell & Dawes, 1981). Carrying the free-rider is repugnant because it violates a number of social norms (Orbell & Dawes, 1981), such as (a) the equity norm which calls for one's ratio of outcomes to inputs to be the same as other team members; (b) the norm of reciprocity, where one is obligated to reciprocate those contributions they have received and; (c) the norm of social responsibility where every member of the team is obligated to contribute to the team.

According to Kerr (1983), rather than play the sucker role, other team members may reduce their own efforts. Support for this "sucker effect" was found through laboratory experimentation (Kerr, 1983). Individuals who were lead to believe that their partner was able to perform the task but was consistently failing, reduced their effort and their performance subsequently dropped. From this it is clear that one consequence of free-riding is a negative motivational effect on other team members. This negative motivational impact may turn into a vicious, escalating cycle (Mulvey, Klein, & Sterling, 1991) with perceptions of free-riding causing individuals to reduce their efforts which, in turn, may lead to increased perceptions of free-riding and further reductions in team motivation and performance.

### **Mental models**

A final issue to be addressed in this chapter is the concept of mental models. Again, referring back to the model of team effectiveness illustrated in Figure 1, it is evident that mental models are subsumed under individual characteristics on the input side of the model and under individual change on the output side. According to Wickens (1984), mental models provide a source of the individual's expectations. In a team setting, one's expectations of the behaviour

of an immediate work group, an individual is motivated to perform at a sub-optimal level. Diving can take several potential forms. In one case, team norms may discourage performance excellence by any individual member (Penner & Craiger, 1992) and team members may tend to socialize their co-workers to this norm, punishing violators (Penner & Craiger, 1992). For example, a new employee may perform his task faster (out of sheer exuberance or a desire to look good) than the team norm permits. As a result, other team members may express disapproval in an attempt to get the new member to conform to existing production norms. In the other case, the team may determine whether or not excellent performance is acceptable for a particular member (Mullen & Baumeister, 1987). For instance, junior members may be influenced to underachieve by members with more seniority. In such a case, excellence in performance by junior members is not acceptable based on the group norms with senior members determining appropriate performance levels for lower status members.

### **Social Loafing**

The concepts of social loafing and free-riding are factors which affect team motivation negatively. The concept of social loafing derives from social impact theory (Latane, 1981) which describes a process by which the motives, behaviours, feelings, etc., of an individual are changed by the presence or actions of others in a social setting. According to this theory, the impact of social forces that impinge upon an individual is determined by the strength (i.e., status, rank, etc.), immediacy (i.e., closeness in time and space), and number of other individuals. As these factors increase, there is a corresponding increase in their social impact. As Penner and Craiger (1992) point out, when the size of a team increases, the social pressure on any one individual to perform well is diffused. As a result of this diffusion, motivation to perform well may also be reduced. Social loafing, then, refers to the tendency to decrease the amount of effort one expends on a task when one is a member of a team, in the absence of any explicit demands to decrease that effort (Latane, 1986; Penner & Craiger, 1992). This social loafing effect tends to increase as team size increases, and the consequent ability to identify any one particular member decreases (Jackson & Williams, 1986; Kerr, 1983; Kerr & Bruun, 1981; Latane, Williams, & Harkins, 1979).

motivation (e.g. Porter & Lawler, 1968; Vroom, 1964). Thus, the existence and nature of group and individual rewards can influence the level of co-operation or competition between team members, which in turn may also affect team effectiveness (Lawler, 1981; Pritchard, Jones, Roul, Stuebing, Ekeberg, 1988).

Finally, Katz and Kahn's *internalised motivation* framework addresses both intrinsic job satisfaction and the internalisation of team goals as part of an individual's value system. Within this framework, motivation is enhanced in two ways. Firstly, an individual is motivated through the satisfaction derived from role performance, for example, a doctor gains satisfaction from the knowledge that he or she is helping people. The intrinsic satisfaction one derives simply by performing can provide a potent source of motivation. Secondly, motivation may be enhanced through internalization of a team's goals.

*The goals of the group become incorporated as part of the individual's value system or conception of self. As a result, satisfactions accrue to the person from the expression of attitudes and behaviour reflecting his or her cherished beliefs and self-image. The reward is not so much a matter of social recognition or monetary advantage as of establishing one's self-identity, confirming one's notion of the sort of person one sees oneself to be, and expressing the values appropriate to this self-concept (Katz and Kahn, 1978, p. 407).*

The norms of a work group or team can have a motivating effect on individual members. Norms act as standards or guides for individual's behaviour and beliefs (Penner, 1986), and teams can establish norms for their members, as well as methods for encouraging compliance with these norms (Fleishman & Zaccaro, 1992; Hackman, 1976; Nieva et al., 1978; Penner & Cralger, 1992).

### **The Diving Phenomenon**

Norm-driven motivational effects, as already noted, may not necessarily facilitate the attainment of a team's goals. One clear example of this is the diving phenomenon described by Mullen and Baumeister (1987). Diving refers to a situation in which, because of the norms

Despite the reasonably convincing empirical evidence reviewed, researchers have continued to be fascinated with the satisfaction-performance hypothesis. As Gannon & Noon (1971) and Katzell & Yankelovich (1975) suggest, this probably derives from the discomforting discrepancy between the empirical record and the apparently strong intuitive belief among practitioners. A key argument against empirical evidence is that "performance" has been inadequately defined or measured and, in the context of this dissertation, it is considered worthwhile to review this alternative proposal.

### ***An Alternative Definition of 'Performance'***

Nearly two decades ago, Organ (1977) suggested that the discrepancy in the satisfaction-performance hypothesis lies in the various meanings that might be attached to the concept "performance." Conceivably, the practitioner ascribes multiple meanings to this term, including such non-productivity or extra-role dimensions as co-operation, informal modes of helping co-workers and superiors, and generalised tendencies toward compliance. Research measures of performance may not capture adequately the variance in some of these qualitative meanings adequately. Organ (1977) drew upon social psychological exchange theory (e.g., Blau, 1964) to offer a defensible rationale why job satisfaction might account for increased variance in informal helping and compliance than in more narrow measures of productivity or in-role performance.

Bateman and Organ (1983) used the term "citizenship behavior" to denote helpful, constructive gestures exhibited by organization members and valued or appreciated by officials, but not related directly to individual productivity. They cited two rationales, both of which could support conceptually a link between job satisfaction and individual citizenship behaviour. The first, drawn from social exchange concepts (e.g., Blau, 1964), suggests that individuals will feel bound by the norm of reciprocity when given resources, treatment, and opportunities that induce satisfaction. Furthermore, given the constraints exerted by technology, work flow, and individual skills on productivity, they frequently will choose to reciprocate in the form of such citizenship behaviours as co-operation, supporting the supervisor, helping behaviours, and gestures that enhance work unit reputation internal and

Oldham (1980) argue that satisfaction can be increased by improving a job in terms of its variety, identity, responsibility, feedback and significance. In the opposing camp are advocates of social information processing. These researchers argue that jobs are often ambiguous entities subject to multiple interpretations and perceptions (Salancik & Pfeffer, 1978). Advocates of social information processing have noted that the positive or negative labelling of a task can influence job attitude, and that important determinants of this labelling are the opinions of co-workers who voice positive or negative views of the work. These researchers have shown that it may be as easy to persuade workers that their jobs are interesting by influencing the perception of a job as it is to make objective changes in the work role (Staw, 1986).

The debate between job design and social information processing has produced two recent shifts in thinking about job attitudes. Firstly, organisational psychology now places greater emphasis on the role of cognition and subjective evaluation in the way people respond to jobs. This is probably helpful because, even though job conditions have generally been measured with perceptual scales, these perceptions are often confused with objective job conditions. It should be remembered that perceptions of job characteristics do not necessarily reflect reality, yet they can determine a response to that reality (Staw, 1986).

The second shift in thinking about job attitudes is a move towards situationalism, stressing how even slight alterations in job context can influence job perception. It is now believed that job attitudes may be influenced not only by the objective properties of the work, but also by subtle cues given off by co-workers or supervisors that the job is dull or interesting. Staw (1986) argues that this view is mistaken since it overstates the role of external influence in determining job attitudes (Staw, 1986). The reality may be that individuals are quite resistant to change efforts, with their attitudes arising more as a function of personal disposition than situational influence.

While the focus of this study is not on changing attitudes, the literature on this subject is useful for understanding the effects that team dynamics may have on the attitudes of team members.

## ***Research supporting the effect of teamwork on job satisfaction***

There is some research which has examined the effect of teamwork on job satisfaction and productivity. In particular, the Topeka plant (as introduced in Chapter 1) produced positive outcomes. Studies by Schrank (1974), Lawler, Jenkins, and Herline (1974), and Walton (1977) found high levels of worker participation, involvement, satisfaction, and substantial production savings. Lawler et al (1974) reported "the highest levels (of satisfaction and involvement) we have found in any organisation we have sampled" (reported in Walton, 1977, p. 423). Walton (1977) cited savings in "the neighbourhood of a million dollars annually, a figure significant in a plant with 100 or so personnel and involving a capital investment in the range of 10-15 million dollars" (p. 423). Walton (1982) reported that, through 1977-1981, productivity had improved every year except one, and product quality was consistently one of the best in the corporation. This research suggests that job attitudes can be changed.

## ***Changing Job Attitudes***

Although organisational psychologists have accepted the notion that job satisfaction and performance do not necessarily co-vary, they still consider job attitudes as something easily changeable. This "blank state" approach to job attitudes derives from prevailing psychological views of the individual as a creature who constantly appraises the work situation, evaluates the merits of the context, and formulates an attitude based on these conditions. As the work situation changes, individuals are thought to be sensitive to the shifts, adjusting their attitudes in a positive or negative direction. Given this approach to attitudes, it is easy to see why job satisfaction has been a common target of organisational change, and why attempts to redesign work have evolved as a principal mechanism for improving job satisfaction (Staw, 1986).

Currently, the major debate in the job design area concerns whether individuals are more sensitive to objective job conditions or social cues (Staw, 1986). In one camp are proponents of job redesign who propose that individuals are highly receptive to concrete efforts to improve working conditions. The research on effects of teamwork supports this camp. Hackman and

Table 5: Paths to the happy/productive worker

PATHS TO THE HAPPY/PRODUCTIVE WORKER	
Worker Participation	The Pursuit of Excellence
Supportive Leadership	Socio-Technic Systems
9-9 Systems	Organisational Commitment
Job Enrichment	High Performing Systems
Behaviour Modification	Theory Z
Goal Setting	Strong Culture

Staw (1986) suggests that none of the theories tabulated above have inherited the happy/productive worker hypothesis in the simple sense of believing that job satisfaction and performance generally co-vary in the world as it now exists. But these models all make either indirect or direct assumptions that it is possible to achieve a world where both satisfaction and performance will be present. Some of the theories focus on ways to increase job satisfaction, with the implicit assumption that performance will necessarily follow; some strive directly to increase performance, with the assumption that satisfaction will result; and some note that satisfaction and performance will be a joint product of implementing certain changes in the organisation.

### ***Causality between job satisfaction and productivity***

A point of concern in the satisfaction-productivity issue is the direction of the causal arrow. Most studies on the relationship used research designs that could not prove cause and effect. Studies that have controlled for this possibility indicate that a more valid conclusion is that productivity leads to satisfaction rather than the other way around (Greene, 1972; Lawler, 1973; Petty, McGee, & Cavender, 1984). Despite these generally negative conclusions by reviewers, investigations into the connection between these two variables explored various avenues. One area that has received much attention is the question of causality between satisfaction and performance (cf. Porter & Lawler, 1968; Organ, 1977; Schwab & Cummings, 1970; Siegel & Bowen, 1971).

hypothesis. In fact, over the last thirty years, a wide variety of theories have attempted to show how managers can reach the promised land of high satisfaction and productivity. The theories, shown in Table 5 below, constitute only an abbreviated list of recent attempts to reach this positive state.

Indeed, both management and union representatives generally endorse the notion that greater productivity would result if workers were more satisfied (Katzell & Yankelovich, 1975). Thus, the findings that these two variables are not highly correlated questions the assumptions implicit in most organisational programs and policies, research endeavours, and even in the expectations of those who review the satisfaction-performance literature (Iaffaldano & Muchinsky, 1985).

Katzell & Yankelovich, (1976) exemplify this implicit assumption in their review of policy-related satisfaction-performance research. Their intention was to determine how productivity and job satisfaction could be increased jointly. Although they conclude that this goal could not usually be achieved, they lament their failure to find strong satisfaction-performance linkages (Iaffaldano & Muchinsky, 1985):

*We wish we could announce that our search had been completely successful, that it had clearly disclosed the secret of motivating people so that they are both satisfied with their work and productive in it. Unfortunately ... the facts are still too incomplete and equivocal to permit that (Katzell & Yankelovich, 1976).*

It is almost as if the satisfaction-performance relation is itself what Chapman and Chapman (1969) called an illusory correlation, a perceived relation between two variables that are logically or intuitively thought to interrelate, but in fact do not. Although the possibility that future architects of organisational structure may develop methods of designing work that result simultaneously in high productivity and worker satisfaction should not be precluded, it may be concluded that such a covariant relation does not exist to any substantial degree in the literature published to date (Iaffaldano & Muchinsky, 1985). As Staw (1986) suggests, organisational psychologists have come to accept the argument that satisfaction and performance may relate to two entirely different individual decisions which he sees as decisions to participate and to produce.

Though psychologists have acknowledged the fact that satisfaction and performance are not tightly linked, this has not stopped them from pursuing the happy/productive worker

## ***Relationship between satisfaction and performance in research on individuals***

A review of the literature indicates that the elusive relationship between job satisfaction and job performance has intrigued organisational researchers for more than 60 years. Indeed, in their classic review of early literature in this area, Brayfield and Crockett (1955) credit Komhauser and Sharp's 1932 study as the initial investigation of attitudes and productivity in an industrial setting. Although the flurry of research on this topic has abated somewhat in recent years, the current literature continues to be peppered with reports of new theoretical and empirical developments. To keep pace with this ever-expanding volume of research, several summaries of the job satisfaction-job performance literature have appeared, both from an empirical perspective (Brayfield & Crockett, 1955; Herzberg, Mausner, Peterson & Capwell, 1957; Srivastva et al, 1975; Vroom, 1964; Fournet, Distefano & Dryer, 1986) and a theoretical orientation (Schwab & Cummings, 1970). These reviewers have attempted to reconcile the inconsistencies among individual study results. Their general conclusions are that there is no strong pervasive relation between workers' job satisfaction and productivity. Specifically, Vroom (1964) reports a median correlation of +.14 from the 20 studies he reviewed, and Brayfield and Crockett report that there is insufficient evidence that employees' attitudes "or any simple ... or for that matter, appreciable .... relationship to performance on the job" (1955, p. 408). By contrast, Herzberg et al. (1959) were somewhat more optimistic, and although the correlations they compiled were generally low, they concluded that further attention to satisfaction in relation to worker output was warranted.

One impetus behind researchers' proclivity for studying the satisfaction-performance relation appears to be the assumption that the two variables should be related, and that further research will reveal this as-yet-undiscovered truth. However, according to Jaffaldano & Muchinsky (1985), the new studies often served only to increase the existing data base in this area to the point where it is now highly fractionated.

The conclusion that job satisfaction and job performance are only slightly related has many practical implications. The ideals of high job satisfaction and high productivity are valued in our society, and attempts to design work so as to jointly achieve these goals are continuous.

Equity Theory (1965), Blau (1964) has argued convincingly that any expectation – whether based on social comparison, past experience, the going rate, or prior implied promise – can, and often does, function much like a standard of justice with a quasi-moral character. More recently, Leventhal (1980) has broadened our awareness of alternatives to the contributions rule, noting that needs, equality, conventional agreement, or status – but more typically some mix of the foregoing – can operate as rules of justice.

Thinking about job satisfaction in this fashion establishes a useful point of contact with Folger's (1986) theory and experimental research concerning "referent cognitions." Folger argues that dissatisfaction is "inherently referential," in the sense that outcomes are compared with a referent cognition (p. 147). The psychological closeness or availability of a referent cognition is a function of the ease with which it can be imagined. The referent cognition, or "what the outcomes might have been," may derive from social comparison, but could also take the form of a previously held expectation or a promise made to the subject alone [In fact, in the experiments reviewed by Folger (1986), the manipulation of referent cognition always takes the form of a stated or implied promise of what the probable outcomes would be]. Folger has found that dissatisfaction is an interactive function of (a) the discrepancy between actual outcomes and the referent cognition; (b) the perceived likelihood of amelioration of outcomes; and (c) the perceived justification for the events or actions that caused the outcomes to fall short of referent cognition. He concludes that the combination of these factors influences whether outcomes determine "mere discontent" (affect) or a sense of injustice (Folger, 1986, p. 151). Folger raises as a problem for future research how responses to unfairness go beyond verbal expressions of satisfaction/dissatisfaction. Perhaps in organisations an important overt response is the extent of Organisational Citizenship Behaviour.

Of primary interest to this study is the relationship between job satisfaction and productivity when people work in teams. Since teams are a relatively recent concept in organisation psychology research, most of the research examining this relationship has been conducted on individuals.

(1964) when subjects were asked to render psycho-physical judgements of various stimuli when accompanied by an anchor or reference stimulus. The distribution of responses is negatively skewed, and subjects' judgements are less variable as well as more accurate in the vicinity of the anchor stimulus value. Helson (1964) has suggested that the same phenomenon that underlies subjective perception of audible tones, colour, and other physical stimuli might also characterise judgements of social stimuli and attitudinal objects.

Indeed, Smith et al. (1969) drew upon Helson's adaptation level theory in developing the theoretical basis of the JDI as a measure of job satisfaction. They regard responses to the JDI items as resulting from comparisons of job circumstance to some anchor point. They also comment frequently on the respondent's "frame of reference." It seems that they implicitly regard this frame of reference as functioning like a standard of fairness, as they conclude that "satisfaction can be regarded as an evaluation of equitableness of treatments or conditions" (Smith et al., 1969, p. 166).

Herzberg, Mausner, and Snyderman's (1959) analysis of secondary or internal states, correlated with critical incidents of satisfaction and dissatisfaction, revealed that "feelings of fairness or unfairness" were the psychological state related to dissatisfaction. Fairness was seldom referred to in connection with satisfaction episodes.

There is some basis, then, for thinking that job satisfaction measures reflect more cognition than affect and that the cognition in question is an appraisal of the situation with a standard of fairness. The empirical distribution of scores, when coupled with Herzberg et al.'s (1959) analysis, suggests that most of the available scale or range of responses is used by subjects to appraise outcomes up to the approximate point regarded as fair or equitable. Thus, Smith et al. (1969) find the distribution "... sloping off steeply toward the satisfied end and gently toward the dissatisfied end" (pp. 79 - 80). This echoes Blau (1964), who marshals considerable support for the premise that outcomes that bring an individual's situation up to the normatively expected level are more important than those that cause it to be surpassed.

To interpret job satisfaction responses as largely representing judgments of fairness is not to imply any specific rule of fairness, such as the proportionate contributions rule in Adams'

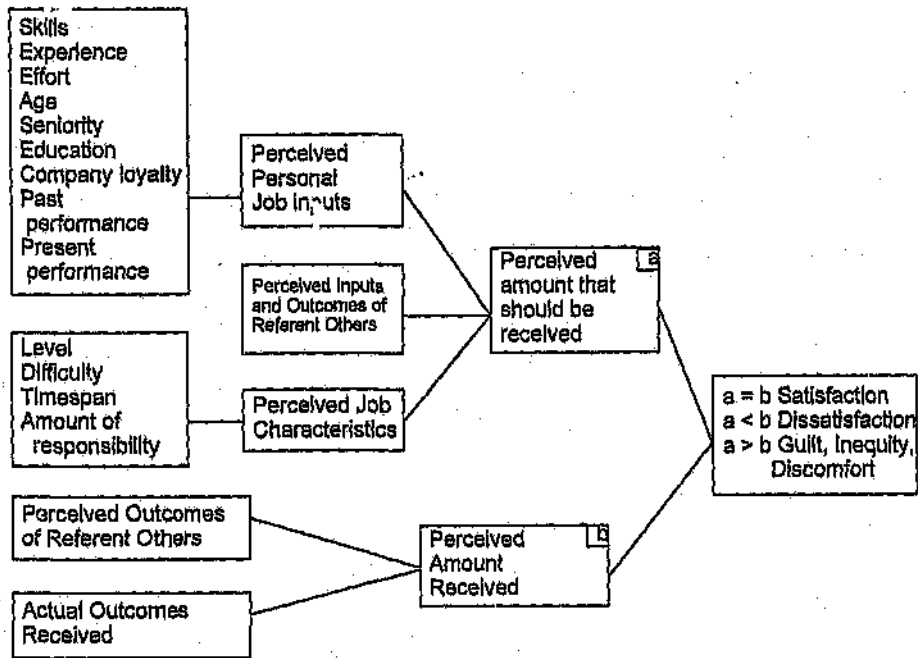
theories. In recent years it seems that job satisfaction researchers have had little inclination to qualify or interpret their findings in light of some of the characteristic "behaviours" of job satisfaction scores, or to consider possible distinguishable referents of such scores. Some data and relevant theoretical frameworks do exist that permit elaboration upon such referents.

Campbell (1976) has reviewed a series of "quality of life" studies that show satisfaction measures behaving quite differently from happiness measures. Andrews and Withey (1976) factor analyzed 12 global subjective measures of well-being, finding that satisfaction-type measures load on a factor suggestive of "cognition" (i.e. a controlled assessment of external circumstances). Happiness-type measures load on what appears to be an "affect" factor, or the individual's internal emotional state. The two sets of measures correlate around .50, but correlate differently with other things; for example, the cognition measures correlate positively with age, whereas the affect indicators correlate negatively. Organ and Near (1985), reviewing these findings, suggested that job satisfaction measures capture more cognition than affect. In support of this argument, Brief and Robertson (1987) found that a separate job-cognitions measure was far superior to measures of positive and negative affect in accounting for unique variance in the job satisfaction scores of 144 subjects.

Thus, consistent with recent work by Zajonc (1980), it appears that cognition and affect are not as tightly conjoined as once thought. They can operate in semi-independent fashion. And, to the extent that they are separable, it appears that job satisfaction measures reflect more cognition than affect, not necessarily affect as a direct result of cognitions. But what kind of cognition? To confront this question requires drawing upon some observations about the behaviour of job satisfaction responses – how they are distributed and broken down – and the developing theory of social cognition (Folger, 1986).

The distribution of job satisfaction scores is almost invariably negatively skewed. Smith et al. (1969) reported this finding in the large samples with which they developed the JDI, even after weighting the neutral response closer to the dissatisfied response; presumably the skewness was even more pronounced with the neutral response given a value midway between the positive and negative responses. This is precisely the type of distribution fo. He on

Figure 3: The Lawler Model of Facet Satisfaction.



Focusing as they do on the individual, neither of these theories can fully explain why job satisfaction should increase, nor indeed what enhances job satisfaction when individuals work in teams. The author proposes that a more systemic approach needs to be taken when considering the multitude of factors (of which teamwork is one) impacting on an individual's job satisfaction. However, the author suggests that theory on job design (e.g. Hackman & Oldham, 1980) contributes some understanding of what contributes to job satisfaction when people work in teams.

### "Satisfaction" as fairness

A recent trend in the theoretical understanding of job satisfaction is the contribution of cognitions (such as a perception of fairness) to an individual's perception of job satisfaction. This is particularly believed to be relevant when individuals work in teams. There are well-developed theories of job satisfaction (e.g., Locke, 1976) and some measures of job satisfaction (such as the JDI) that are well-grounded and systematically developed from such

### **The Lawler Model of Facet Satisfaction**

The Lawler model (represented in Figure 3) is intended to provide an understanding of what determines an individual's satisfaction with any facet of his job (Steers and Porter, 1986). This is a discrepancy model in that it shows satisfaction as the difference between (a) that which an individual believes he should receive and (b) that which he perceives he does in fact receive (Steers & Porter, 1983). According to the model, and simply stated, if an individual's perception of his outcome level is in agreement with what he perceives it should be, he is satisfied. If the individual perceives his outcome level to be lower than he believes it should be, he will be dissatisfied. When the individual's perceived outcome level exceeds what he believes it should be, feelings of guilt, inequity and discomfort result (Steers & Porter, 1983). Thus perception, as suggested earlier by Locke (1976), is the most important process in Lawler's model (Landy, 1986). As may be seen in the model, an individual's perception of what his outcomes should be are influenced by what the individual perceives his referent-others' inputs and outcomes to be (Steers & Porter, 1983). Finally, Lawler believes that the combination of the feelings that a worker has about all facets of the job defines overall job satisfaction, with facets contributing to overall satisfaction according to their importance to the individual (Landy, 1983).

Guzzo et al. (1987) also found that the size of the organisation, type of organisation, and type of worker influenced the overall effects. Across the 11 types of psychological interventions, larger effects were found in smaller organisations, in government versus private and nonprofit organisations, and with sales and managerial workers versus blue-collar and clerical workers.

Spector (1986) presented a review and meta-analysis of 88 studies that examined the impact of employees' perceived control on a number of outcomes. He found that, in his sample of studies, employee participation was associated with an improvement in general satisfaction, as well as satisfaction with the work, supervision, pay, opportunities for promotion and growth, and organisational involvement. Participation was not related to improvements in satisfaction with co-workers or with greater commitment. Employee participation was associated with higher motivation and performance, fewer intentions to quit, and lower turnover, but participation was not related to fewer physical complaints and less emotional stress.

All of the above reviewers found considerable heterogeneity in their reviews: studies examining the same outcomes revealed totally different results. In addition, Guzzo et al. (1985) and Spector (1986) found vastly different and far more positive outcomes for employee participation than did Locke and Schweiger (1979).

### ***Contextual factors affecting participation***

Regardless of their views on its efficacy, all of the writers on employee participation agree that contextual factors bear an influence on the impact of that participation. Factors which have been found to affect the impact of employee participation are: personality, participation processes, methodology, and form, each of which have been the focus of some research.

#### **Personality**

Individual differences have been ignored by most theorists and researchers of employee participation. As Singer (1974) notes, "to assume that all workers desire [involvement] opportunities is to lack sensitivity to individual needs - the antithesis of the humanisation that ardent proponents ... advocate". Vroom (1959) was at the forefront of research on the effect of personality on reactions to employee participation. He found that individuals with weak

The final category, controlled experimental field studies, includes studies that had some type of control or comparison. This format would allow the reader to conclude that any results would have been due to the employee participation. Of the 17 studies in this group, few effects were found for productivity, but increased satisfaction was found in the majority of cases.

Overall, Locke and Schweiger found that employee participation had little consistent effect on productivity. However, about 60% of the studies they summarised did find more positive satisfaction with employee participation. They also emphasised the need to examine contextual factors that may determine the effectiveness of employee participation.

Schweiger and Leana (1986) extended this review to compare laboratory and field research concerning employee participation. Their review found similar effects from both settings and overall results comparable to Locke and Schweiger's (1979).

Further positive findings were reported by Katzell and Guzzo (1983), who conducted a review of 207 studies employing one or more of 11 psychologically-based methods of improving productivity. Their review found that 87% of the studies reported improvement in one or more measures of productivity.

In a later analysis, Guzzo, Jette, and Katzell (1985) employed meta-analysis to examine the relative impact of 11 types of psychologically-based organisational interventions in 98 studies.

Guzzo et al (1985) examined gainsharing programs, work redesign, and sociotechnical interventions (self directed work teams), in addition to eight other types of interventions.

These authors employed meta-analysis to compute average effect sizes for the various innovations. Guzzo, Jackson, & Katzell, (1987) determined that the different interventions produced improvements in productivity, overall, about half of a standard deviation.

Considerable differences were also found across the various types of programs.

Sociotechnical interventions tended to show greater than average impact, followed by job redesign. Gainsharing programs, however, did not have a significant effect on productivity.

## ***Research on Participation***

Possibly the best known review of employee participation was presented by Locke and Schweiger (1979). They divided the broad literature into four general subsections on the basis of methodology: laboratory studies, correlational field studies, multivariate experimental field studies, and univariate (controlled) experimental field studies.

The laboratory studies include studies that examined participation in an artificial situation. From a sample of 18 studies, Locke and Schweiger (1979) found no advantage for participation in terms of productivity or satisfaction when compared to an autocratic or more directive leadership. Of course, generalisability of these results is questionable. Firstly, they primarily, but not exclusively, employed students as subjects. Secondly, the experiments employed a variety of tasks, including 20 questions, mechanical tasks, role plays, mazes, decision making, and problem solving. Thirdly, the experiments were of short duration, so the participation lasted no more than an hour or so (Cotton, 1993).

Locke and Schweiger's second group, correlational field studies, examined employee participation by correlating outcomes (such as productivity and satisfaction) with some measure of participation. Of the 25 studies in this category, Locke and Schweiger found no effect on productivity but did find a tendency for satisfaction to be higher when employee participation was greater. Of course, it is impossible to determine causality from these studies. The question can be posed: Are more involved employees more satisfied, or are more satisfied employees given more opportunities for participation?

Multivariate experimental field studies in the Locke and Schweiger review refers to experiments where participation was manipulated but additional factors were also varied. For example, if self-directed work teams were introduced into a factory, and if pay incentives also were changed, the study would fall into this category. Locke and Schweiger reviewed 12 studies that they classified in this way but do not summarise these results. Although they acknowledged that most of the studies demonstrated beneficial results, they correctly pointed out that it is impossible to determine whether the positive results were solely due to greater employee involvement.

*Informal participation* refers to examples where organisations do not have formally established participatory systems or groups involved in the decision-making process. Yet, participation may still occur informally through the interpersonal relationships between managers and subordinates.

*Employee ownership* can be categorised as formal and indirect participation. It is formal because the employee has the formal "right" to participate as any stockholder does. It is indirect because, although most of these organisations are owned by employees, they are operated conventionally (managers make both daily and strategic decisions). There is substantial evidence, including a series of studies by Long (1978a, 1978b, 1980), that such attitudes as general satisfaction, involvement, commitment and motivation are higher in employee-owned firms (see Table 6). Long also found that job attitudes of employees in companies converted to employee ownership improved in proportion to the average percentage of total company's stock held by nonmanagerial employees. While research supports the proposition that perceived participation is greater in employee-owned firms, the evidence is not as strong as for other job attitudes. In general, workers believe the change in ownership increases their influence, although management still holds greater influence.

*Representative participation* refers to situations where employees do not participate directly, but through representatives elected to some body such as a workplace forum or the board of directors. It is therefore, formal, indirect and of medium to low influence. This type of participation generally covers all areas of content because workplace forums or the board of directors can focus on any issue.

Colton et al's (1988) results indicate that different forms of participation are associated with markedly different outcomes. For example, information participation and employee ownership are effective in terms of both productivity and satisfaction, whereas short-term participation is ineffective on both criteria. Not surprisingly, they conclude that participation is a multidimensional or multiform concept.

Improvements in satisfaction, this improvement was of statistical significance in only two. One study (Latham & Yukl, 1978) found a decrease in job satisfaction.

Table 6: Effects of different forms of participation on performance and satisfaction (from Cotton et al., 1988)

Form of Participation	Performance Findings			Satisfaction Findings		
	Positive	Negative	Neutral	Positive	Negative	Neutral
Participation in Work Decisions	11	1	3	4	1	3
Summary	<u>87%</u>	<u>Positive</u>		<u>50%</u>	<u>Mixed</u>	
Consultative Participation <sup>a</sup>	4		1	3		1
Summary	<u>80%</u>	<u>Inconclusive</u>		<u>75%</u>	<u>Inconclusive</u>	
Short-term Participation	1		10	2		5
Summary	<u>9%</u>	<u>No effect</u>		<u>29%</u>	<u>No effect</u>	
Informal Participation	6		1	17		3
Summary	<u>80%</u>	<u>Positive</u>		<u>85%</u>	<u>Positive</u>	
Employee Ownership	3			4		1
Summary	<u>100%</u>	<u>Positive</u>		<u>80%</u>	<u>Positive</u>	
Representative Participation	1	1	2	4	2	2
Summary	<u>0%</u>	<u>No effect</u>		<u>Overall:</u>	<u>50%</u>	<u>No effect</u>
				<u>Representative:</u>	<u>100%</u>	<u>Positive</u>

<sup>a</sup> Despite being positive, these effects are labeled inconclusive because the methodology of the positive studies is poor.

*Consultative participation* refers to situations where employees engage in long-term, formal and direct participation, and the participation content focuses on job issues. The only difference between consultative participation and participation in work decisions is that the former involves a lesser level of employee influence. Employees give their opinions but, typically, they do not have a veto or complete decision-making power.

*Short-term participation* is characterised as formal, direct and concerned with work itself; however, it is of limited duration.

(1970) quite accurately states, "Workers' participation has become a magic word in many countries. Yet almost everyone who employs the term thinks of something different." This can prove problematic in research. For example, Locke and Schweiger (1979) noted conceptual distinctions among forms of participation, but ignored such differences in their review. They distinguished studies only in terms of "more" or "less" participation and, consequently, they concluded that participation has a negligible effect on productivity and mixed effects on job satisfaction (Colton, Vollrath, Froggatt, Lengnick-Hall, & Jennings, 1988).

In an attempt to understand the breadth of the concept, it is useful to examine "participation" under the headings proposed by Cotton et al. as a six-level classification:

1. Participation in work decisions
2. Consultative participation
3. Short-term participation
4. Informal participation
5. Employee ownership
6. Representative participation

*Participation in work decisions* includes formal participation schemes in which workers exert considerable influence in decisions focusing on the work itself. In terms of Cotton et al's classification scheme, this form of participation is formal, direct and long-term. Participants' influence is high (workers have a veto or make the final decisions), and the participation focuses on the work, typically dealing with how it is organised, what is done, who does what, and so forth. Several studies examined the effects participation has on both work and pay issues (Fleishman, 1965; Nelder, 1980). According to the analysis conducted by Cotton et al (1988), this form of participation has relatively consistent and positive (see Table 6) effects on productivity. Several studies have examined the effects of participation on both work and pay issues (Fleishman, 1965; Nelder, 1980). Of 15 studies, 11 found increases in performance/productivity, whereas only one found a decrease. The effect participation in work decisions has on job attitudes is inconsistent. Although four of six studies found

## CHAPTER 4

# PSYCHOLOGICAL PARTICIPATION

### *Introduction to Psychological Participation*

Almost a century ago, John Dewey (1899) eloquently argued for the common man's need to participate in his own destiny. Some 46 years later, Allport (1945) pointed out that participation involves more than mere activity, that the ego needs to be engaged to prevent the individual from becoming reactionary. More recently, Tannenbaum and Schmidt (1958) offered a continuum of decision-making behaviours which outlined increasing levels of freedom for subordinates' participation, and Vroom and Yetton (1973) described group participation as one method of decision making.

As research on the subject has proliferated, the concept of employee participation has come to carry (subtle) nuances, with terms like 'involvement' and 'empowerment' accepted as synonyms. Terminology aside, a common thread running through the literature is that, by involving workers, by having them participate in decision making, by making the workplace more democratic, and by empowering employees, certain outcomes (such as attitudes and productivity) may improve. Although individuals have argued that employees should be involved for ethical reasons (Sashkin, 1984, 1986), many behavioural scientists have tried to establish its efficacy in attaining a wide variety of management goals.

Often, interest in participation, the intervening variables, and job outcomes has been pursued at the individual level of analysis. Since the 1950s, however, work designs which promote the workteam unit have become more prominent and in recent years, there has been an acceleration in the adoption of group work practices (Griffin, 1988; Lawler & Mohrman, 1986).

### *Towards an understanding of Participation*

Participation, though applied as if it often refers to a single concept, has been defined conceptually and operationally in many different ways (Dachler & Wilpert, 1978). As Schregle

Addressing these questions would seem to require, at a minimum, the use of separate measures of affect as experienced at work and indices of fairness cognitions in respect to outcomes (Organ, 1988).

The introduction of moderating variables has, however, improved the relationship (e.g. Herman, 1973; Petty, McGee, & Cavender, 1984). For example, the relationship is stronger when the employee's behaviour is not constrained or controlled by outside factors. An employee's productivity on machine-paced jobs, for instance, is going to be more greatly influenced by the speed of the machine than his or her level of satisfaction.

Job satisfaction appears to be a construct with multiple inputs. None of the existing theories or models seems able to encompass the breadth of these inputs and thus the author advocates adopting an eclectic approach to understand the causes and impact of this concept, not only in the current team context, but also on an individual basis.

Job satisfaction is said to be an individual attribute and as such may not be so appropriate for the purposes of this study. However, the author searched in vain for literature defining a team satisfaction construct. For this reason, theories of job satisfaction based on individual attitudes need to be applied in a team context.

toward positive evaluation of the various dimensions of job circumstance. More convincing evidence that fairness cognitions temporally precede OCB is required before theoretical frameworks can confidently be developed within this area (Organ, 1988).

Another problem that arises is how to fit the person within the issue. Schneider and Dachler (1978) and Staw, Hell, and Clausen (1986) have marshalled impressive data arguing that satisfaction could be largely a dispositional variable. Does it seem plausible to think that this represents stable tendencies to perceive fairness or unfairness? Or is it more reasonable to anchor dispositional causes of satisfaction in something like Watson and Clark's (1984) concept of negative affectivity as a trait? A recent study (Atch, Hrief, Hurke, Robinson, & Webster, 1987) found a correlation of only  $-.24$  between negative affectivity and job satisfaction, but the correlation was  $-.46$  with life satisfaction, suggesting that this trait may be less influential in satisfaction measures as the domain of satisfaction becomes increasingly circumscribed.

Whether the disposition accounting for stability in measured job satisfaction is primarily affective or cognitive, it presents a serious challenge to researchers trying to sort out causal paths between the individual, environment, and OCB. Almost certainly there are feedback loops among those variables: for example, OCB has consequences that might well augment any disposition to exercise OCB, and, conversely, to withhold OCB.

If cognitions are taken as the major influence on OCB, what then do we make of the extensive social psychological research implicating affect as the cause of helping behaviour (Brown, 1985) – research that apparently inspired much of the work examining the correlation between job satisfaction and OCB? Perhaps a distinction should be drawn between one-shot episodes of helping in non-organisational contexts versus sustained patterns over time of OCB in the work environment. Conceivably, more refined measures of OCB in the future would show that affect is more influential in certain types of OCB (e.g., helping a co-worker in a direct, personal way), whereas fairness cognitions (net of affect) have more to do with less personal forms of OCB.

the individual is able to consider the organisation as a microcosm of a just world (Lerner, 1980). If the long-run dynamic is toward fairness, the ambiguity attendant to the here-and-now discretionary contribution is tolerable. Indeed, there comes to mind a possible advantage to organisational reward systems that strive for long-term, global appraisals of fairness rather than one-to-one correspondence of micro-reward for micro-contribution. The inherent ambiguity of such a system frees the individual to contribute in discretionary fashion without thinking that this will be acquiescence to exploitation; on the other hand, there is enough cognitive slippage in attribution of the cause of the behaviour to permit the person to infer some degree of intrinsic causation (Decl, 1976).

Interpreting the correlation between OCB and satisfaction as essentially a functional relationship between OCB and fairness cognitions finds support in a study by Scholl, Cooper, and McKenna (1987). They constructed a 10-item, self-report measure of "extra-role behaviour," based on examples of such discretionary behaviour as offered by Katz and Kahn (1978). Items included suggestions for improvement, helping others with problems, taking on extra responsibility, and continuing education. Scores on this measure correlated .41 with a measure of the individual's report of perceived pay equity vis-à-vis others with a similar job. A smaller, but still statistically significant ( $p < .01$ ) correlation was found between the extra-role behaviour and report of pay equity in the context of the larger organisation as a system. These correlations are quite in line with the trend of relationships reported elsewhere between OCB (or Pro-social Behaviour) and the more general measures of job satisfaction.

### **Critique**

Although recasting the satisfaction-performance hypothesis in terms of a fairness-OCB proposition has a reasonable logical basis and some degree of empirical support, and possibly resolves certain issues, there are still some loose ends.

Arguably, the correlation could reflect OCB as a cause of satisfaction, either because OCB often elicits at the very least informal reinforcements from co-workers or superiors or because it brings satisfaction in its own right. Additionally, the justification phenomenon must also be considered: having rendered OCB, an individual might well experience a cognitive strain

Taking into account what practitioners include in their concept of performance, the empirical record provides some support for the "common sense" notion that satisfaction is related to performance.

### **Organisational citizenship behaviour as a function of fairness**

One rationale for restraining Organisational Citizenship Behaviour (OCB) in response to cognitions of unfairness would make use of the terms drawn from Adams' (1965) Equity theory (i.e., a form of reducing inputs in order to effect equity). However, it is not necessary to endorse the proportionate contributions rule as the definitive criterion of justice in order to suggest that individuals perceiving unfairness will withhold something. But are they likely to diminish performance in terms of explicit job requirements? To do so invites potential sanctions and/or sacrifice of the incremental rewards provided by the system, and such a tactic probably would be painful for professionals and skilled artisans whose egos and self-esteem are so closely bound to pride in performance. A less painful, more flexible means of responding to perceived unfairness lies in a calculated, discriminating withholding of discretionary gestures of the sort suggested by OCB.

Yet to characterise this response as merely an attempt to re-establish equity somehow seems to miss the point. It does not seem likely that an individual, perceiving himself as a victim of injustice, really believes that the situation is corrected by any degree of OCB, even though the response is elicited by conceptions of justice. What is that? The point is that perceived unfairness evokes a fundamental redefinition of the relationship between the individual and the organisation. The change is interpretable as one deriving from social exchange theory, described by Blau (1964) as consisting of diffuse obligations and precise terms of exchange. Contributions are now limited to those of a contractually-binding character. In contrast, someone who senses general fairness in a social exchange relationship with the organisation need not quibble over whether this or that mundane contribution tips the balance of equity. In any given instance, there is ambiguity about the value of the gesture and what should represent its appropriate recompense. Similarly, there is ambiguity concerning what degree of reciprocation is binding for any specific valued outcome. What is important is that

external to the organisation. The second rationale, drawn from extensive naturalistic experiments on pro-social and altruistic behaviour (e.g., as summarised in Brown, 1985, pp. 58-60), notes the accumulating evidence for a "mood-state" or "positive-affect" explanation of many forms of helping behaviour. Thus, if job satisfaction represents the chronic or modal mood state of an organisational member, then presumably those most satisfied should have a characteristic predisposition toward pro-social gestures within the organisation environment, and among those pro-social acts would be various forms of citizenship behaviour.

Significant relationships between measures of Organisational Citizenship Behaviour and job satisfaction have been reported in five published studies (Bateman & Organ, 1983; Smith, Organ & Near, 1983; Puffer, 1987; Motowidlo, 1984; Motowidlo, Packard, & Manning, 1986) using varied subject groups and procedurally independent assessments of the important variables. Correlations range from the teens to over .40, with a weighted mean in the high twenties to low thirties – somewhat greater than Vroom's (1964) estimate of .14 from studies of satisfaction and traditional performance measures, or the .15 of Iaffaidano and Muchinsky's (1985) meta-analysis.

Interestingly, Iaffaidano and Muchinsky (1985) found that correlations were significantly higher when performance measures used in past studies were either subjective or global in nature. It seems probable that those performance measure types would be the ones most likely to capture variance in some forms of organisational citizenship behaviour. Katzell and Yankelovich (1975), reporting the results of a survey of 563 managers and 69 union leaders, noted that respondents in both groups attached to the definition of "productivity" such attributes as "loyalty" and "less tangible features such as the absence of disruption..." (pp. 19 – 20) and other factors "even when their impact on output cannot be measured easily" (p. 103). It therefore seems likely that subjective, global ratings of subordinates' performance or productivity will reflect varying but substantial estimates of their tendencies to render organisational citizenship behaviour.

The final item asks individuals to indicate how they feel about their job as a whole. Responses are recorded using a seven-point Likert format which ranges from "I'm extremely dissatisfied" (1) to "I'm extremely satisfied" (7).

The scale was developed from a literature review, a pilot study, and two investigations with samples of 200 and 390 male blue-collar workers in the United Kingdom. Coefficient alphas were observed to be 0.85 and 0.88 for the two samples (N=200 and 390 respectively). The combined mean value (N=590) was 70.53 (s.d. 15.42)

### **Internal Work Motivation Scale**

Work motivation was measured using the Internal Work Motivation scale (Hackman and Oldham, 1975). The scale consists of six items, with a seven-point response dimension. A mean score is taken and one item is reverse-scored. It is part of the Job Diagnostic Survey which was developed over a two-year period, during which it was administered to some 1500 individuals in more than 100 jobs in 15 different organisations. The empirical evidence is based on the final version of the measure which was administered to 658 employees in seven organisations. The overall mean score was 5.30 (s.d. 0.96) and a Spearman-Brown internal reliability coefficient of 0.75 was obtained.

### **Psychological Participation Scale**

Psychological participation was measured using Vroom's (1960) Psychological Participation scale. The scale contains four items, each with a five-point response dimension. A total score is calculated, ranging from 4 to 20 - the higher the score the higher the amount of influence which an individual perceives himself to possess. Vroom's (1960) validation of the instrument was conducted on 108 supervisors and managers. In this study the median inter-item correlation was 0.05 (range -0.07 - 0.26), the test-retest reliability over seven months for 77 respondents remaining in the same job was 0.63 and the mean value for the sample of 108 was 12.7.

### **Productivity Results**

Since productivity is only measured on a team basis, there are no individual indicators of productivity. Thus each individual in a team was given the one productivity score. The

Table 8: Distribution of individuals in teams.

TEAM	N
KDM32	8
KEM23	13
WFAM23	46
WNSC20	10
WNSC24	4
WSBM21	17
WSCM20	8
WSNA21	7
WTBM24	24
TOTAL	137

A 'team' consisted of all groups whose total effort contributed to the achievement of production goals in the particular area where the team was working. Thus a team included people who worked on day shift and those who worked on night shift in the same area.

## ***Instruments***

### **Questionnaire**

The opinions or perceptions of each of the members of the teams were surveyed using a questionnaire. The questionnaire incorporated:

1. Three previously validated scales testing the factors selected. These are detailed below.
2. Biographical data considered relevant by past research.

### **Job Satisfaction Scale**

Job Satisfaction was measured using the Overall Job Satisfaction scale (Warr, Cook and Wall, 1979). The scale consists of sixteen items designed to measure the satisfaction with both intrinsic and extrinsic job features. The first fifteen items describe specific features such as rate of pay, opportunities for promotion, physical work conditions, and respondents are asked to indicate the extent to which they are satisfied or dissatisfied with each of these features.

- HYPOTHESIS 2**    Null Hypothesis:            The productivity of a team will not be different for different levels of *internal work motivation*.
- Alternative Hypothesis:    The productivity of a team will be different for different levels of *internal work motivation*.
- HYPOTHESIS 3**    Null Hypothesis:            The productivity of a team will not be different for different levels of *psychological participation*.
- Alternative Hypothesis:    The productivity of a team will be different for different levels of *psychological participation*.

## ***Method***

### **Subjects**

The subjects in this study were workers on a gold mine in Carletonville. More specifically the sample incorporated:

1. 'Workers' who perform various jobs considered to be a similar level. They may collectively be known as team members. Their Paterson grading ranges from 2-5.
2. 'Team leaders' whose Paterson Grade ranges from 6-8.

These two levels made up the teams which were the focus of this study. The teams to be included in the study were sampled randomly by picking their numbers out of a hat containing the numbers of all of the teams on the shaft. Ten teams were selected, however, due to constraints only nine teams were finally surveyed. The nine teams incorporated 137 individuals. The split of these individuals between the teams is depicted in Table 7

## CHAPTER 5

# RATIONALE AND PROCEDURE

### *Aims Of The Research*

Given the overall lack of conclusive evidence in the current literature regarding team performance, the intention of this research was to examine three factors which have been linked to productivity, both for individuals and teams, in previous studies. Thus the more specific aim was to examine whether any of these factors (job satisfaction, internal work motivation and perceived psychological participation) do in fact affect the productivity of teams in this particular setting.

The investigation was therefore primarily concerned with the following questions:

1. Does higher *overall job satisfaction* within a team contribute to higher levels of productivity?
2. Does higher *internal work motivation* within a team contribute to higher levels of productivity?
3. Do higher levels of perceived *psychological participation* within a team contribute to higher levels of productivity?

These questions lead to the following statistical hypotheses being examined:

<b>HYPOTHESIS 1</b>	<b>Null Hypothesis:</b>	The productivity of a team will not be different for different levels of <i>job satisfaction</i> .
	<b>Alternative Hypothesis:</b>	The productivity of a team will be different for different levels of <i>job satisfaction</i> .

Koch, 1979), although others (Jackson, 1983; Schaubroeck, Cotton, & Jennings, 1989) have reported equivocal findings for the participation-role stress connections. Also, a proposition (Mitchell, 1973) that in a participative system motivation would be linked with performance has been given some support (Schuler, 1980; Schuler & Kim, 1978). Independently, the role stresses have been inversely related with performance (Jamal, 1986; Schuler, Alday, & Brief, 1977), and job satisfaction (Brief & Alday, 1976; Hamner & Tosl, 1974). However, an understanding of these processes and their connections with productivity is incomplete (Pearson, 1991).

From an examination of Table 7, which summarises the models, it is apparent that it is difficult (if not impossible) to integrate the various models (Cotton, 1993). One problem is that the models focus on different outcomes of the participative process. Lowin (1968) focused on attitudes about the process, Strauss (1982) on the impact on society, Sashkin (1976) on commitment to change, and Conger and Kanungo (1988) on the perception of empowerment. It is unlikely that a common process would lead to so many different outcomes.

That the models all employ different theoretical perspectives is the second difficulty. Of those authors explicitly examining the participation process, Sashkin followed a psychological need approach, Schuler employed role and expectancy theories, and Tjosvold examined it from a group problem-solving perspective.

A third problem is that many of the authors differ about how they define participation. Leana (1987) narrowly defined it as "joint decision making" (p. 228); Sashkin (1976) described "several different types of participation as well as different methods of participation" (p. 76), and Conger and Kanungo (1988) distinguished between participation and empowerment.

As Cotton (1993) comments, the different theories given

*"begin[s] to sound like the story of the blind men describing an elephant ... All of the men are accurately describing what they feel, but each has only a portion of the elephant. Trying to develop a single model of employee involvement may be as fruitless as the blind men describing the elephant ... To say that one model is correct is not to say that the others are wrong. Although some may have greater generalisability, all of them are probably correct to some extent."*

## **Conclusion**

It is likely that employee participation has been encouraged by reasonable theoretical and empirical relationships between participation in decision making, role ambiguity and conflict, job satisfaction, and better work outcomes. For instance, participation in decision making has been found to be a salient predictor of both role ambiguity and role conflict (Norris, Steers, &

Table 7: Summary of Participation Models (from Cotton, 1993)

<b>Lowin (1968)</b>	
Process	Participative decision making
Leads to	Satisfaction of subordinate's and managers' motives (dependent on personality and attitudes, the extent, importance, and visibility of the issues, and the clarity of the process)
Outcomes	Subordinate's and manager's behaviour and attitudes towards participation
<b>Sashkin (1976)</b>	
Process	Participation and psychological need (control over own behaviour, task closure, positive relationships)
Leads to	Means of effect (psychological ownership, information flow, development of skills, development of shared norms and values)
Outcomes	Acceptance and commitment, quality, support, adaptive capacity of organisation
<b>Locke &amp; Schweiger (1979)</b>	
Process	Joint decision making
Leads to	Value attainment
Leads to	Cognitive effects (increase in knowledge, information, and creativity in solving problems) and Motivational effects (greater trust, greater feeling of control)
Outcomes	Satisfaction and productive efficiency
<b>Schuler (1980)</b>	
Process	Participation
Leads to	Role clarification (reduced role conflict and role ambiguity) and Enhanced expectancy perceptions (performance-reward)
Outcomes	Satisfaction with work and supervisor
<b>Strauss (1982)</b>	
Process	Participation on issues (multiple forms and many different possible issues)
Leads to	Degree of control (from joint consultation to self-management) and Ownership (from none to completely owned)
Outcomes	Impact on society, survival of organisation, productivity, and worker satisfaction
<b>Leana (1987)</b>	
Process	Joint decision making
Leads to	Sharing of authority, not passing of authority
Outcomes	Subordinate satisfaction and performance
<b>Tjosvold (1987)</b>	
Process	Opportunity to discuss problems
Leads to	Constructive interaction (cooperative context and productive controversy)
Leads to	Effective problem solving (quality solutions, commitment to implementation)
Outcomes	High productivity and high morale
<b>Conger &amp; Kanungo (1988)</b>	
Process	Participative management
Leads to	Self-efficacy information (enactive attainment, vicarious experience, verbal persuasion, emotional arousal)
Leads to	Strengthening belief in personal efficacy (empowerment)
Outcomes	Initiation/persistence of behaviour to accomplish task objectives

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Although this incorporation allows for a more precise examination of participation, it also excludes many of the more popular (and powerful) forms of employee involvement.

### **Form**

It can be argued that much of the confusion regarding the effectiveness of employee involvement exists because the reviews are comparing apples with oranges (Cotton, et al 1988).

Opposing this suggestion, Leana, Locke, and Schweiher (1990) argued that the Cotton et al. (1988) six-level classification was inadequate and that the sample was arbitrary, and went on to present a separate classification and sample, with disparate findings. In response, Cotton et al. (1990) countered that differences in definitions and study samples led to the divergence in findings. What is clear from these arguments, then, is that how the form of participation is defined will, by and large, determine the results.

### ***Models of Employee Involvement***

Employee participation (or employee involvement, or worker democracy, or ...) is a relatively slippery concept. Given the range of meanings the term embraces, it is not surprising that many models of how employee participation operates also have been developed.

satisfaction, a difference that is probably due to employing a meta-analysis, as well as somewhat different study samples (Cotton, 1993).

### **Methodology**

In a meta-analysis of research studies published between 1960 and 1985, Wagner and Gooding (1987a) examined the impact of time and methodology on research findings concerning employee participation. It was found that a number of research aspects changed over time, mirroring changes in societal issues and overall liberalism-conservatism in the American culture.

As a first step, Wagner and Gooding examined the impact of time on research methodology employed, contrasting studies that had only perceptual data (questionnaires) of the outcomes versus studies that had objective measures, or different respondents for participation and outcome measures, or a longitudinal break between measures of participation and the outcomes. It was revealed that methodology changed over time. Specifically, researchers were more likely to employ only perceptual data during the 1961-1975 period than the 1950-1960 or 1976-1985 periods.

The second (and more interesting) finding from Wagner and Gooding's meta-analysis was that studies employing only perceptual data tended to find stronger effects for employee participation than studies using more objective measures. These authors suggest that the shift in societal interests, the focus of research questions, the use of methodologies, and the presumed success of employee involvement are all intertwined. They argue that growing liberalism during the 1960s led researchers to use a methodology that focused on more popular outcomes (employee attitudes rather than productivity) and also tended to find more favourable results for employee involvement.

Wagner and Gooding's results are disturbing for those who favour employee involvement. It should be pointed out, however, that a number of employee involvement studies were not included in their review. Excluded were studies involving sociotechnical interventions (self directed work groups), Scanlon plans, employee stock ownership, and board representation. As they pointed out, these studies often incorporate more than just employee participation.

desires for independence were unaffected by participation, while those with strong independence needs showed increased satisfaction when involved. Vroom's results stand in isolation, however, since Tosi (1970), was unable to replicate them using the same instruments.

The remainder of studies examining personality have tended to focus on job enrichment, typically examining growth-need strength within the Hackman and Oldham (1980) job characteristics model, leaving the issue of individual differences as yet greatly under-researched.

### **Participation Processes**

Miller and Monge (1986) conducted a meta-analysis to examine which variables might moderate the relationship between employee participation and the outcomes of satisfaction and productivity. They focused on three general models: cognitive models, affective models, and contingency models. *Cognitive models* suggest that participation is effective because it enhances the flow and use of important information in organisations. *Affective models* argue that participation is effective because it satisfies workers' needs and thereby increases satisfaction and morale. *Contingency models* propose that participation will affect satisfaction and productivity differently for different people and situations.

Miller and Monge (1986) found no support for contingency models; neither job type nor organisational type was a significant moderator of employee participation outcomes. Some evidence was found to support the cognitive models; the relationship between participation and productivity was stronger than that between participation and satisfaction. Affective models, however, also found support. Strong correlations were discovered between satisfaction and participative climate, suggesting that widespread participation was better (in terms of satisfaction) than participation on a single issue.

The research setting (laboratory vs. field) and type of subject (employees vs. students) were found to be significant moderators in the Miller and Monge (1986) study. Their laboratory versus field findings contradict those of Schweiger and Leana (1986), who as previously mentioned found little effect of participation on productivity and only some effect on job

Guzzo et al. (1987) also found that the size of the organisation, type of organisation, and type of worker influenced the overall effects. Across the 11 types of psychological interventions, larger effects were found in smaller organisations, in government versus private and nonprofit organisations, and with sales and managerial workers versus blue-collar and clerical workers.

Spector (1986) presented a review and meta-analysis of 88 studies that examined the impact of employees' perceived control on a number of outcomes. He found that, in his sample of studies, employee participation was associated with an improvement in general satisfaction, as well as satisfaction with the work, supervision, pay, opportunities for promotion and growth, and organisational involvement. Participation was not related to improvements in satisfaction with co-workers or with greater commitment. Employee participation was associated with higher motivation and performance, fewer intentions to quit, and lower turnover, but participation was not related to fewer physical complaints and less emotional stress.

All of the above reviewers found considerable heterogeneity in their reviews: studies examining the same outcomes revealed totally different results. In addition, Guzzo et al. (1985) and Spector (1986) found vastly different and far more positive outcomes for employee participation than did Locke and Schweiger (1979).

### ***Contextual factors affecting participation***

Regardless of their views on its efficacy, all of the writers on employee participation agree that contextual factors bear an influence on the impact of that participation. Factors which have been found to affect the impact of employee participation are: personality, participation processes, methodology, and form, each of which have been the focus of some research.

#### **Personality**

Individual differences have been ignored by most theorists and researchers of employee participation. As Singer (1974) notes, "to assume that all workers desire [involvement] opportunities is to lack sensitivity to individual needs - the antithesis of the humanisation that ardent proponents ... advocate". Vroom (1959) was at the forefront of research on the effect of personality on reactions to employee participation. He found that individuals with weak

Figure 7: Plot of mean Internal work motivation per team against productivity

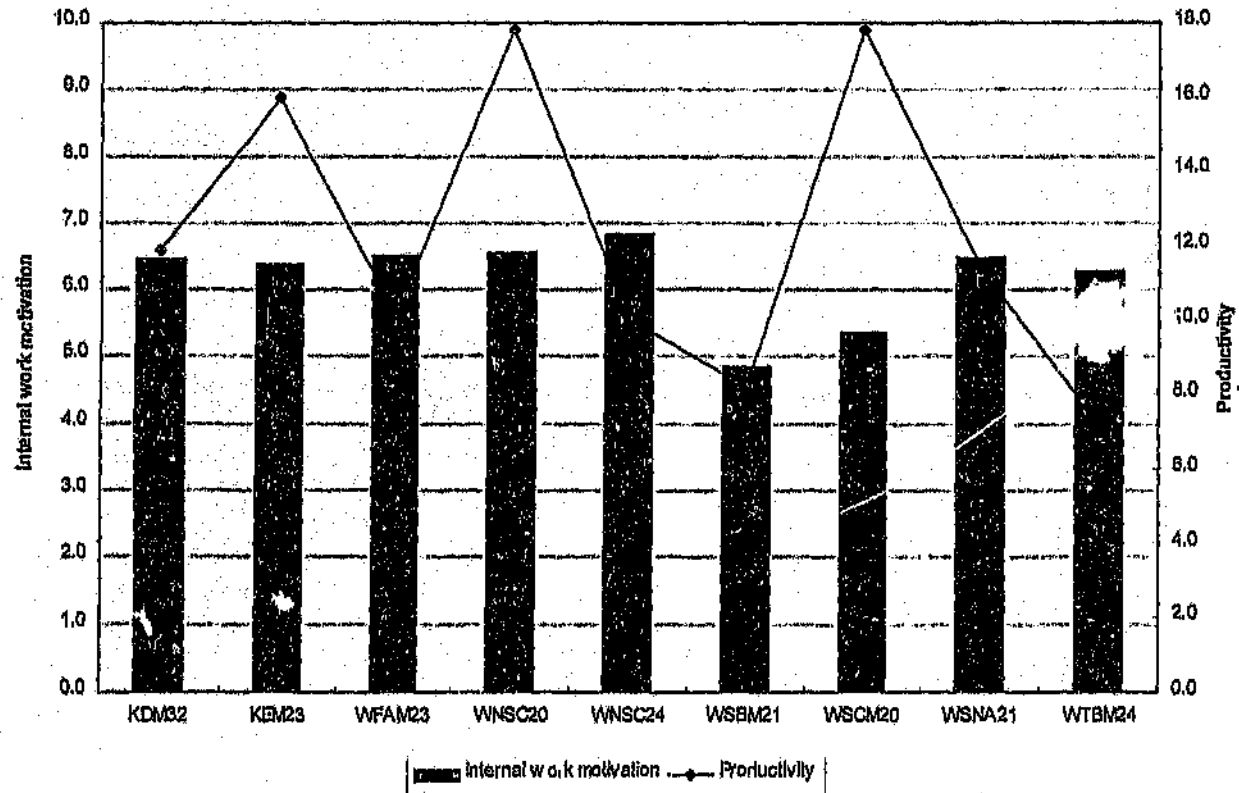


Figure 6: Plot of mean psychological participation per team against productivity

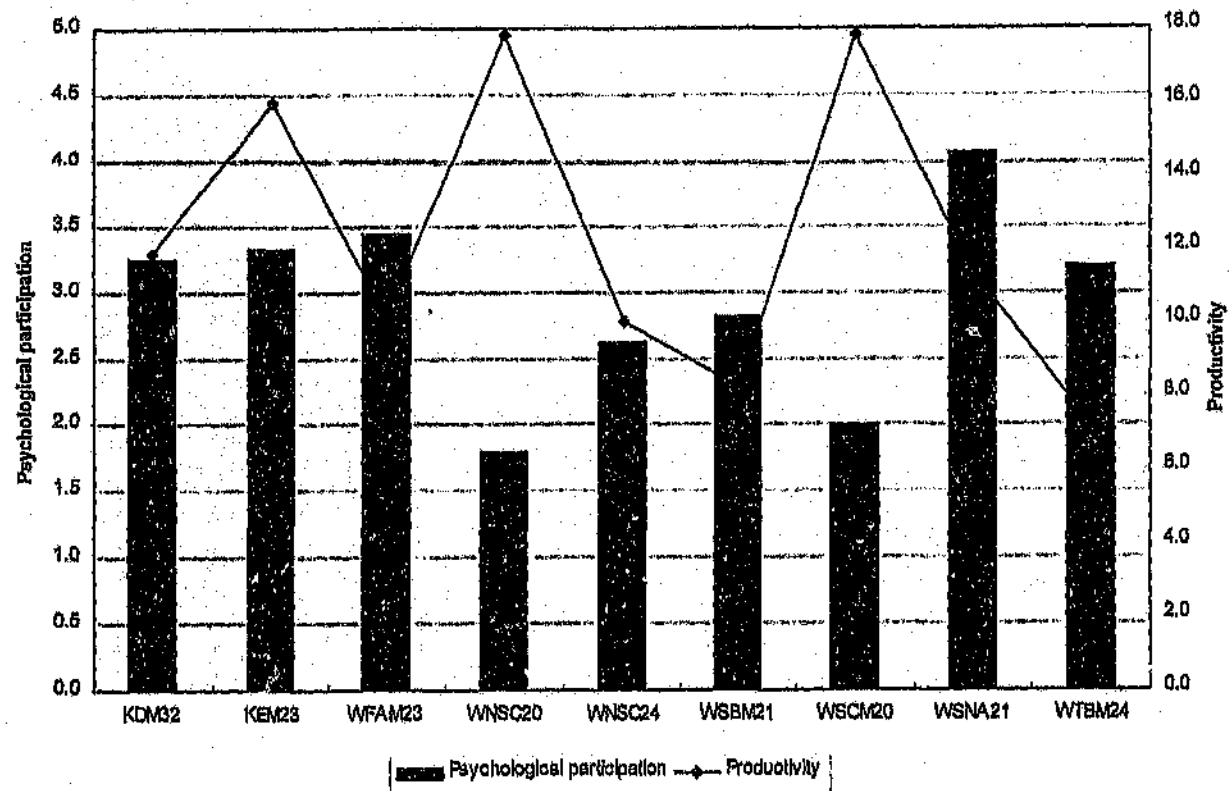


Figure 5: Plot of mean job satisfaction per team against productivity

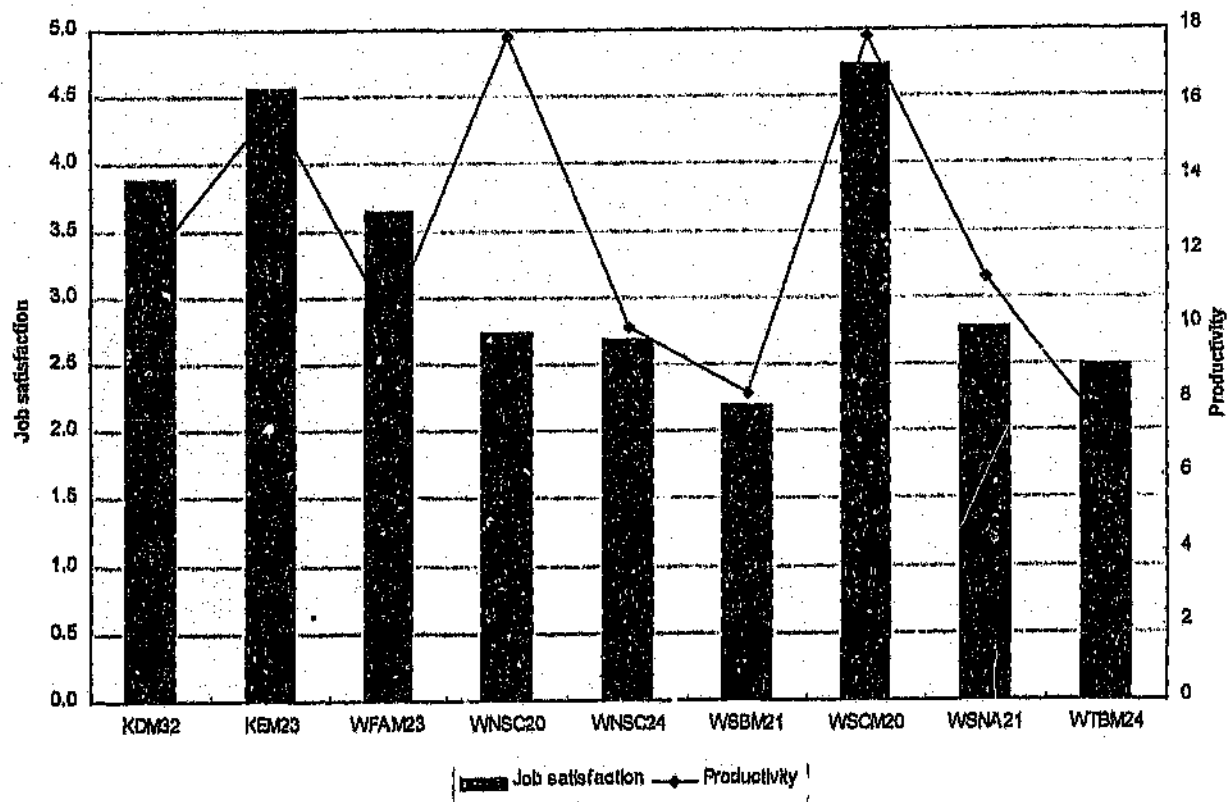


Table 12: Table of Means and Standard Deviations for each of the scales per team

TEAM	PRODUCT- IVITY	JOB SATISFACTION				INTERNAL WORK MOTIVATION		PSYCHOLOGICAL PARTICIPATION			
		MEAN	STD. DEV	TOTAL MEAN	TOTAL MEAN S.D.	MEAN	STD. DEVIATION	MEAN	STD. DEVIATION	TOTAL SCORE	TOTAL S.D.
KDM32	11.860	3.891	2.093	62.250	13.625	6.457	0.633	3.250	0.700	13.000	4.781
KEM23	16.000	4.571	2.412	73.143	9.976	6.398	0.606	3.327	0.913	13.308	4.047
WFAM23	10.140	3.642	1.979	58.267	20.747	6.507	0.480	3.448	0.686	13.792	3.549
WNSC20	17.820	2.744	1.494	43.900	4.654	6.567	0.393	1.800	0.497	7.200	2.300
WNSC24	10.000	2.688	1.349	43.000	6.976	6.833	0.204	2.625	0.520	10.500	1.915
WSBM21	8.220	2.195	1.115	35.118	18.911	4.863	0.794	2.809	1.190	11.235	3.993
WSCM20	17.820	4.743	2.467	75.889	9.740	5.375	2.616	2.000	2.000	8.000	0.000
WSNA21	11.350	2.777	2.111	44.429	7.850	6.500	0.548	4.071	1.027	16.286	4.030
WTBM24	7.110	2.505	1.715	40.083	11.209	6.285	1.163	3.198	0.987	12.792	2.813
WHOLE GROUP	12.258	3.306	1.859	52.898	11.521	6.198	0.826	2.948	0.936	11.790	3.047

### **Descriptive Statistics Results**

The means and standard deviations for each of the variables being examined (productivity, job satisfaction, internal work motivation) per team are presented in Table 12. As indicated by the table, the productivity score does not have a standard deviation since the measure of productivity is on an overall team basis. Job satisfaction is presented with both a 'mean' and a 'total mean' score. The mean is the average of the average response given by each team member, while the 'total mean' is the average of the total response given by each team member. According to Warr et al (1979), the job satisfaction scale measures the total response. Internal work motivation is presented with only a 'mean' and its standard deviation as directed by Hackman & Oldham (1975), the authors of the scale. Psychological participation is presented with the mean (and its standard deviation) and the total mean with its standard deviation. Vroom (1960) directs that a total score should be calculated for this scale.

In order to more easily see what the trends in the results in Table 12 look like, each of the factors is plotted against each other and presented in a bar chart format, as may be seen in Figures 5, 6, 7, 8, 9, 10.

Table 10 present the analysis of variance conducted on all of the teams for the factor Internal work motivation. These results are also significant for each level.

Table 10: ANOVA - Internal Work Motivation

Effect	df Effect	MS Effect	df Error	MS Error	F	p-level
1	8	33.73431	128	3.749764	8.99538	0.000000
2	8	28.39516	640	2.724708	10.42136	0.000000
12	40	9.60017	640	2.724708	3.52337	0.000000

Table 11 presents the analysis of variance conducted on all of the teams for the factor Psychological Participation. These results are also significant for each level.

Table 11: ANOVA - Psychological Participation

Effect	df Effect	MS Effect	df Error	MS Error	F	p-level
1	8	21.81441	131	2.953686	7.38549	0.000000
2	3	23.43447	393	2.175313	10.77292	0.000000
12	24	10.12694	393	2.175313	4.65539	0.000000

The results of each of these ANOVA's allows the researcher to conclude that there are significant differences both between and within the teams on each of the factors and that it is therefore statistically valid to reduce the individual scores for each of these factors to an aggregate score on each factor for each team.

## Correlation

Correlation tests are used to assess whether a relationship exists between two variables and to get an indication of its direction and strength (McCall, 1986). The fundamental idea behind the correlation coefficient is that the square of the correlation coefficient represents the percentage of variability in the Y, that is associated with differences in the variable X. The Pearson product-moment correlation coefficient was used. *Statistica* statistical package was used to run the analyses.

## Cronbach's Alpha Coefficient

In order to assess the reliability of the scale used, Cronbach's Alpha Coefficient was calculated for this set of data. Anastasi (1982) and Nunnally (1967) recommend a reliability cut-off estimate of .80.

## Results

### ANOVA Results

Table 9 presents the Analysis of Variance conducted on all of the teams for the factor overall job satisfaction. As may be seen, the F-statistic is highly significant for both effects.

Table 9: ANOVA - Overall Job Satisfaction

Effect	df Effect	MS Effect	df Error	MS Error	F	p-level
1	8	183.6767	139	12.98310	14.14737	0.000000
2	15	229.3348	1935	3.18204	72.07162	0.000000
12	120	15.2988	1935	3.18204	4.80786	0.000000

The one-factor analysis of variance rests on a number of assumptions. The first assumption is that the variances of the populations from which the groups are drawn are equal i.e. homogeneity of variance. The second assumption is that the groups involved comprise randomly sampled subjects and are completely independent of each other. The third assumption is that the population distributions are normal in form. The factors in the study must be fixed by the experimenter and are not randomly selected. Finally, the number of observations in each group is equal and greater than one.

The F-test which examines variance under the assumption of the null hypothesis is fairly robust as it survives certain violations of the basic assumptions. It is tolerant of violations of the assumptions of normality of distribution and homogeneity of variance. A certain degree of heterogeneity of variance is tolerated provided the same number of observations are present in each treatment (Edwards, 1968). Violations of the assumption of normality may be tolerated if the departure is not severe and a large number of cases is sampled (failing to do so results in having to perform non-parametric tests) (Myers, 1980; McCall, 1988).

The design of this investigation with its categorical data disposed the study to analysis using the one-factor analysis of variance. The purpose of the study is to analyse if the factors selected do appear to have affected the differences in productivity between the teams.

Given that the investigation was exploratory in nature and that the sample size was small, a 0.95 level of significance was considered a suitable cut-off point.

*Statistica* statistical package was used to run the analyses. The overall purpose of conducting the ANOVA was to identify if there were statistically significant differences between the teams on each of the factors. A statistically significant difference is a necessary but not sufficient condition for using the independent variables as explanatory variables. Having run the ANOVA and finding statistically significant results for each of the independent variables, means and standard deviations were calculated for each of the teams on each factor. This was done as preparation for running correlation tests.

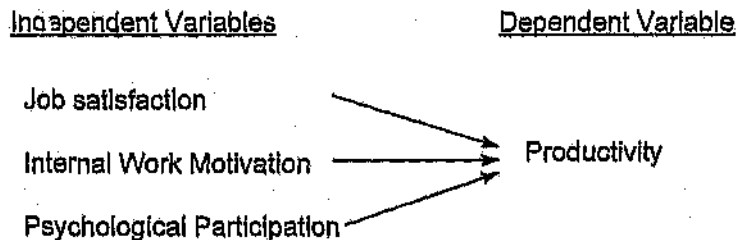
## CHAPTER 6

### DATA ANALYSIS

#### *Statistical Techniques*

The nature of this study is exploratory and thus the selection of statistical techniques is based on this premise. The design of the present study is comprised of 9 independent groups (different teams) with measures for each individual in each group (team) on 3 independent variables (job satisfaction, internal work motivation, psychological participation). The independent variables have been measured on an individual basis. However, the dependent variable is measured on a team basis. This research design is represented in the diagram below:

Figure 4: Design of study



The first step in analysing this data was to assess if it is valid to reduce the individual responses within each team to a single number for the whole team, on each of the variables measured. The appropriate technique for this purpose is the Analysis of Variance (ANOVA).

#### **ANOVA**

When there is a single variable and several samples to be compared, Mc Call (1986) directs the use of the F-test from a one-factor analysis of variance. The purpose of the analysis of variance is to determine the probability that the means of several groups of scores deviate from one another merely by sampling error (McCall, 1986).

All participants who completed the questionnaire were provided with refreshments at the end of the session.

### ***Nature Of Data Yielded***

The above procedure yielded scores for each question from every individual. The set of individual responses were then grouped by their respective teams. Within the teams the overall responses were then grouped for each scale.

### ***Coding Of Data Yielded***

Each of the possible responses in the questionnaire was coded with a number. The numbers given to each response are shown in Appendix 2. For each of the standard instruments used, the scoring is as specified for the instrument.

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<sup>2</sup> The lingua franca in common use on the mines is called Fanakalo ("like this"). The larger proportion of the vocabulary of Fanakalo is derived from Zulu, and in addition to English it also contains elements of Xhosa and Afrikaans.

their shift underground. Thus one session did not necessarily include all members of a team as some may work in the day shift and others in the night shift.

During the period leading up to the actual research, a research assistant was trained to conduct the sessions with the teams. A research assistant who could act as a translator was necessary since the people at this level in the mine are mostly illiterate and not conversant in English or Afrikaans. Thus, for the purposes of the study, Funakalo<sup>2</sup> was used as the communication medium. The same research assistant/translator was used to run all of the sessions to ensure that the research conditions were as similar as possible for every session.

Once all of the team members and team leader had arrived in the training room, the purpose of their being paraded was explained. The subjects were informed that a questionnaire was being administered to establish their opinions on a number of issues related to their work and how they felt about it. They were further told that the exercise was being undertaken by an outside company and they could therefore be assured of total confidentiality although the overall findings would be given to management. It was therefore an opportunity for management to hear how they felt about their work and that there could be no negative repercussions. This type of reassurance was considered necessary for people at this level of the mine since trust levels are generally believed to be low. Following this introduction, the translator extended the opportunity to anyone who wished to leave to do so, thus ensuring that the sessions were entirely voluntary.

A questionnaire (as in Appendix 1) was then handed out to each person present. The same questionnaire was copied onto an overhead transparency. The translator explained that he would go through each question which had to be answered one at a time, pointing to it on the overhead projection and then giving them an opportunity to answer it. Each question was explained and the possible responses explained one at a time. This process ensured that those whose literacy level was low could graphically see what to do. Those subjects who felt unable to write anything were individually assisted by additional research assistants.

productivity data for each of the teams was gathered from production records at the mine. These production records keep track of various indicators of productivity. For the purposes of this research, the productivity indicator "meters square per man" was considered the most suitable all-encompassing indicator. The exact calculation of "meters square per man" is not revealed by the mine, however it is standardised for each of the teams and is therefore considered on an equal basis against which to measure different teams.

### ***Design And Procedures***

Before the actual research was undertaken, a pilot study was conducted in another mine using 5 people at a similar level to those intended for the study. The procedure to be used in the actual research was followed for this group. However, after completing the questionnaire the researcher was then able to discuss with these pilot subjects (with the aid of a translator) what they found difficult to understand. This enabled ambiguous and difficult-to-translate wording to be improved and the questionnaire format to be finalised.

With the design of the study reasonably clarified, a meeting was arranged by the researcher with the General Manager and Production Manager of Blyvooruitzicht mine. The purpose of this meeting was to explain firstly the purpose of the research and the potential benefits it would bring to the mine, and secondly, to secure their permission to conduct the study and to provide the necessary commitment to it. Commitment was obtained at this senior level and the General Manager then sent out a letter to all staff members stating that the study was to be undertaken surveying opinions from underground team members and urging the support and commitment of those whose subordinates were involved or who were personally involved.

The shift bosses responsible for the teams that had been selected were contacted and asked to inform their Personnel Assistants that the researcher would be liaising with them in order to arrange a suitable time to 'parade' (instruct to attend a meeting) the team. The researcher then prepared a schedule to collect the data. The Personnel Assistant responsible for each team was contacted and asked to make the necessary arrangements to ensure that all members of the team (or sub-team where the team included both day and night shift personnel) had been paraded at the time and venue arranged. The teams were paraded after

The relationship between job satisfaction and productivity found in this study provides support for sociotechnical systems theory - that the two factors examined cannot be seen as distinct on their own.

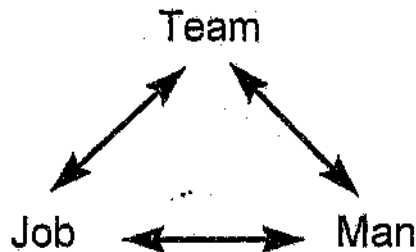
This triadic conceptualisation highlights certain limitations of Lawler's model in the team context. As proposed in the diagram, the team, job and person characteristics are interdependent. Lawler's model, however, sees the perceived personal job inputs, perceived inputs and outcomes of referent others, and perceived job characteristics as being independent and each ultimately contributing to the perceived amount that should be received.

There is much theoretical support for the importance of managing the perceptions that employees have. Blau (1964), for example, argues that any expectation - whether based on social comparison, past experience, the going rate, or prior implied promise - can, and often does, function like a standard of justice. That is, the standard of justice that employees use in deriving their perception of job satisfaction is to a large extent derived from the expectation that they have. Given that expectations are based on social comparison, past experience, or prior implied promise, it is evident that the team dynamics and, in particular, the team leader's behaviour can contribute significantly to the expectation that his team members have.

Similar to this theory is Folger's (1986) theory of referent cognitions. He argues that dissatisfaction is 'inherently referential', in the sense that outcomes are compared with a referent cognition. Again, this suggestion highlights a leader's role in defining the referent cognitions of his team members. Generally, the result suggests that theory on social information processing will play a vital role in understanding the relationship between job satisfaction, productivity and teams.

The results of this study may also tentatively contribute to the debate about whether individuals are more sensitive to objective job conditions or social cues. While teamwork is seen as an improved job condition, the diagram suggests that social cues arising from the team are vitally important in determining job attitudes.

them. Linking these two proposals, the relationship between these three factors can best be represented diagrammatically as follows:



This diagram suggests that each of these factors is affected and in turn affects each of the other factors. Thus, the team characteristics impact on the job: If someone is doing the same job, but is in a different team, there may be significant differences as to how that job is perceived. Similar explanations can be made for the relationship between each of the other factors.

Helson's Adaptation Level Theory (1964) provides support for this conceptualisation of the interrelationship between the team, individual and job. According to this theory, perceptions are to a large extent determined by comparison to an anchor point, which leads to the proposition that within a team setting, perceptions of job satisfaction can be managed to a certain extent by the setting of the anchor point. This highlights the role of the team leader in controlling the anchor point within the team.

As discussed in the literature review, much of the theory regarding work teams derives from the sociotechnical systems framework. It is apparent that this triadic conceptualisation embraces the sociotechnical approach - particularly the interrelationship of subsystems, in this case, the team, job and person. Sociotechnical systems theory highlights the need to examine organisational issues from an open systems point of view - thus this conceptualisation must be viewed as only a subsystem of a larger system - it is not a model which acknowledges the multiplicity of factors that also affect each of the three components.

definition was suggested by the author to be the most comprehensive - to reiterate, he defines it as "... the pleasurable emotional state resulting from the appraisal of one's job as achieving or facilitating the achievement of one's job values. Job dissatisfaction is the unpleasant emotional state resulting from the appraisal of one's job as frustrating or blocking the attainment of one's job values or as entailing disvalues. Job satisfaction and dissatisfaction are a function of the perceived relationship between what one wants from one's job and what one perceives it as offering or entailing" (underlining by the author). From this definition it would seem that job satisfaction is derived to a large extent from a cognitive process. Indeed, as was suggested in Chapter 3, 'responses of job satisfaction directly reflect affects, but, because cognitions are such a direct determinant of these feelings, both components of attitude are strongly represented in responses.'

One of the proposals regarding the cognitive process leading to a feeling of job satisfaction or dissatisfaction is the perception of fairness. Smith, Kendall & Hullin (1969) suggested that job satisfaction refers to feelings associated with a perceived difference between what is expected as a fair return and what is experienced. Their theory relating job satisfaction as perceived fairness was extensively reviewed in Chapter 3. Another theory which is valuable in understanding the fairness perception proposal and for interpreting this result is the Lawler Model of Facet Satisfaction. According to the model, satisfaction is the difference between (a) that which an individual believes he should receive and (b) that which he perceives he does in fact receive.

When an individual appraises a situation, he usually appraises it against some measure. That 'measure' may be a subjective perception (eg. social comparison) or it may be reasonably objective (eg. past experience, the going rate, or prior implied promise). It is that measure which may be influenced by the team - in particular, the team leader or person influencing the team dynamics.

Building on this relationship between the team and an individual's perception of job satisfaction, it is worth adding Locke's (1690) assertion that the causes of job satisfaction cannot be discovered solely in the job or in man, but appear to lie in the relationship between

and Muchinsky, of research to that date found that nothing had changed in twenty years - their median correlation was +.15. There are, however, some theoretically and methodologically based reasons that may be proposed as to why the result of this study is so much stronger.

Previous studies referred to in the literature review examined the relationship between job satisfaction and individual productivity. The result obtained in the present study suggests that it is the measure of productivity which may elucidate why the empirical evidence is contrary to practitioner's intuition - productivity in this study was measured on a team basis while that of previous studies was on an individual basis. This result therefore provides support for Organ's (1977, 1988) proposal that an alternative definition of performance may explain the discrepancy in the satisfaction-performance hypothesis. A team setting, which forms the context of this study, is considered a good platform for examining 'performance' from a wider perspective. Indeed, as proposed by numerous authors, team effectiveness is dependent on a number of factors, not least of which are the co-operative behaviours exhibited by team members towards each other. A performance measure based on overall teamwork includes not only what each individual can do, but how the teams function together. This complies closely with the concept of organisational citizenship behaviour, a term defined by Bateman and Organ (1983) as "those helpful, constructive gestures exhibited by organizational members and valued or appreciated by officials, but not related directly to individual productivity". From an organisational point of view, it is apparent that jobs can seldom be accomplished by individuals in isolation, and thus a measure of job performance needs to take cognisance of this dependency. A team measure of performance, the author proposes, includes not only this constructive type of behaviour but also the productivity of the team. Thus, the study indicates that a team measure of performance is related positively to an individual's job satisfaction.

A further reason which may contribute to understanding the stronger job satisfaction - productivity relationship obtained in this study, is the effect of the team on an individual's 'job satisfaction'. To explain this proposal it is necessary to start by looking at how job satisfaction is defined or what the construct of job satisfaction is actually referring to. Locke's (1976)

## CHAPTER 7

### DISCUSSION OF RESULTS

Many organisations are currently implementing teams as a strategy to improving productivity. Although reasonably well established in European countries, and to a lesser extent in the United States (Stewart & Manz, 1995), teams may be considered relatively new in South Africa. Despite the extent of their practical implementation, the empirical understanding of teams is limited both nationally and internationally. While it is accepted that research efforts from other countries can contribute to an overall understanding of teams, each country with its broader contextual factors is likely to experience the implementation slightly differently. Concerns of this nature suggest the necessity for increased research directed towards determining factors that affect team performance, particularly in the South African context.

It was with this in mind that the present research analysed three factors affecting team performance. More specifically, the effect of job satisfaction, internal work motivation, and perceived psychological participation on team productivity were examined.

The findings of the study will be discussed initially in relation to the relevant literature. Leading on from this will be an examination of the implications, both practical and theoretical, of the study. The limitations of the present study will then be outlined, followed by some recommendations for future research.

#### *Key Issues*

##### **Job Satisfaction**

As will be recalled from the results presented in Chapter 6, there is a high correlation between job satisfaction and productivity ( $r = .6376$ ;  $p < .005$ ) allowing the null hypothesis that the productivity of a team will not be different for different levels of job satisfaction to be rejected. This result is considerably more positive than those from previous studies. For instance, as mentioned in Chapter 3, Vroom (1984) conducted a meta-analysis of twenty studies examining this relationship and found a median  $+ .14$  correlation. A similar study in 1985, by Iaffaldano

## Cronbach's Alpha Coefficient Results

Table 14: Cronbach's alpha coefficient results

SCALE	CRONBACH'S ALPHA COEFFICIENT
1. Job Satisfaction	.830523631
2. Internal Work Motivation	.432463612
3. Psychological Participation	.345147276

## Summary Of Results

Table 15 below summarises the significant and insignificant results.

Table 15: Summary of results

### SIGNIFICANT RESULTS

1. Correlation between job satisfaction and productivity = +.6376 ( $p < .085$ )

### INSIGNIFICANT RESULTS

1. Correlation between internal work motivation and productivity = +0.034 ( $p < .931$ )
2. Correlation between psychological participation and productivity = -.5369 ( $p < .136$ )
3. Correlation between job satisfaction and internal work motivation = -.0041 ( $p < .992$ )
4. Correlation between internal work motivation and psychological participation = +.2721 ( $p < .479$ )

Figure 12: Bar chart showing distribution of responses for internal work motivation scale

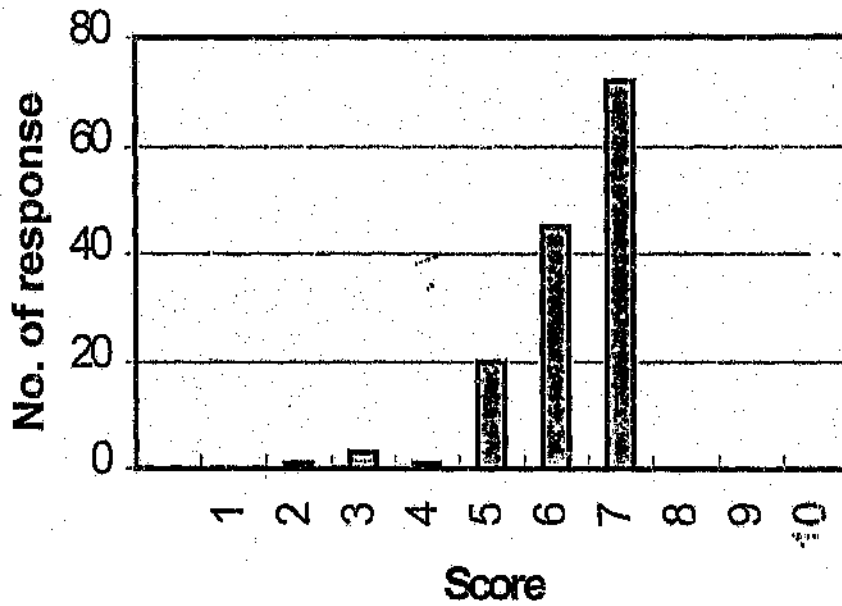


Figure 13: Bar chart showing distribution of responses for psychological participation scale

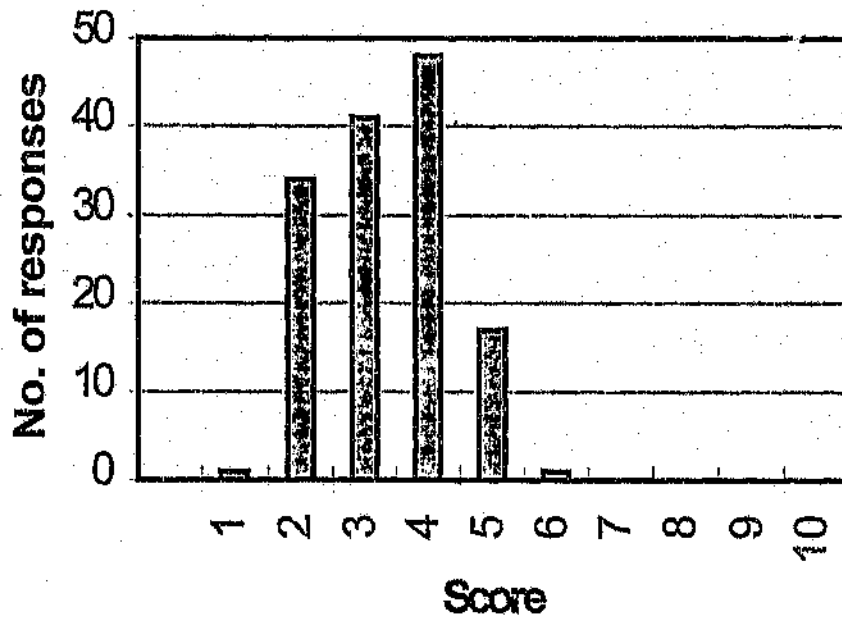
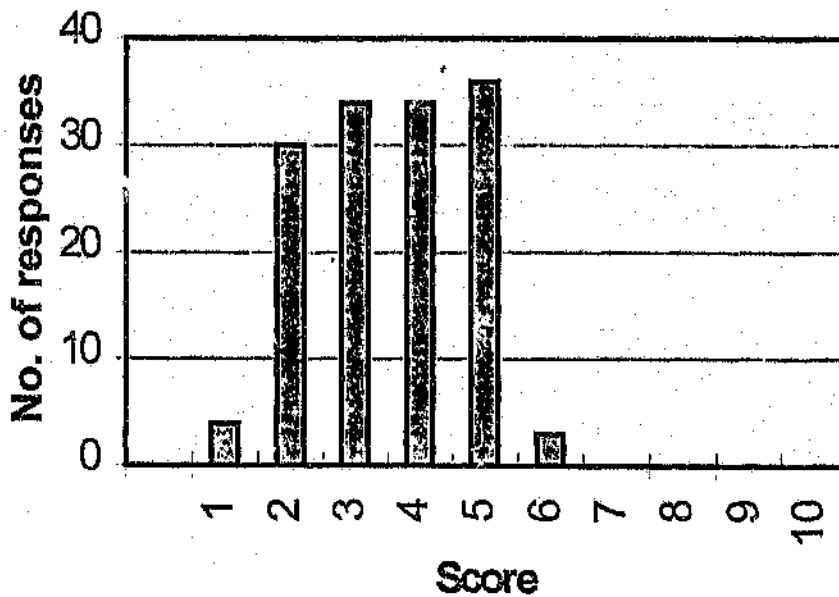


Table 13: Correlations between variables (n=9)

	PRODUCTIVITY	JOB SATISFACTION	INTERNAL WORK MOTIVATION	PSYCHOLOGICAL PARTICIPATION
PRODUCTIVITY		.8378 p<.065	.0340 p<.931	-.5369 p<.136
JOB SATISFACTION			-.0041 p<.992	-.0619 p<.874
INTERNAL WORK MOTIVATION				.2721 p<.479
PSYCHOLOGICAL PARTICIPATION				

Figure 11: Bar chart showing distribution of responses for job satisfaction scale



## Correlation Results

Finally, the correlation between each of these factors is presented in Table 9. As may be seen in the table, job satisfaction and productivity are correlated most highly in this data set. The correlation coefficient between these two factors is  $+0.6376$  with a less than 0.6% chance of the result occurring by chance alone. The next strongest correlation is that between psychological participation and productivity. This correlation coefficient is  $-0.5369$  with less than 13.6% chance of it being by chance alone. This probability level is greater than would normally be desirable, however, for the purpose of this exploratory research, it is considered an acceptable level. Internal work motivation is correlated a negligible  $+0.034$  with productivity and an extremely high chance ( $p < .931$ ) of this result occurring as a result of chance. The correlation between job satisfaction and internal work motivation is negligible ( $-0.0041$ ) and again there exists a high probability that the result is by chance alone ( $p < .992$ ). These two results for internal work motivation highlight that there may be something wrong with this analysis. With this concern a bar chart indicating the distribution of responses for this scale is presented in Figure 12. Similarly, a bar chart for the other two scales (job satisfaction and psychological participation respectively) is shown in Figures 11 and 13.

Psychological participation is correlated  $-0.0819$  with job satisfaction. The probability level for this statistic is  $< .874$  - a high probability of the result being by chance. Psychological participation is correlated  $.2721$  with internal work motivation and the probability that this result is by chance is  $< .479$ .

Figure 10: Plot of Internal work motivation against psychological participation

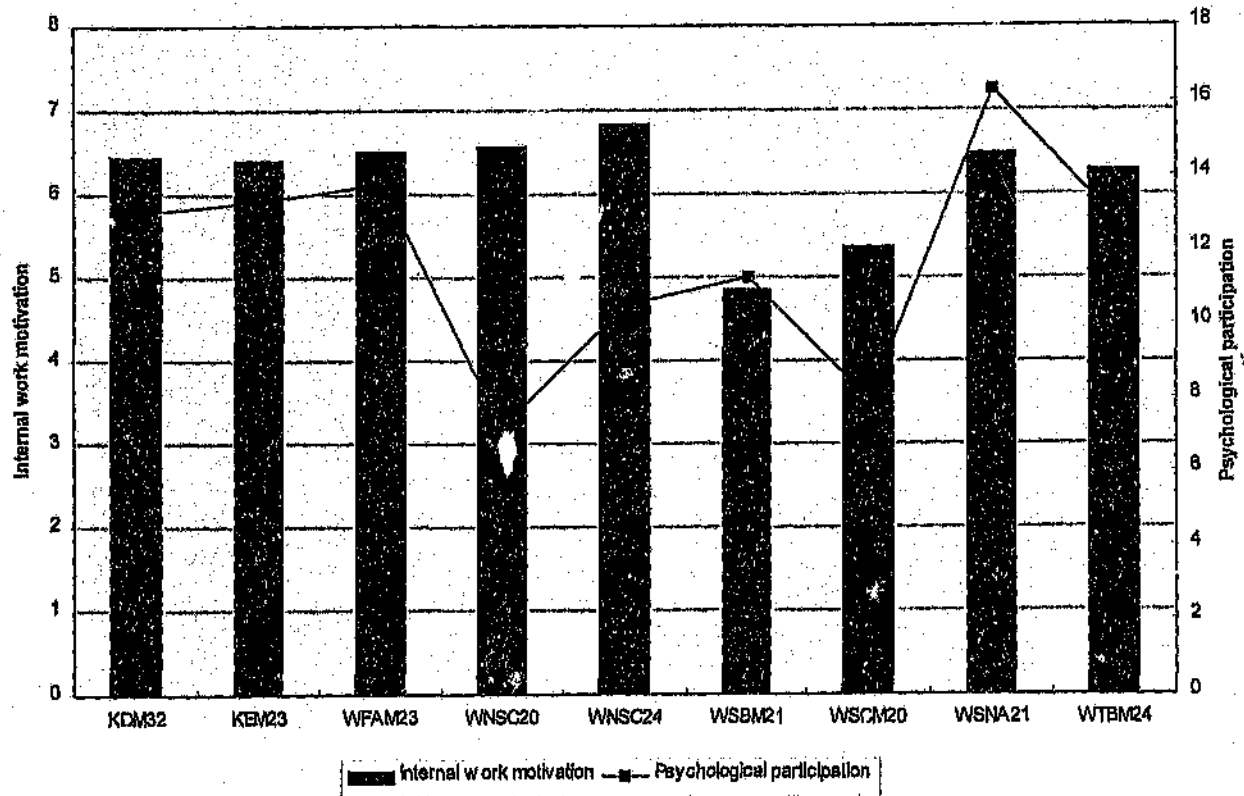


Figure 9: Plot of mean job satisfaction versus psychological participation

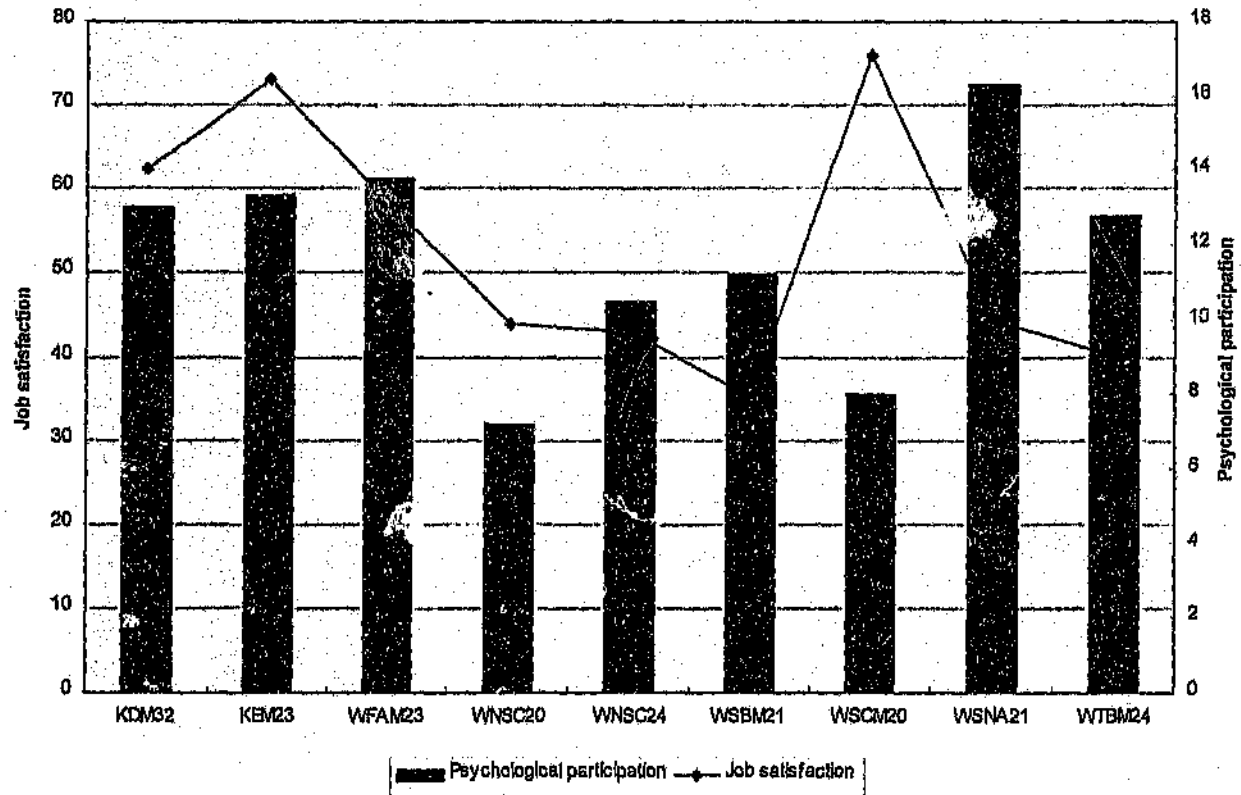
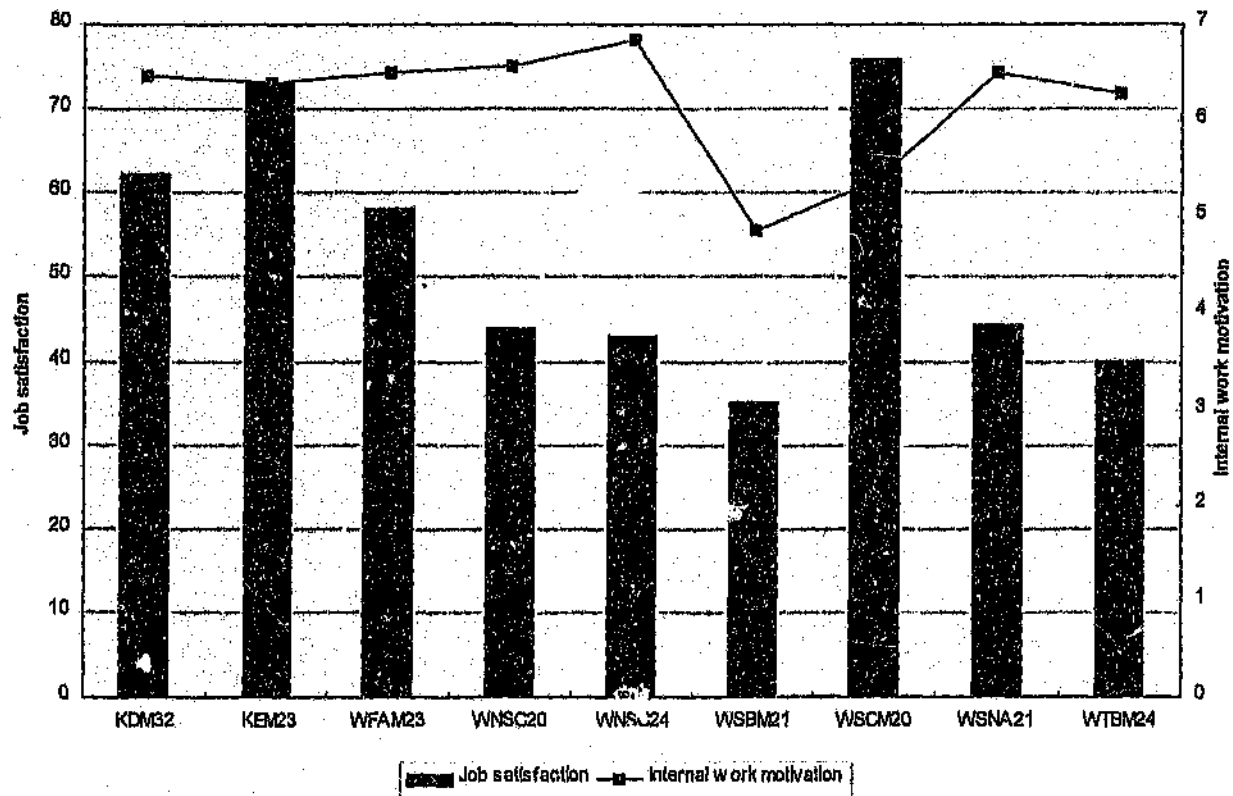


Figure 8: Plot of total mean job satisfaction per team versus mean internal work motivation per team



Indeed, Cheadle (1995) suggests that "The most important innovation introduced by the 1995 Labour Relations Act is the workplace forum. It draws its mandate from the RDP<sup>3</sup>, inspiration from South African practice, and the modern labour market policies of other societies that promote employee participation in decision-making at the workplace" (Cheadle, 1995). The increasing importance of participation in the workplace is highlighted by the following two quotes, yet neither of these considers the enormous hurdles in the achievement of participative work practices:

Professor Kochan pointed out, in his address to the 1994 Labour Law Conference in Durban, that modern labour market policy must encourage:

*'effective joint consultation over the basic strategic decisions affecting the long-run future of the enterprise and the industry. In a global economy it is these strategic decisions regarding investment, effective use of technology and the development of alliances with other organisations within the country and around the world that determine the long-run viability of the enterprise and the future employment possibilities and threats to the workforce. Thus, a modern industrial relations system at the enterprise must provide for effective shared governance and participation .... at the workplace, in negotiations of basic employment and in consultation over the long-run issues of common concern'*

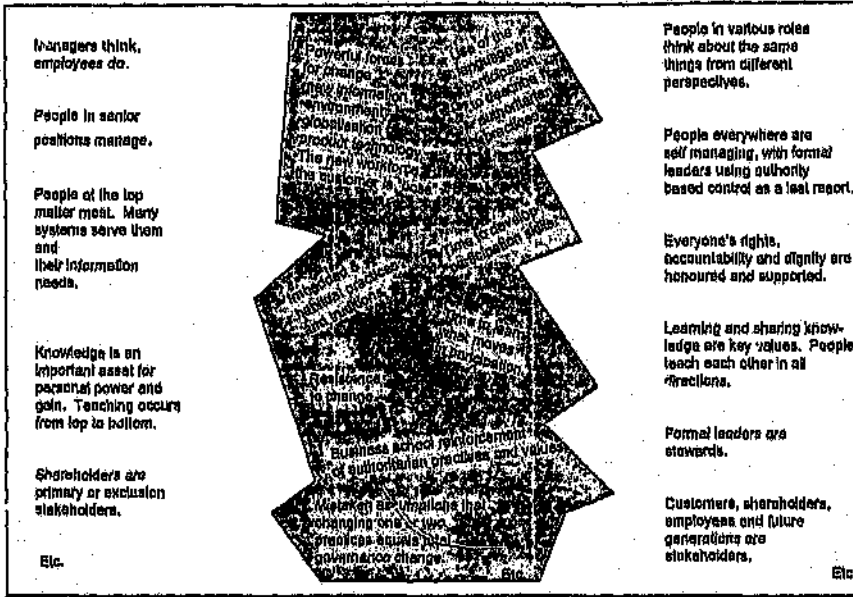
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<sup>3</sup> Paragraph 1.4.10 of the White Paper on Reconstruction and Development WDJ/1994: "Negotiations and participative structures at ... Workplace level will be created to ensure that labour plays an effective role in the reconstruction and development of our country." Paragraph 3.2.1 spells out the government's economic policy goals and objectives, one of which is to 'democratise the economy and empower the historically oppressed, particularly workers and their organisations, by encouraging broader participation in decisions about the economy in both the private and public sector'.

**Authoritarianism**

**Some Transition Tensions**

**Participation**



Within this result lies an important lesson for South African organisations: the principle of participation needs to be more clearly understood by all employees. To this end a culture change is necessary within organisations before effective participation can be achieved. This is particularly important given the principles which are being promulgated in the new Labour Relations Act.

had the effect of producing 'hewers of wood and drawers of water' - people who are frequently inadequately educated or skilled. The process has gone full cycle, with products of this system of education now constituting the teacher core. One of the survival strategies created to cope with this apartheid legacy may be thought of as "shrinking to fit the constrained space" individuals find themselves in - physically, psychologically, politically, economically, and intellectually. With underachievement as the norm, a process of lowering expectations of self and of others was legitimated to protect individuals psychologically against a sense of failure and disappointment. Self-esteem and respect for the human dignity of fellow community members was compromised, because those who were treated like 'boys' ended up behaving like 'boys' (Tucker & Scott, 1992). In South African society, with workers having been so disempowered and industrial relations being adversarial, the perceived opportunity to influence or show power in the relationship makes workers show their power by reducing effort. The problem with this history of South Africa, is that social victims are individually demoralised, yet they see themselves as collectively entitled to redress the injustices of the past. This arises naturally from the struggle for liberation, where 'collectivisation' and 'adherence to the party line' are seen as essential to the struggle. Individual responsibility and initiative are repressed (Tucker & Scott, 1992).

South African organisations seeking to be world competitive have little choice but to embrace the legacy of the past and address its structural and behavioural consequences if performance is to improve. As Tucker & Scott (1992) note, "the real challenge for South Africa is how to redress the legacy of apartheid while at the same time re-establishing individual self-responsibility and the institutional fabric of society". Indeed, the challenge is enormous. Not only do organisations need to address the transition tensions in the move from authoritarianism to participation (as depicted in the diagram below), they also need to address broader environmental issues.

*Figure 14: Transition tensions in move from authoritarianism to participation (from McLagan & Nel, 1995)*

The problem with authoritarian structures is that they entrench superior / subordinate relationships among people. They create chains of command that isolate people and often make positions more important than performance.

In authoritarian systems, citizens, employees, and even customers are essentially subservient or, worse, disenfranchised and disempowered. The relationships between authoritarian leaders and their constituencies can either be dependent or hostile (McLagan & Nel, 1995). The difficulty with trying to change workplace structures is that governance does not exist in the workplace in isolation. It is shaped by, and it shapes, all the governance structures in the environment around it (McLagan & Nel, 1995).

South African society in general is still marked by authoritarian and autocratic governance, a situation which is probably even more prevalent in the mining industry. While increased participation in decision making is high on the employees' agenda, they remain constrained by the system which has nurtured them. Despite a superficial desire to participate, and due to ingrained preconceptions, when given the opportunity to participate in decisions employees may perceive the system or organisation as weak and ineffectual, feel the control has been loosened and so believe that they can get away with less effort.

These consequences are of great concern. The literature confirms the benefits of participation and employees generally desire it, yet the shackles of the past prevent its successful implementation.

McLagan & Nel (1995) note that whatever form participation takes, "everyone expects revolutionary changes in motivation and productivity. Yet time and time again, energy and effectiveness dwindle ... and what started as a good idea becomes a target of sarcastic pub talk and proof that involvement does not really work".

South African society, like the country's political and economic systems, is a product of colonial conquest and apartheid. There can be little doubt that repression retarded the development of the majority of the population. Deliberately differentiated education through the 'Bantu Education' system, introduced by the architect of apartheid, Dr. H.F. Verwoerd, has

Pursuing this line of research, Guzzo et al (1987) found that certain contextual factors such as the size of organisation, type of organisation and type of worker influenced the effects of teams (and other participative interventions) on productivity. Akin to Guzzo et al's findings, it is reasonable to assume that the result of this study may have been affected by these three factors. The impact of contextual factors can be examined further. In this particular part of the research, the issue is what contextual factors may contribute to the effects of participation on productivity being negative. In the South African context, there are a number of plausible contextual factors which act against the benefits of participation.

To explore this result, the author recommends the adoption of an open-systems framework such that the multitude of contextual factors which impact on participation are recognised. Sashkin's (1984) model of participative management provides some input here. He suggests that there are three contingency factors which impinge on the process of participation, namely individual, organisational and environmental factors. However, from the result of this study, it may be suggested that the impact of environmental contingency factors is not the final stage of the process before performance. Rather, it is the very first 'filter' through which the process passes.

An examination of world history will confirm that for over thirty centuries, authoritarianism has been the major form of governance. With the passage of time, its expressions have changed. The methods of authoritarian control in Egyptian and Roman times differs from those of the feudal middle ages. The imperial and colonial policies of the 18<sup>th</sup> and 19<sup>th</sup> centuries differs from the authoritarian capitalist or socialist command-and-control methods of the recent past. What has emerged, however, are deeply-embedded authoritarian values that are profound and often invisible controlling forces within an organisation. More than any other element, they determine the nature of governance. They are often grounded in unconscious and deep-seated assumptions about the world in which we work. Governance values have been shaped over decades, even centuries of experience, learning and reinforcement. The deeply ingrained governance values have often become conscious only when they are challenged or threatened (McLagan & Nel, 1995).

reaches a certain point (goal). However, not one of the teams surveyed has reached that point. On the one hand it is generally thought that a major reason for this is that the teams do not actually know or understand what this 'goal' is. According to goal-setting theory, it can be argued that a goal which has been set too high for a team will demotivate the members and thus lead to worse productivity.

Overall, the result of this part of the study suggests that team factors are the most important factor influencing team productivity and that team motivation is a different process to individual motivation. While there has been some research looking at the overriding effect of group factors, there are unique dynamics within teams which necessitate a special examination of those team factors which override individual factors.

### **Psychological Participation**

From Table 12 it will be remembered that the perceived psychological participation of the subjects is correlated  $-.5389$  with productivity in the teams. Although the confidence level ( $p < .136$ ) is not particularly strong, for the purposes of an exploratory study such as this it is sufficiently strong to make some comments around this result. Such comments must be treated with caution, particularly in light of the alpha coefficient for this scale using this sample (.35).

Simply stated, this result suggests that those individuals who perceive themselves to have greater flexibility to participate in work decisions are not members of highly productive teams - increased participation in decision-making does not benefit overall team productivity.

This stands in stark contradiction to most research regarding the positive effects of participation on performance (Bragg & Andrews, 1973; Coch & French, 1948; Juralewicz, 1974; Latham & Yuki, 1975; Neider, 1980, amongst others). Similarly, it counters Locke and Schweiger's (1979) conclusion that employee participation has a negligible effect on productivity. Significantly, however, their conclusion highlighted the importance of examining contextual factors that may influence the effectiveness of participation.

This explanation fits in with McIntyre's (1988) definition of team motivation. He describes it as:

*"those extra-task characteristics of the team that make it competent, including team spirit, leadership, interpersonal skill, communication skill, work performance norms, values, and other attributes that serve to facilitate or inhibit team performance."*

Nowhere in this definition is there any reference to individual characteristics. Thus it seems that each individual's perceived internal work motivation has little to do with the team motivation.

Katz and Kahn (1978) proposed three types of motivational patterns or frameworks of which the internalised motivation framework is relevant to this study. Within this framework, motivation is enhanced in two ways. Firstly, an individual is motivated through the satisfaction derived from role performance. Secondly, motivation is enhanced through internalisation of a team's goals. However, this internalised motivation does not appear to be a predictor of team performance, which corroborates the assertion that "these motivational effects may or may not facilitate the attainment of a team's goals".

This part of the research confirms that individual factors (perceived internal work motivation) is not a good predictor of team motivation. In order to understand team motivation and its relationship to the performance of different teams, it is necessary to consider other factors.

Team functioning differs vastly from individual functioning. Employees need to understand the difference between performing as individuals and performing as a team.

In the case of internal work motivation, the individual characteristic can be overridden by the team. This is not the same with job satisfaction because, as was proposed, job satisfaction is more influenced by the team. Internal work motivation is seen as an inherent characteristic of an individual.

Another explanation of the result is grounded in goal-setting theory. The importance of goals for team motivation was highlighted in the literature review. It is known that on this particular mine-shaft, there is a new incentive scheme which 'kicks in' once the team production level

For the purposes of this study it is important to attempt to understand how all these factors interrelate and ultimately contribute to overall team effectiveness. The result of this study suggests that the individual factor (particularly, in this case, internal work motivation) does little to do with the overall productivity of the team. This relationship, if conceptualised, may be depicted as follows:



That is, whatever an individual's internal work motivation, the effect of it on performance will be overridden by the team characteristics. There are several theoretical explanations for this overpowering effect of team characteristics:

1. *The diving phenomenon.* Diving refers to a situation in which, because of the norms of an immediate work group, an individual is motivated to perform at a sub-optimal level (Mullen & Baumeister, 1987). Diving can take the form of members socialising each other to a lower level of performance. This suggests that in order to fully understand why one team is performing better than another an examination of the team norms in operation needs to be conducted. In the present study 'diving' may occur as a result of the relationship between the team leader and his members or the relationship between the team leader and the miner to whom he reports. If either of these relationships is poor, the response may be to influence others in the work-group to performance at a lower level.
2. *Social loafing.* This describes a process by which the motives, behaviours, feelings, etc., of an individual are changed by the presence or actions of others in a social setting. More specifically, it refers to the tendency of individuals in teams to decrease the amount of effort expended on a task in the absence of any explicit demands to decrease that effort. This effect has been found to increase as a team size increases, although, for this research it is not possible to say whether team size has contributed to the effect because not all team members were necessarily surveyed.
3. *Free-riding.* This phenomenon explains social-loafing as being a rationally- or economically-based decision to decrease effort that can be a self-perpetuating cycle.

related vocabulary). Building on that argument, it may be suggested that these individuals do not understand what it is to be intrinsically motivated. Added to this, the jobs which they perform have little intrinsic motivation potential. Another argument could be that the questions in the internal work motivation scale may result in individuals answering what they believe is right, rather than the truth - giving socially desirable answers ("I must say that I want to work hard, whereas for job satisfaction, I can say how I feel if I believe that I still make my best effort"). Thus, overall, the scale itself and the construct which the scale was measuring may not have been suitable for this study.

Alternatively, if it is assumed that this low correlation is in fact a fair indication of the relationship between individual perceptions of their internal work motivation and the productivity of the team they are in, the result may be interpreted using various theoretical propositions to substantiate it.

It should be stressed at the outset that this result should not be seen to imply that more productive teams are not motivated. As was mentioned in Chapter 2, motives must often be inferred from observed behaviour. From the observed behaviour of the better-performing teams, it may be inferred that they are more motivated. Hence the result suggests that an individual's perception of his internal work motivation is not what actually affects the productivity of the team. This leads to the question as to why it is that a team member who perceives himself to be highly internally motivated is not part of a highly productive team. As has already been suggested, the scale may not have been suitable for the sample. Or it may be suggested that the measure is dealing with a perception which may be distorted for varying reasons, some of which may have to do with the lack of understanding as discussed earlier. An alternative theoretical explanation may be that the productivity of a team is dependent on a multitude of factors. This explanation appeals in that it is self-evident that the effectiveness of a team is dependent on a multitude of factors as proposed in Tannenbaum's model depicted in Figure 1, an opinion that is corroborated by Kreitner & Kinicki (1989). Their formula indicates that motivation is a small part of the performance equation.

that both productivity and job satisfaction are independent affected by team factors. Clearly, therefore, it is vitally important to understand better the impact and nature of the team factors which affect the relationship between productivity/performance and job satisfaction.

In concluding this section, it can be said that the results of the present study suggest that the satisfaction-performance hypothesis is not an 'illusory correlation' and that certainly there is scope to design work that results simultaneously in high productivity and worker satisfaction.

### **Work Motivation**

Referring to the results section, the reader will be reminded that the individual's perception of his internal work motivation was negligibly correlated with productivity (+.034). A certain amount of caution must be exercised in interpreting this result, however, since the probability level of the correlation was <.931. This suggests that there is an extremely high probability that the result was obtained by chance. The necessity to exercise caution is further reinforced by the very low alpha coefficient for the work motivation scale (0.43). In addition, reference to Figure 7, showing the distribution of responses to this scale, indicates that the response rate was not normally distributed, thus refuting the legitimacy of the ANOVA and in so doing the rest of the statistical analysis. Notwithstanding these methodological problems, it is nevertheless considered worthwhile by the researcher to examine in more detail why the result is as it is. A number of possible reasons are proposed.

Initially, it was apparent in the administration of the questionnaire that this scale was not as easy to understand as the job satisfaction scale. A superficial examination of the response patterns as the data was captured gave further evidence to support the feeling that the individuals in the study had not understood the questions. There are a few plausible reasons why the scale or the concept being investigated in the scale was not understandable. One argument could be that the questions were examining a construct that these individuals could not relate to. For example, "I feel good about myself when I do this job well". The nuances implied in this statement may not have been understood, purely on an intellectual level, or conversely, may not have been understood on a linguistic level since Funakalo as a medium of communication is known to be limiting (due to it containing a small and specifically work-

expectation that exceptions to the norm can often lend greater understanding to relationships, than the norm in fact does.

At the first level effect, the ANOVA shows that the job satisfaction which has an F-statistic of 14.15 is the highest, implying the greatest relationship in the team. Because the team explains most variation in job satisfaction, it may be concluded that team effects have the largest impact on job satisfaction. Although, from the ANOVA tables, the team effect is high for internal work motivation and psychological participation, it is not as high as that for job satisfaction. This further suggests that individual factors may explain more of the differences for these two variables.

The most important difference between this study and previous research examining job satisfaction and productivity is the introduction of the team concept, and thus it must be one of the major contributors to the different result. Although, as previously highlighted, the literature on teams is not comprehensive, there is some evidence from the research on teams which contributes to understanding this result. Shaw (1976) notes that the effects of cohesion in a team have been related to team member interactions, satisfaction and team performance. This suggests another dynamic of team behaviour which deserves closer examination in order to understand more fully the factors which affect productivity in teams. Morgan and Lassiter (1992) highlighted that a team's perception of its own role, status, and value to an organisation is an important factor in determining the way a team interacts and performs.

One of the 'Team Motivation Guidelines' in Table 3 was that proposed by NATO (1980). From its studies NATO suggests that "enthusiasm and the 'right' attitude are often viewed by instructors as the most important differences between good and bad teams". However, NATO does not elucidate what is meant by the 'right' attitude. If the right attitude is the attitude to the job i.e. job satisfaction, then this research may well support this assertion.

The team factors highlighted may all contribute to explaining why the correlation between job satisfaction and productivity are particularly high in the present study. There may, however, be a number of other team factors which also contribute to the relationship between job satisfaction and productivity. The research highlighted in the literature review does suggest

There is little doubt that all the job satisfaction theories can provide explanatory value to certain aspects of this result. For example, application of Warr's (1987) Vitamin Model to job satisfaction suggests the importance of understanding the internal team dynamics. According to this model, the variables which are most likely to be affected by the team (eg. variety, clarity, control, interpersonal contact) are the one's which can ultimately have a toxic effect.

The strong relationship indicated by the correlation coefficient in this study gives no indication of the causality in the relationship. Thus, the study does not answer the question as to whether it is those teams which are highly satisfied who are therefore more productive or if those teams which are more productive are more satisfied. In addition, this study does not indicate what is causing the differences between the teams, a question which may be answered by more qualitative and/or longitudinal research. Nevertheless, the results meet the needs of the present exploratory study.

It is considered worthwhile to examine why this result is so much more significant than the other results in this study. One of the reasons may be methodological and relates to the scale used. The Overall Job Satisfaction scale (Warr, Cook & Wall, 1979) was designed for use with blue collar workers. Although they were blue collar workers in the United Kingdom who may be considered to be different to the workers included in this study, the scale appears to have been appropriate for this sample. This is confirmed by the Cronbach Alpha Coefficient for the scale based on this sample (.83). Additionally, observation of the participants while administering the questionnaire indicated that they understood the questions. The wording of the questions may also have contributed to honest answers. It is possible that the participants felt that it is acceptable to say that they are dissatisfied with certain facets of their jobs because they believe that they are working hard nevertheless.

It may be noted from Figure 5 that the team WNSC20 is an 'outlier' in this relationship. In fact, if it is removed from the correlational analysis, the coefficient shifts to 0.91. In order to avoid the complexities of statistically justifying such a removal, the researcher notes that it would be worthwhile to examine further the dynamics within this team. The reason for this is the

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members of teams. The results of the present study provide support for the notion that members of teams behave differently to individuals on their own and thus knowledge regarding individuals cannot be transferred directly to teams.

In addition, the results of the present study attest to the complex interaction of factors affecting team performance. Indeed, the author concludes that the state of empirical research on teams is understandable since to really understand teams necessitates more case study investigation rather than empirical analysis which cannot take into account the multitude of factors that impact on a team's performance.

The findings obtained in the present study confirm Pearson's (1992) assertion that organisational jobs are normally complex, multifarious, and seldom undertaken by individuals in isolation. Consequently, there remain many questions which need to be answered before teams can be fully understood and optimised. Nevertheless, the findings of this study do represent a small step in the direction towards understanding and clarifying this complex phenomenon.

## ***Recommendations For Future Research***

Based on the limitations and implications of this research, a number of recommendations can be made for future research. A significant part of the discussion examining the relationship between job satisfaction and team performance centred around the issue of the management of perceptions. This highlighted the vital role that a team leader plays in the overall performance of a team. Thus, future research aimed at understanding the role of the team leader in the performance of teams may enable a better understanding of what contributes to the differences in performance of teams.

Further, the present study made use of Funakalo as the medium of communication. Future research using the mother tongue of the subjects would ensure that subtleties being examined are in fact understood.

Given the lack of instruments/measures for understanding team processes specifically, there is a clear need for future studies to develop such instruments.

The complex multidimensional nature of team performance directs the value of using a case study or more qualitative approach to examining the interaction of factors contributing to the productivity of teams. Qualitative research will contribute to an understanding of why the situation is as it is, while longitudinal research will contribute to an understanding of causality.

Clearly, as this report has highlighted, team productivity is affected by a multitude of factors. This study isolated three such factors and as such contributes a small part to building an understanding of teams. There is certainly a need for further research to develop an effective research model.

## ***Conclusion***

For most of Industrial Psychology's past, the individual has been the focus of research effort. If Industrial Psychology is to remain a contributor to the understanding of people in organisations, it is clearly going to have to keep pace with the practical trend towards implementing teams. This means that, instead of attempting to understand people as individuals in organisations, researchers must focus more effort on understanding people as

### ***Methodological:***

- From a statistical point of view, the three hypotheses of this study were bi-directional. Given the conclusions from previous research, it may have been appropriate for the job satisfaction analyses to have used uni-directional statistical techniques. Uni-directional tests would have strengthened the level of significance.
- There may have been a tendency for the subjects to give socially-desirable responses in fear that there would be negative repercussions.
- As has already been highlighted, the Internal work motivation scale may have been unsuitable for the subjects of this study (confirmed by the extremely low alpha coefficient).
- Further, Funakalo as a medium of communication is not the most suitable for conveying the psychological issues being examined in such a study - indeed it was designed within the authoritarian system as a medium for giving instructions and thus the vocabulary is limited.
- Finally, a greater number of teams, possibly from a number of other mines, would be needed to take this study beyond an exploratory level.

### ***Conceptual:***

- This study was limited by the nature of the debate. Industrial psychology has primarily focused on the individual since the beginning of this area of research. However, as is apparent in organisations currently, more and more teams are becoming the focus of the organisation. From a systems point of view, it is clear that there are a multitude of factors which subsume the individual in a team. At this stage, research on these factors and new factors which do not exist when the focus is on the individual is scant. Thus, as a function of the current state of research on the subject of teams, the present study had to examine notions of team performance using individual measures. The shortcomings of these measures (particularly psychological participation and work motivation) for the purposes of examining team performance have already been discussed.

- The study provides support for a conception of performance that incorporates not only the in-role but also the out-role activities that almost any job requires. Thus this study indicated that a measure of team productivity provided a suitable measure of performance that incorporated both of these aspects of an employee's role.
- The internal work motivation of this blue collar work sample is primarily overridden by extrinsic factors, particularly, as proposed in this study, the team effects.
- An individual's perception of his psychological participation has a negative effect on performance.

Practically, there are also some valuable insights to be gained:

- With regard to teams, it is clear that there needs to be effective training particularly for team leaders who can play a pivotal role in affecting their members' perceptions and ultimately their performance.
- Work motivation needs to be approached from a broader point of view, not at the individual level, but rather at a team level.
- The requirements within the new labour dispensation, particularly with regard to workplace forums, need to be extremely carefully implemented.

The present study highlights some important considerations both for theory and practice. In particular, the present finding regarding the relationship between job satisfaction and productivity of teams contributes to a better understanding of both teams and productivity as the discussion as highlighted.

### ***Limitations***

The process of this study has revealed certain weaknesses in the research design which not only limit the generalisability of these results but, more importantly, highlight where the research can be built on in future.

The US Commission on the Future of Worker-Management Relations identifies employee participation as one of the goals for the twenty-first century:

*"Employee Participation and labour-management partnerships are essential to improved productivity, enhanced quality and economic performance, and an increased voice and higher living standards for American workers. It is in the national interest to see participation and partnerships sustained and expanded to cover a larger proportion of the American workforce and workplaces, and to address the full range of issues critical to improving workplace performance and advancing workers' economic positions and quality of working lives"*

A further reason which may contribute to understanding the negative relationship obtained in this study between psychological participation and productivity is the nature of the 'teams' on which this research is based. Participation is generally considered an inherent component of teamwork, however, in this study the author cautions that the teams cannot be considered teams in the true sense of the word. The 'teams' are in fact more like work-groups who have a common purpose but who are not aware of their common purpose. They have not been formally constituted as teams although they are commonly referred to as teams.

In conclusion, it is apparent that although the result of this study is not significant, the implementation of participation in South African organisations needs to be monitored particularly carefully in light of the negative contextual factors impinging on it.

### ***Implications***

Both theoretical and practical implications can be derived from this study.

Theoretically:

- The proposal that job satisfaction is to a large extent cognitively derived is supported by this study. Job satisfaction appears to have been affected to a large extent by team dynamics, although these were not assessed in the present study.

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I would like you to tell me how satisfied or dissatisfied you feel with each of these features of your present job. Please indicate the appropriate answer with an 'X'.

1. The physical working conditions.

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
1	2	3	4	5	6	7

2. The freedom to plan your own job.

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
1	2	3	4	5	6	7

3. Your fellow workers.

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
1	2	3	4	5	6	7

4. The recognition you get for good work.

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
1	2	3	4	5	6	7

5. Your immediate supervisor.

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
1	2	3	4	5	6	7

6. The amount of responsibility you are given.

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
1	2	3	4	5	6	7

7. Your rate of pay.

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
1	2	3	4	5	6	7

8. Your opportunity to use your abilities.

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
1	2	3	4	5	6	7

**Home Language:**

English 1	Afrikaans 2	Zulu 3	Xhosa 4
Tswana 5	North Sotho 6	South Sotho 7	Venda 8
Tonga 9	Tsonga 10	Ndebele 11	Shangaani 12
Setswa 13	Nyasa 14	Swazi 15	Pedi 16

Other: .....17.....

**Formal Education.**

1 None	2 5 years or less (up to Std.3)	3 5 to 7 years (up to Std. 5)	4 7 to 9 years (up to Std. 7)
5 10 years (Std. 8)	6 11 years (Std. 9)	7 12 years (Metric)	8 Any tertiary qualification

**APPENDIX 2 - Coding used for analysis of questionnaire**

Thank you very much for participating in this study. I would like to take this opportunity to assure you that whatever information you give in this questionnaire will remain anonymous. This is part of a research project which is intended to benefit your work but at the same time is being conducted independently by another company.

---

**Please would you give me the following biographical information:**

Job: .....

- 1 Winch driver
- 2 Team member
- 3 Team leader
- 7 Machine Operator
- 8 Driller
- 9 Water Jet Operator
- 10 Loco Driver

Team: .....

Are you in the same gang you were in last year? Yes <sup>1</sup> / No <sup>2</sup>

When did you start working at Blyvooruitzicht? 19.....

Please mark the correct block with a 'X'.

**Age (in years):**

21-25 <sup>1</sup>	26-30 <sup>2</sup>	31-35 <sup>3</sup>	36-40 <sup>4</sup>
41-45 <sup>5</sup>	46-50 <sup>6</sup>	51-55 <sup>7</sup>	56-60 <sup>8</sup>

**24. Do you feel you can influence the decisions of your immediate superior regarding things about which you are concerned?**

I can influence him:

To a great extent	To a considerable extent	To some extent	To a very little extent	I cannot influence him at all
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**25. Does your immediate supervisor ask your opinion when a problem comes up that involves your work?**

He always asks my opinion	He often asks my opinion	He sometimes asks my opinion	He seldom asks my opinion	He never asks my opinion
---------------------------	--------------------------	------------------------------	---------------------------	--------------------------

**26. If you have a suggestion for improving the job or changing the setup in some way, how easy is it for you to get your ideas across to your immediate supervisor?**

It is very difficult	It is somewhat difficult	It is not too easy	It is fairly easy	It is very easy to get my ideas across.
----------------------	--------------------------	--------------------	-------------------	---

16. Now, taking everything into consideration, how do you feel about your job as a whole?

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
----------------------------	-----------------------	-----------------------------	--------------	--------------------------	--------------------	-------------------------

The following set of statements has to do with how you feel about your current job. I would like you to indicate the extent to which you agree or disagree with the statement.

17. I feel good about myself when I do this job well.

Disagree strongly	Disagree	Disagree slightly	Neutral	Agree slightly	Agree	Agree strongly
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18. I feel a great sense of personal satisfaction when I do this job well.

Disagree strongly	Disagree	Disagree slightly	Neutral	Agree slightly	Agree	Agree strongly
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19. I feel unhappy when I discover that I have performed poorly on this job.

Disagree strongly	Disagree	Disagree slightly	Neutral	Agree slightly	Agree	Agree strongly
-------------------	----------	-------------------	---------	----------------	-------	----------------

20. My own feelings generally are not affected much one way or the other by how well I do my job.

Disagree strongly	Disagree	Disagree slightly	Neutral	Agree slightly	Agree	Agree strongly
-------------------	----------	-------------------	---------	----------------	-------	----------------

21. Most people on this job feel a great sense of personal satisfaction when they do their job well.

Disagree strongly	Disagree	Disagree slightly	Neutral	Agree slightly	Agree	Agree strongly
-------------------	----------	-------------------	---------	----------------	-------	----------------

22. Most people in this job feel unhappy when they find they have performed the work poorly.

Disagree strongly	Disagree	Disagree slightly	Neutral	Agree slightly	Agree	Agree strongly
-------------------	----------	-------------------	---------	----------------	-------	----------------

23. In general, how much say or influence do you feel you have on what goes on in your team?

A very great deal of influence	A great deal of influence	Quite a bit of influence	Some influence	Little or no influence
--------------------------------	---------------------------	--------------------------	----------------	------------------------

**7. Your rate of pay.**

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
----------------------------	-----------------------	-----------------------------	--------------	--------------------------	--------------------	-------------------------

**8. Your opportunity to use your abilities.**

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
----------------------------	-----------------------	-----------------------------	--------------	--------------------------	--------------------	-------------------------

**9. Industrial relations between management and workers in your company.**

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
----------------------------	-----------------------	-----------------------------	--------------	--------------------------	--------------------	-------------------------

**10. Your chance of promotion.**

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
----------------------------	-----------------------	-----------------------------	--------------	--------------------------	--------------------	-------------------------

**11. The way your mine is managed.**

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
----------------------------	-----------------------	-----------------------------	--------------	--------------------------	--------------------	-------------------------

**12. The attention paid to suggestions you make.**

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
----------------------------	-----------------------	-----------------------------	--------------	--------------------------	--------------------	-------------------------

**13. Your hours of work.**

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
----------------------------	-----------------------	-----------------------------	--------------	--------------------------	--------------------	-------------------------

**14. The amount of variety in your job.**

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
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**15. Your job security.**

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
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**Formal Education:**

None	5 years or less (up to Std.3)	5 to 7 years (up to Std. 5)	7 to 9 years (up to Std. 7)
10 years (Std. 8)	11 years (Std. 9)	12 years (Matric)	Any tertiary qualification

*I would like you to tell me how satisfied or dissatisfied you feel with each of these features of your present job. Please indicate the appropriate answer with an 'X'.*

**1. The physical working conditions.**

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
----------------------------	-----------------------	-----------------------------	--------------	--------------------------	--------------------	-------------------------

**2. The freedom to plan your own job.**

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
----------------------------	-----------------------	-----------------------------	--------------	--------------------------	--------------------	-------------------------

**3. Your fellow workers.**

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
----------------------------	-----------------------	-----------------------------	--------------	--------------------------	--------------------	-------------------------

**4. The recognition you get for good work.**

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
----------------------------	-----------------------	-----------------------------	--------------	--------------------------	--------------------	-------------------------

**5. Your immediate supervisor.**

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
----------------------------	-----------------------	-----------------------------	--------------	--------------------------	--------------------	-------------------------

**6. The amount of responsibility you are given.**

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
----------------------------	-----------------------	-----------------------------	--------------	--------------------------	--------------------	-------------------------

# APPENDICES

## APPENDIX 1 - Questionnaire

Thank you very much for participating in this study. I would like to take this opportunity to assure you that whatever information you give in this questionnaire will remain anonymous. This is part of a research project which is intended to benefit your work but at the same time is being conducted independently by another company.

---

**Please would you give me the following biographical information:**

Job: .....

Team: .....

Are you in the same gang you were in last year? Yes / No

When did you start working at Blyvooruitzicht? 19.....

Please mark the correct block with a 'X'.

**Age (in years):**

21-25	26-30	31-35	36-40
41-45	46-50	51-55	56-60

**Home Language:**

English	Afrikaans	Zulu	Xhosa
Tswana	North Sotho	South Sotho	Venda
Tonga	Tsonga	Ndebele	Shangana
Setswa	Nyasa	Swazi	Pedi

Other: .....

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- Strauss, G. (1955). *An experiment in worker control over pacing*. In W. Whyte (Ed.), *Money and Motivation*. New York: Harper.

25. Does your immediate supervisor ask your opinion when a problem comes up that involves your work?

A very great deal of influence	6	A great deal of influence	4	Quite a bit of influence	3	Some influence	2	Little or no influence	1
--------------------------------	---	---------------------------	---	--------------------------	---	----------------	---	------------------------	---

26. If you have a suggestion for improving the job or changing the setup in some way, how easy is it for you to get your ideas across to your immediate supervisor?

It is very difficult	1	It is somewhat difficult	2	It is not too easy	3	It is fairly easy	4	It is very easy to get my ideas across	5
----------------------	---	--------------------------	---	--------------------	---	-------------------	---	--	---

The following set of statements has to do with how you feel about your current job. I would like you to indicate the extent to which you agree or disagree with the statement.

17. I feel good about myself when I do this job well.

Disagree strongly	1	Disagree	2	Disagree slightly	3	Neutral	4	Agree slightly	5	Agree	6	Agree strongly	7
-------------------	---	----------	---	-------------------	---	---------	---	----------------	---	-------	---	----------------	---

18. I feel a great sense of personal satisfaction when I do this job well.

Disagree strongly	1	Disagree	2	Disagree slightly	3	Neutral	4	Agree slightly	5	Agree	6	Agree strongly	7
-------------------	---	----------	---	-------------------	---	---------	---	----------------	---	-------	---	----------------	---

19. I feel unhappy when I discover that I have performed poorly on this job.

Disagree strongly	1	Disagree	2	Disagree slightly	3	Neutral	4	Agree slightly	5	Agree	6	Agree strongly	7
-------------------	---	----------	---	-------------------	---	---------	---	----------------	---	-------	---	----------------	---

20. My own feelings generally are not affected much one way or the other by how well I do my job.

Disagree strongly	1	Disagree	2	Disagree slightly	3	Neutral	4	Agree slightly	5	Agree	6	Agree strongly	7
-------------------	---	----------	---	-------------------	---	---------	---	----------------	---	-------	---	----------------	---

21. Most people on this job feel a great sense of personal satisfaction when they do their job well.

Disagree strongly	1	Disagree	2	Disagree slightly	3	Neutral	4	Agree slightly	5	Agree	6	Agree strongly	7
-------------------	---	----------	---	-------------------	---	---------	---	----------------	---	-------	---	----------------	---

22. Most people in this job feel unhappy when they find they have performed the work poorly.

Disagree strongly	1	Disagree	2	Disagree slightly	3	Neutral	4	Agree slightly	5	Agree	6	Agree strongly	7
-------------------	---	----------	---	-------------------	---	---------	---	----------------	---	-------	---	----------------	---

23. In general, how much say or influence do you feel you have on what goes on in your team?

A very great deal of influence	5	A great deal of influence	4	Quite a bit of influence	3	Some influence	2	Little or no influence	1
--------------------------------	---	---------------------------	---	--------------------------	---	----------------	---	------------------------	---

24. Do you feel you can influence the decisions of your immediate superior regarding things about which you are concerned?

I can influence him:

A very great deal of influence	5	A great deal of influence	4	Quite a bit of influence	3	Some influence	2	Little or no influence	1
--------------------------------	---	---------------------------	---	--------------------------	---	----------------	---	------------------------	---

9. Industrial relations between management and workers in your company.

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
1	2	3	4	5	6	7

10. Your chance of promotion.

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
1	2	3	4	5	6	7

11. The way your mine is managed.

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
1	2	3	4	5	6	7

12. The attention paid to suggestions you make.

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
1	2	3	4	5	6	7

13. Your hours of work.

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
1	2	3	4	5	6	7

14. The amount of variety in your job.

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
1	2	3	4	5	6	7

15. Your job security.

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
1	2	3	4	5	6	7

16. Now, taking everything into consideration, how do you feel about your job as a whole?

I'm extremely dissatisfied	I'm very dissatisfied	I'm moderately dissatisfied	I'm not sure	I'm moderately satisfied	I'm very satisfied	I'm extremely satisfied
1	2	3	4	5	6	7

**Author: Cotterrell, Theresa.**

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