**MBA Dissertation**

# "An Empirical Study of Employees' Perception of Teamwork at AECI Bioproducts"

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# Preface

This dissertation is the work of the author that was carried out at AECI Bioproducts, from September 2001 till April 2002 under the supervision of Professor D.A.L Coldwell.

This dissertation is the original work of the author and has not been submitted in part, or in whole, to any other university. Where use has been made of the work of others, it has been duly acknowledged in the text.

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## Acknowledgements

I wish to thank the staff of AECI Bioproducts for participating in my research programme. The management team of Bioproducts for suggesting the topic and supporting me through it. I wish to thank my supervisor Professor David Coldwell for his guidance and support in carrying out this research. I would also like to thank my family for being supportive during my studies and during the writing up of this paper.

## Executive Summary

AECI Bioproducts implemented the team concept as its management structure in it first ventures the lysine plant. The plant is AECI's first venture into Biotechnology. After a successful commissioning phase the plant was hampered by significant technological problems that prevented the plant from reaching design capacity. To compound matters the implementation of the Team Concept was not fully conceptualised resulting in poor implementation.

The poor implementation resulted in teams being uncoordinated and often resulted in conflict between management and teams. The benefits that were envisaged from applying the team concept did not occur.

The poor lysine prices and the inability to produce at design, resulted in significant losses being generated. This resulted in significant retrenchments at management level. The team structure remained intact despite the negative results achieved. The company recommitted to the team concept and structures were overhauled to ensure the success of the teams.

In 2001 Bioproducts is a vibrant thriving organisation. The productivity is above design and all benchmarks have been attained if not bettered. The organisation is one of the forerunners in the Biotechnology field and possesses skills and capabilities, which can be maximised in the future.

The management question is how effective are teams and what is their relationship to job satisfaction. In this study we look at how effective teams are at Bioproducts and what is the level of job satisfaction among employees. We then determine the relationship using correlation analysis between perceptions of teamwork and job satisfaction. We also investigate the relationship between teamwork and organisational commitment, teamwork and work demands and teamwork and stress.

Employees that were part of teams were given a questionnaire prepared by the author using the literature review conducted. There are seventy employees in the organisation and fifty-seven employees that belong to teams took part in the research.

It was discovered that teams at Bioproducts are performing well within the organisation. Teams have high levels of autonomy, responsibility and accountability. There is a high degree of teamwork. Teams are interdependent and are co-operating and communicating well. There is a significant focus on job enrichment by management. The organisation is supporting and reinforcing teamwork well.

The employees are committed to the organisation and there are high levels of job satisfaction among employees. Areas of concern that need to be looked at are the stress among employees, the insecurity surrounding ownership, communication within the organisation and training.

The correlation analysis between teamwork and job satisfaction reveals that as individuals perception of teamwork increases job satisfaction increases and similarly as individuals perception of teamwork decreases job satisfaction decreases. The correlation between perception of teamwork and organisational commitment also reveals that as teamwork increases organisational commitment increases. One can conclude that team members that are happy in teams are more likely to be committed to the organisation and have increased job satisfaction.

Stress of individuals increase as a result of teamwork, this is evident in the correlation analysis carried out. Organisations need to take heed of this since most individuals are not adequately equipped to deal with increases in stress levels.

Teamwork places an increase in demands on employees and this factor together with stress levels need to be monitored.

Overall the organisation is well equipped to deal with the ever-changing future and in terms of its human capabilities is well set to take advantage of its competitive edge once the issues that have been identified have been dealt with.

**Chapter One**

## 1.1 Overview of the Organisation

AECI Bioproducts was commissioned in 1994 as a subsidiary of AECI. The mission of the company was to implement the new fermentation technology developed in-house by AECI Research and Development. AECI hoped that the new lysine plant its first Biotechnology venture would contribute substantially to the growth of the company's technology and long-term strategy in diversifying away from the chemical business. From it's inception the founder wanted to create a more entrepreneurial and less bureaucratic environment .The first plant was commissioned to manufacture Lysine, an amino acid used in the animal feed industry. The Plant was the first in the Southern Hemisphere to harness the latest developments in Fermentation Technology to be used in Lysine manufacture on a large scale.

After a successful commissioning phase the project ran into problems in terms of reaching design output. Solving the new technological problems proved to be difficult. The price of lysine had in the meantime gone through the roof and the organisation was incapable of taking advantage of this opportunity. It took approximately two years to solve the technical problem. However, just as production began to reach a constant output, the Asian Financial Crisis occurred sending the lysine price into free fall. It was cheaper to shutdown then to produce lysine. The AECI Group was also bearing the brunt of the collapse of other commodity prices on the World Markets. Anglo the holding company also initiated a strategic shift away from the chemical business. The AECI Group decided to buy itself out of the group. In order to do this it required to generate capital and the only way to achieve it strategic goals was to sell its non- core assets. The fact that AECI Bioproducts was putting a significant drain on the AECI coffers resulted in the organisation putting the company up for sale. However at this particular time with the crash in the market there were no significant takers who would take the risk on an organisation that was not generating a profit.

## 1.2 Team Concept as Defined by Management

Employees are involved in the daily management of Bioproducts business through work teams. These teams are empowered to take corrective actions to resolve day to

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day problems at work. They also have direct access to information that allows them to plan, control and improve their operations

The high level of automation and the fact that the plant was new allowed AECI to apply a different management culture to the organisation. The company chose to apply the team concept. The management of Bioproducts identified the following as benefits in applying the team concept and used its parent company as a benchmark of performance.

## Benchmark to AECI

1. Lower incidence of environmental incidences than the AECI average.
2. Lower absenteeism than the AECI average
3. Better safety record than the AECI average
4. Lower turnover than AECI average.
5. Down time lower than the AECI average
6. Outside reviewers of job definitions will agree that they are less structured and less rigid than generally elsewhere within AECI.

## Benefits for Team

1. As far as possible individuals and teams will have 'whole' jobs which are cost effective and motivating
2. Team Members have more freedom to act.
3. More rapid and effective conflict resolution
4. No 'us and them' syndrome/feeling that we are all in it together
5. Everyone feels a fully contributing member of the team.
6. Adaptability/ quick decision-making.
7. Team members more creative and motivated.
8. Team members developed to their full potential
9. Multiskilling within teams easier
10. People feel rewarded for their contribution.

## Benefits for AECI Bioproducts

1. Fewer operators induced errors.
2. Better problem solving because more input into problems
3. Team members continually making suggestions for improvements

4. Continuous improvement in plant performance
5. Due to fewer layers, improved communication
6. No loss of production or accident will be attributed to an unattended routine or minor maintenance item.
7. Lower employee costs from removal of traditional foreman position.
8. Team members will be paid according to individual performance. Performance review system, performance based pay.
9. No perceived need for shift foreman will develop within the first year of operation.

**Benefits for Management**
1. The Maintenance and Process Manager will not feel as if they have taken the role of maintenance foreman and shift foreman respectively.
2. 'Controlling management' role replaced with leadership.
3. More time for management to focus on strategic issues.

**Miscellaneous**
1. Every member of every team will be able to recite the general definition and expectations of the AECI Bioproducts team concept.
2. Process and maintenance workers from other parts of Umbogintwini will tacitly give approval by actively bidding for vacancies.

**1.3 Teams Involved at Bioproducts**

**The Operations Management Team**

A single Operations Management Team consisting of the Manufacturing Manager, Operations Manager, Plant Process Manager, Instrument and Controls Manager, Maintenance Manager, Technology Team Leader and a Training Specialist guides the plant. This team is responsible for the daily running of the production plant.

**The Production Team**

The production team consists of 5 team members and a shift team leader. The production team is responsible for the daily running of plant on a shift basis. There are four shifts that operate the plant. Coupled to the plant is a team that operates the bagging plant. This team has not been considered for this research.

**The Maintenance Team**

The Maintenance Manager who has responsibility for the entire maintenance functions on the plant leads this team. To him reports an Instrument Manager who is responsible for the maintenance of instruments and the control systems on the plant. The team consists of a control engineer, instrument technicians, instrument mechanicians, and mechanical technicians. The maintenance team employs a number of fixed term contractors however they have excluded from the study.

**The Process Technology Team**

The process technology team reports to a Team Leader and is responsible for plant modifications and assistance in troubleshooting on the plant. They provide direct support to the production and maintenance teams.

**The Information Technology Team**

This team is responsible for all the Information Technology needs of the organisation. The Information Technology Team consists of an Information Technology Manager and 9 team members. They are responsible for new developments and maintaining the existing systems on the plant.

**The New Business Development Team**

The development team is split into two teams. The one team is the Technology Development Team, which consists of engineers of various disciplines who are responsible for design and implementation of new technology on the plant. The New Business Laboratory Team is responsible for biotechnology developments within the laboratory.

# Chapter Two

## 2.1 Problem Statement

In 1995 management began to notice a slump in performance and a negative attitude persisting among plant personnel especially the production teams. Management in order to determine the level of job satisfaction within the production environment and to identify areas of dissatisfaction then performed a survey. The survey revealed that the level of job satisfaction was low. Production Technicians felt some levels of stress. Reasons cited for causes of stress were pressure from management, high workload and lack of training. Production Technicians disliked the manual content of some of their jobs as well as some of the menial tasks performed. On the question of what management could do better there was a resounding need for management to provide more training and point out mistakes rather than reprimanding. On the question of what will motivate Production Technicians to perform better more money and more perks were identified as stimulants. On the question of what form of recognition is preferred there was a resounding need for more praise in front of peers. Despite the concern production technicians still felt part of Bioproducts?

The problem could be traced to poor implementation. Top management proposed to practice their personal definitions and common sense knowledge of so called self-managed teams without many prior consensus's' and in fact without any goals and milestones. Not surprisingly the teams were exposed to any company literature, supervisory training manuals, goal statements or company policy books that clearly define the non-traditional management structure. Technicians said that a definition was 'lacking' or was not 'clear' or was 'vague and uncertain' or 'not concrete'. Teams because of a lack of a concrete working definition decided for themselves what the team concept meant. Their own definition went beyond management's original intention and included the complete absence of any division between management and production staff. Specifically they expected that management and production staff would logically work together as members of the same team. This was never the case

because production teams were separate and distinct from the single management team.

## 2.2 Implementation Strategy

Apart from the decision to employ a non-traditional management structure at the time the plant was built, no blue print was in place to guide the company in the start up of the facility. The team concept was implemented spontaneously and adhoc. A SWAT team of seven members were employed to commission the plant and their training consisted of a month and this was more related to plant operations and learning the new technology in place rather than focusing on the softer skills required to function as a team. The other members of the team were introduced to the team on an adhoc basis without undergoing proper training on teams. Team members were expected to learn on the job. One rationale for the lack of strategic planning was that the risks inherent in bringing untested novel technology to full scale dwarfed the risks associated with the learn-as-we-go approach to management. The lack of an implementation strategy was a consequence of three facts.

1. Bioproducts was excited about commercialising its lysine technology and allowed itself to become more focused on technology issues rather than operations management.
2. The personal style of some members of senior management led to overconfidence and a subsequent lack of detailed planning.
3. Bioproducts was a young company possibly without the breadth of experience required to realize that implementation of a non-traditional management structure was a non-trivial undertaking.

## 2.3 Key Hurdles and Problems

The technology for lysine did not work very well when implemented. As a result of technical problems beyond the control of production staff, responsibility for daily decisions were delegated sporadically, at best. Worse yet, there were instances were responsibility was delegated and later taken away because management discovered that advice given to production technicians to guide routine process decision were not reliable. Inability to grasp certain key technical issues made mentoring and training of

the production staff practically impossible in the process of process control and optimisation. To a certain extent technology transfer issues handicapped the team concept.

Management had a fundamental lack of credibility with the production staff, which related to issues regarding the payment of overtime and payment for public holidays. Furthermore the management team was visibly inexperienced. Consequently the production staff were waiting for the organisation to abandon the notion of a non-traditional management structure. It took the organisation three years; a period of restructuring and a high turnover of staff for teams to realise that a non-traditional management structure was inevitable and management was not going to abandon the team concept.

The third issue handicapping the implementation of the Bioproducts team concept was a fundamental lack of certain basic skills within the production staff. From one point of view, many team members did not have the necessary skills in analytical thinking; mechanical aptitude, multitasking, three dimensional visualisation and problem solving to effectively participate in a self managed team in a chemical plant. Bioproducts underestimated the amount of training that would be required to build competent teams in which no team member would be personally intimidated by his perceived inability to handle the job. To some extent this can be traced to the inferior education received by some employees. Interpersonal skills, specifically in conflict resolution were also underdeveloped among production staff. Facing up to one's peers proved to be difficult for those, again with a cultural bias to avoid conflict. This impeded rapid resolution of even minor problems because they stifled forthright and open communication.

The lack of a defined implementation strategy had far reaching consequences for the team concept. With no clear road map, management naturally sent mixed signals to the teams regarding their understanding of the team concept and expectations. This led to a free for- all- race to define the team concept. During the first few years following start up, almost any employee demand became a part of defining the team concept. Conversely when management's legitimate authority ran counter to employees demands, the team concept was denounced a sham. Employees naturally took advantage of management's lack of forethought, and the stage was set for future misunderstandings and eroding management credibility.

## 2.4 Survey Conducted

In 1997 performance and satisfaction levels had deteriorated to an alarming extent prompting management to appoint an independent consultant to carry out a climate survey and commence remedial action to improve the situation. The survey looked particularly at the quality and effectiveness of the relationship between managers and subordinates The conclusion drawn are presented with the permission of Interact Human Resources consultant.

1. *The organisation is unusual in South Africa in the sense of all of its employees having high levels of education. At all levels there is recognition of the technical competence of individuals, whether senior or subordinate.*

2. *Commitment to the success of Bioproducts is evident in management levels. While the "Technician" level sees the venture as sound and with a secure future there is little sense of commitment.*

3. *The climate is strongly influenced by perceptions of distanced relationships, particularly at the technician level. Middle managers share the perception, but see it as less constraining. The concept of self-accountability and self-directing workgroups is perceived to have resulted in no " man management" taking place. Redefining the relationship between "manager" and subordinate or workgroup will effectively eliminate the problem. The maturity and intellectual capacity of the organisation should allow rapid development of the climate.*

4. *The perception exists that managers are under stress due to workload. Management is seen as holding themselves accountable for the success of Bioproducts. This sense of individual accountability is seen as creating a climate in which senior managers involve themselves in decision making at levels below those, which are appropriate out of determination to eliminate error and loss. While the perceived behaviour is understood by subordinates, their perception is of a lack of authority and involvement and hence a constraint on their ability to be "self managing"*

5. *While perceptions of subjective behaviour by managers exist, there is no indication of fundamental relationship barriers to development. Even where individuals express a perception of subjectivity (variable behaviour) this is*

*perceived, as a result of circumstances and lack of management skill, not*
*deliberate bias or prejudice.*

6. *The deliberate flat structure and "network" approach has resulted in some*
   *confusion of reporting lines. Individuals are not clear on their "source of*
   *management", frequently having difficulty identifying a direct manager or*
   *subordinate. The individuals recruited at the outset bought in to the stated*
   *operating philosophy of individual accountability and delegated authority.*
   *Their original high expectations are perceived not to have been met, resulting*
   *in frustration, disappointment and comment, which, on first sight appear*
   *alarmingly negative. In effect managers and technicians share the same sense*
   *of disappointment at apparent failure to achieve an operating organisation*
   *with the culture promulgated at the inception of the project. Developing*
   *common understanding of this in a consultative process will lead to agreed*
   *manager/ subordinate behaviour, which will develop consistency and*
   *objectivity. With consistent behaviour trust will develop, resulting in a climate,*
   *which allows issue-affecting productivity to be addressed openly.*

The strategy adopted by Interact Human Resources consultant was to debrief the
survey as a problem solving strategy throughout the organisation. Thereafter training
sessions were held to deal with areas of particular concern. The sessions did to a
certain extent have a positive impact on the climate at Bioproducts and allowed a
working relationship between management teams and subordinate teams to be
develop.

The survey however had more far reaching consequences. Senior Management was
forced to reconsider the team structure. The difficulties facing the organisation in
terms of ownership and reducing costs allowed the organisation to reinvent itself.
Significant restructuring took place. Retrenchments at management level were
particularly severe. The organisation recommitted to the team structure. Employees
who were part of the teams and had significant understanding of the problems being
faced by the teams were promoted to management. A training specialist position was
created to specifically fast track the training of teams. The experience gained by
production team members also made them highly marketable and the insecurity
around the future of the organisation resulted in many of the team members leaving.

This allowed the teams to be rejuvenated. Management was allowed to correct the mistakes that had to an extent crippled the organisation.

In 2001 the plant is in a highly productive unit. Production targets, safety and environmental goals are being consistently met. This begged the question of whether these achievements are related to the team concept. The question being asked by management is how effective are workgroups at Bioproducts? If workgroups are effective what is their relationship to job satisfaction? This is the basis of the research that follows.

## 2.5 Research Objectives

To determine the effectiveness of work groups at Bioproducts. Personnel at Bioproducts will be asked to evaluate the effectiveness of their particular workgroup. The positive evaluation of the teams will infer that the teams are highly effective conversely a low or poor evaluation of workgroups will reflect that the effectiveness of work groups is low. The individuals will then be asked to rate their levels of job satisfaction. A correlation analysis will be undertaken to determine whether there is a relationship between effectiveness of work teams and job satisfaction.

The hypothesis if an individual evaluates the effectiveness of work teams high he will indicate a high level of job satisfaction. Conversely if the evaluation of workgroup is low then he experiences low job satisfaction. This relationship can be used to identify whether working in teams is effective and resulting in employees having job satisfaction and therefore motivated to perform better. The relationship between teamwork and work demands, teamwork and organisational commitment as well as teamwork and work stress is also investigated. The study could be used to identify the areas of strength within the organisation and the areas in which the organisation needs to put in effort to gain the maximum benefit from its employees. The study also serves as a performance measurement tool. The individual evaluating the team concept and job satisfaction is a measure, which can be recorded for future reference. In the future the organisation can repeat the survey and once again determine the effectiveness of teams and job satisfaction in the organisation at that particular period. It can also be used as a reference to gauge the effectiveness of any future change in organisational structure and corporate culture.

# Chapter Three

## 3.0 Literature Survey

## 3.1 Introduction

As corporations strive to boost earnings in an increasingly competitive environment, they inevitably turn their attention to the issue of employee productivity. When employees are unsatisfied with their current work situation, productivity decreases, tension builds in the workplace, and morale becomes very low. Companies have known historically that morale affects productivity, yet management has struggled to come to terms with the factors that can create positive morale and an environment that attracts and retains workers and encourages them to produce. Many programs focused on enriching jobs and supporting self-directed work teams have proven to be effective

Almost in its entirety, the 20th century has been marked by the accelerated rate of technological development, staggering improvements in information/communication systems and ever increasing complexity of organizational systems. However, with all the impressive development and associated changes, the technological progress does not seem to have been matched by the adequate change in viewing people's relation to the rapidly increasing rate of technological change.

The theories of organizational effectiveness and human motivation - like Taylor's Scientific Management, Skinner's Behavioural Model and Maslow's Hierarchy of Basic Human Needs – that were developed in the earlier part of the 20th century are still widely used in the business world today. According to Taylor (1911), jobs are designed by industrial engineer and workers should follow managers' instructions without deviation. By doing tasks this way, both the company and the worker would benefit, particularly if the worker has a share in productivity gains. According to Skinner's (1953) theory of operand conditioning, workers are motivated if they are rewarded for the "right" behavior. By manipulating rewards, the experimenter can increase productivity. Maslow's (1954) hierarchy of needs (the word "hierarchy" speaks for itself somewhat) implies that people can be categorized according to their dominant needs. Lower level workers are driven by survival needs while higher levels (managerial elite) strive for status, power, and ultimate self-realization.

There is a question whether the theoretical foundations that support the notion of manager as a parental figure and workers as children in relation to the parent, are applicable in the contemporary workplace of the 1990s (Maccoby, 1993). Taylor's subjects dealt with shovels and assembly lines. This assumption does not hold for modern knowledge workers who use computers. It is more of a rule rather than an exception for knowledge workers to know more about their jobs than their managers do. Skinner's scientific proofs came from starving rats and pigeons and showing that they can be conditioned to do simple tasks. The argument to this motivational and behavior approach is supported by Harlow's experiment with monkeys (Maccoby, 1993). Harlow found that well-fed monkeys learned to solve problems without any extrinsic rewards. However, when the animals were first starved and then rewarded for successful problem solving, their performance deteriorated. "They were thinking about the bananas rather than the problem" (Maccoby, 1993, p. 51). Harlow showed that when it comes to learning and solving problems, intrinsic motivation is more effective than extrinsic incentives. Today's employees are more educated and potentially innovative, they want to "use their brains" (Maccoby, 1993, p.51). With the globalization of the modern market, the increasing organizational complexity and intensifying competition in the contemporary business world, it is becoming more clear that many mechanistic, hierarchically structured organizational systems cannot meet the increasing demands of efficiency, speed and flexibility. The workers must become more of an asset rather than mere performers who are controlled like machine parts. In organizations on the competitive edge, the workers must be empowered, and must participate in continuous improvement. This implies a certain amount of independence and decision making authority in what the workers do.

So there is a dilemma. On one hand, Western manufacturing tradition was developed through highly skilled artisan labor – the people who held pride and had a sense of meaning in their work. On the other hand, the artisan labor could not meet the efficiency standards of mass production where people were viewed like machines. The emerging concept of work teams could be an answer to this dilemma. Teams are groups of people of the size small enough to preserve the individuality of the group members, but at the same time more efficient and more powerful (in terms of skills and knowledge scope) than a single individual. Therefore, by its mere nature, the concept of teams potentially includes two polarized concepts of individual expression

and a sense of meaning in one's work on one hand, and collective power and efficiency on the other hand. However, a mere bringing of two different principle-based concepts together does not necessarily mean that the two will combine in a "peaceful" way. The idea of being a team player is second to the notion of self-reliance and individualism. However, teams are made up of individuals with each having their own idiosyncrasies, human frailties, and personal values. Individual differences of team members can hamper team progress through lack of understanding, agreement and communication and ineffective decision making. Teams should not be used in instances that do not allow members to be active in the decision making process of determining their actions. Such set-ups will only promote distrust, low morals, rebellious acts and other self-destructive behaviors. (Leavitt 1964).

Teams that fail can be found in an environment that includes such things as a lack of personnel resources, poorly detailed business plans, lack of clear roles and responsibilities, no clear chain of command and lack of sponsor support. If the correct development process is implemented, many of these problems can be eliminated and greatly improve the possibility of cross-functional team success. Self directed Work teams are a form of long term team. These teams are used for mission purposes. Self directed work teams are usually the teams, which gives the company its Human Resources competitive advantage. Self directed work teams are among those with the lowest success rates because of the extensive systems integration required ('they affect the information system, administrative control system, human resources systems and so on', Ricardo, 1996,p11). The long-term teams, unlike task force teams, have the opportunity to employ the benefits of a learning curve thus given the chance to correct, improve and outperform other teams. These teams are what are known as knowledge and /or learning teams therefore, for many companies, the most valuable

## 3.2 Self-Directed Work Teams

The social range of job enrichment is usually small, effecting mostly individual jobs; not necessarily departments or entire companies (Cotton, 1993: 142). Experiments in granting more autonomy to individuals in more enriched job naturally evolved into

work on expanding the concept to groups of workers called self-directed work teams. C. Herbert Shivers(1999: 34-5) defines self-directed work teams as "small groups of people empowered to manage themselves and the work they do on a daily basis." These teams join to perform tasks such as job assignments, work scheduling, production and service-related decision making, implementing corrective actions, interaction with external customers, conducting annual performance appraisals, preparing budgets, and some hiring/firing decisions.

While self-directed work teams may sound similar in concept to job enrichment, there is a very important distinction which is that teams have day-to-day responsibility of managing themselves with minimal supervision. In practice, the teams make decisions on a daily basis about the work to be done and how it is to be done based on shared opinions and information. Kimball Fisher(1993: 15) claims that the self-directed work teams are the highest degree of empowerment available to workers.

According to Bushe(1996: 78, 83), there are several benefits to corporations of using self-directed work teams. Among the most visible are improvements in employee and management morale, in the quality of products and service, in customer service, and in productivity. As teams become more advanced, they will be able to meet with customers and focus on the customers' needs, not the needs of their supervisors. In addition, the prospect of less stress is a major motivation to operate as a self-directed work team.

In considering the programs, managers should anticipate the effects of a change in corporate strategy or in the workplace environment on the worker. When given the opportunity to participate in goal setting and decision making which affects their work, many employees will often accept change more readily than those who were not offered the chance to contribute their opinion (Shivers, 1999: 34). While the benefits of self-directed teams are attractive, managers should also consider whether implementing a self-directed work team would be beneficial to their company. Specifically, "appropriate organisational design enables an organization to execute better, learn faster, and change more easily. Teams should be adopted because they are the best way to enact the organisation's strategy and because they fit with the nature of the work, not because other companies are using teams and claiming success" (Mohrman, 1995: 7).

Before implementing self-directed teams, managers must address several issues, each

of which poses a significant threat to the success of the program. First, authoritative boundaries that recognize or decide who is in charge must be established. Task boundaries, addressing who is supposed to perform which functions, must be set. Finally, political boundaries, concerning the objectives of the parties, must be addressed. Clear boundaries usually yield positive results (Bushe, 1996: 79). Companies implementing self-directed work teams should be aware that teams typically go through five stages in their maturity cycle: investigation, preparation, implementation, transition, and maturation. Some teams take years to make their way through all five stages, and some finish in a matter of months. Some never finish because they become blocked by one of the earlier stages. In the investigation stage, managers explore the idea of developing a new self-directed work team or empowering an existing team further. The primary challenge in this stage is achieving an understanding of the upcoming changes.

During preparation, companies endure the planning, designing, and preparation required for a successful transition. Here, the main challenge is accepting the changes (Fisher, 1993: 166-7).

In the implementation stage, "the new work structures that are manifestations of the shift in the management paradigm are born." Employees encounter changes in job design (including job enrichment), work rules, performance appraisal systems, team structures, and skill development. The primary challenge in this stage is making the changes work for the employees and managers.

The transition stage marks the completion of the implementation and the beginning of adjusting to the new work systems. Team members accept the authority and autonomy passed down by team leaders as skills warrant it. Strength, endurance, and motivation are the essential challenges in this phase.

Finally in maturation, the work systems are fully functional. Yet, they will continue to change and evolve. The continuous change is the main challenge for the members (Fisher, 1993: 166-7).

The degree of self-management these self-directed work teams require is often questioned. Depending on their function and overall purpose, some teams may require more management roles than do others. Typically, work teams function better with more self-management when the work is relatively routine, can be substantially self-contained, and is conducted in a relatively stable environment. Moreover, there is a positive correlation between team effectiveness and the extent of internal task

management. According in Mohrman (136, 140), "Eliminating supervision while creating a non-hierarchical team leader role can require sleight of hand.... [M] Management will have the same expectations of a team leader that it had of supervisors in the past, [and] the team leader will enact the team leader role in a hierarchical manner." Managers must create team leader roles that preserve the ability of the team to address collectively the issues as needed. As companies address the issue of team leadership, they will find that the amount of leadership required is a function of the interdependence among team members, the size of the teams, the functional/discipline of the members, the degree of the team's self-containment, the amount of change, the technical experience and skills of the team members, and the life span of the team (Mohrman, 1995: 141).

The concern that self-directed work teams are nothing more than a fad causes many companies to balk at considering their implementation. Evidence suggests otherwise, however. Self-directed work teams have been used for decades with increasing sophistication, and they produce the results companies want. In a review of organizations in seven countries that changed from the traditional work systems to self-directed work teams, research shows that 93% reported improved productivity and 86% reported decreased operating costs. In addition, 86% of the companies reported improved quality while 70% reported better employee attitudes (Fisher, 1993: 22).

However, the current success rate is only about 50%. The reason cited most often for why self-directed work teams fail is the lack of the management's commitment to the change process. Often there is impatience or unwillingness to make the changes required. Similar to what was found with job enrichment programs, without management's full support, the chances are that the program will not succeed.


The concept of job enrichment as it is applied to work groups has taken the form of self-directed work teams. Companies that are willing to commit the resources and sacrifice the management control are able to realize efficiencies when teams are established and provided the proper support, as demonstrated by the successes at General Electric and other corporations.

As competitive pressures on corporations intensify, management finds that it can best achieve efficiencies in collaboration with the persons who are closest to the work itself. Corporations that, in good faith, implement programs that tap workers'

knowledge, abilities, and experience and allow them to apply it to the barriers to efficiency will continue to reap meaningful rewards. As a recent survey of Fortune 500 firms revealed, "those that use innovative human resource practices and programs such as work redesign consistently outperformed less progressive firms in terms of sales, assets, return on equity, and return on total capital" (Champagne, 1989: 132).

### 3.3 Job Enrichment

Job enrichment has been defined as a "job design change that augments employees' authority in planning their work, deciding how it should be done, and learning new skills that help them grow" (Boone, 1999: 312). In job enrichment, an employee's job is increased to include more variety, often requiring higher levels of skill and knowledge. Workers are granted more responsibility, more autonomy, and more control over the pace and scheduling of their work. Sometimes referred to as "vertical loading," the worker now has the ability to decide on work methods, to check quality, and to develop new solutions to problems (Champagne, 1989: 117). Research has shown that people are typically happier when given the opportunity to do what they do best and when they believe that what they do makes a difference in the company. Corporations develop job enrichment programs to create these opportunities and to communicate the effect that employees have on the company's bottom line, producing internal motivation and job satisfaction (Cotton, 1993: 141).

Many models of job enrichment form the basis of efforts to restructure the workplace in the past quarter of the twentieth century. Herzberg's Two-Factor Model and the Job Characteristics Model of Hackman and Oldham are two of the best known. In Herzberg's Two-Factor Model, also known as his Motivation-Hygiene Model, Frederick Herzberg proposed a list of factors that lead to satisfaction (motivators) and an additional list of factors that lead to dissatisfaction (hygiene factors). The motivators were typically related to intrinsic factors such as recognition, achievement, responsibility, and the content of work itself. Hygiene factors related to extrinsic factors such as the job's environment, company policy, pay, benefits, administration practices, the quality of supervision, and interpersonal relations (Cotton, 1993: 144-5). Through his research, Herzberg discovered that programs designed to motivate by emphasis on hygiene factors proved unsuccessful because this led to an escalating rewards system. For example, when an employer used pay or benefits as the focus of

programs to increase productivity, the positive effects of the change were not long lasting. Ultimately, employees would take the improvements on compensation for granted, and management would have to consider additional increases to maintain morale and desired productivity levels. This cycle continues until the employer is no longer willing or able to increase pay, leaving the worker dissatisfied (Cotton, 1993: 144-5, Kopelman, 1987: 244). Alternately, Herzberg proposed that efforts by management to focus on "motivators" would have a more effective and longer lasting influence on employee attitudes.

Herzberg's concept that some factors in the work environment have a greater and longer-lasting effect on worker productivity became a generally accepted premise. While companies understand that they cannot ignore hygiene factors, they have placed a great deal of emphasis on Herzberg's motivators as they seek to achieve maximum productivity. This focus on motivators is the basis of most job enrichment programs.

In 1975, Hackman and Oldham proposed another popular model of job enrichment that they call the Job Characteristics Model. In this model, the degree to which jobs are motivating can be assessed through five core job characteristics: skill variety, task identity, task significance, autonomy, and job feedback, all of which are characteristics that Herzberg might have termed "motivators".

Skill variety is defined as the degree to which a job requires a variety of different skills to be completed. Task identity is the degree to which the job requires completion of a number of whole, identifiable pieces of work. Task significance is the extent to which a job has a meaningful impact on other jobs in the same workplace. Autonomy is the limit to which a job provides substantial freedom, independence and discretion, and job feedback is the degree to which carrying out work activities produces direct and clear information about the performance of an individual. Hackman and Oldham's research led to the conclusion that "to the extent that a job contains these five characteristics, three psychological states are produced: experienced meaningfulness of the work, experienced responsibility for outcomes of the work, and knowledge of the actual results of the work activities. To the degree that these psychological states are present, high internal work motivation exists" (Cotton, 1993: 149-50).

Hackman and Oldham assert that four main beneficial effects may result from well-designed jobs. These include internal work motivation, including feelings of

satisfaction after performing well, organizational commitment as manifested by low turnover and absenteeism, work satisfaction, and performance quality (Kopelman, 1987: 238).

Hackman cautions that job enrichment programs may not always achieve the desired effects. He found, for example, that reported increases in work quality have only occurred when productivity was low to begin with or when hidden inefficiencies previously existed in the system (Kopelman, 1987: 240). After completing his research, Hackman concluded that failures in job redesign are almost as frequent as successes, mostly due to the complexity of the issues involved and the companies' unwillingness to fully address the many prerequisites and constraints that can threaten the programs.

Research by Paul Champagne suggests that successful implementation of job enrichment programs requires management to address several potential problems in the early stages. The problems are centred on expectations and program limitations, costs, internal implementations, support of labor unions, and support of management. Managers must first realize that job enrichment implies job change, and not all jobs are able to change. They must consider whether the job in question can be changed meaningfully enough to warrant a corporate-wide effort. Managers should further realize that not everyone wants their jobs redesigned and that there is a natural resistance to change which must be overcome with careful management. There should be realistic expectations of what may or may not be accomplished (Champagne, 1989: 130, 132).

Managers must also be aware of the costs associated with the implementation of job redesign. In order to realize potential profits over the long term, the company must make short term financial investments including implementation costs of increased wages, new or upgraded facilities, and training. Contrary to Herzberg's suggestion, Champagne(1989: 130) suggests using monetary rewards to help ease the transition. "Most employees do not want their jobs redesigned unless they can foresee that a tangible benefit will result from it". Further, depending on the extent of change, if enrichment causes significant changes or upgrades, employees may be entitled to more money. Also, the amount of pay increase workers deserve should be relative to the amount of their contribution in the enrichment process.

Champagne emphasizes that corporations implementing job enrichment programs should involve labor unions in all stages of development, including planning, so that

the union members can see their part in the process. If labor unions are not involved, as was true with some earlier experiments with enrichment programs, they will likely perceive the programs as efforts to exploit workers by combining tasks to cause the illusion of a meaningful job.

Perhaps the most crucial element to job enrichment programs is the support of top management. "Unless those in positions of power truly support the redesign effort, there will probably be a great deal of activity leading nowhere" (Champagne, 1989: 131).

Once the potential pitfalls have been addressed, management must consider the content of the program and the method of its implementation. Among the many methods of implementing job enrichment programs, only Herzberg, Hackman and Oldham, and Champagne repeatedly emphasize the few which will be mentioned here. Normally, job content is changed to allow more variety by introducing or combining new and more challenging tasks. Job redesign focuses on natural work units allow the workers increasing responsibility for an identifiable body of work. Natural work units increase the workers' sense of ownership and providing closure when the job is finished. Whatever the method of implementation, workers must be given the specific tools and training necessary for a successful transition (Champagne, 1989: 118, Cotton, 1993: 165).

Once a job is redesigned, workers should be granted the authority to modify the pace at which they work. Employees should also have more discretion on how and when to carry out assigned tasks, increasing both their accountability and responsibility for their work (Champagne, 1989: 119, Cotton, 1993: 165).

A change must also occur in the personal content of a job. Employees who are involved in the planning, directing, and controlling of activities tend to be more interested in their daily jobs. Management should also provide adequate feedback channels that help "individuals learn how they are performing on their jobs, and whether this performance is improving, deteriorating, or remaining at a constant level" (Champagne, 1989: 120). Finally, there is also great reward in allowing the employees to establish client relationships, for clients may be able to offer new perspectives and valuable opinions that the workers can incorporate into their processes (Champagne, 1989: 119, Cotton, 1993: 165).

## 3.4 Job Satisfaction

In support of the use of self managed work teams, research has shown that they have been positively associated with both job satisfaction(Cohen and Ledford, 1994; Cordery, Mueller, and Smith,1991; Wall,Kemp, Jackson, and Clegg,1986) and Cordery et al.,1991)

Job satisfaction and organisational commitment are important because they have in turn, been associated with other positive organisational outcomes. For example, employees who are more satisfied with their jobs are less absent (Hackett and Guion, 1985) and less likely to leave (Carsten and Spector, 1987); and more likely to display organisational citizenship behavior (Organ and Konovsky, 1989) and be satisfied with their lives overall (Judge and Watanabe, 1993). Employees who are more committed are less likely to intend to leave (Mathieu and Zajac, 1990), actually leave (Netrmeyer, Burton, and Johnston, 1995), and experience stress (Begley and Czajka, 1993); and more likely to perform better (Mathieu and Zajac, 1990) and behave prosocially (O'Reilly and Chatman, 1986).

Increasing job satisfaction is important for its humanitarian value and for its financial benefit (due to its effect on employee behavior.) As early as 1918, Edward Thorndike explored the relationship between work and satisfaction in the Journal of Applied Psychology.

In Research conducted by Bavendam Research on job satisfaction clear patterns have emerged.

Employees with higher job satisfaction:

- believe that the organization will be satisfying in the long run

- care about the quality of their work

- are more committed to the organization

- have higher retention rates, and

- are more productive.

### 3.4.1 Definition of Job Satisfaction

*A single construct or multiple dimensions.* One area of disagreement is whether job satisfaction has multiple dimensions. Researchers like Porter and Lawler[1] define job satisfaction as a unidimensional construct; that is, you are generally satisfied or dissatisfied with your job. In contrast, Smith, Kendall, and Hulin[2] argue that job satisfaction is multidimensional; that is, you may be more or less satisfied with your job, your supervisor, your pay, your workplace, etc.

For the purposes of our work, we follow Porter & Lawler and define job satisfaction as people's affective (emotional) response to their current job conditions. We also carefully distinguish job satisfaction from its consequent. Desire to stay with an organization is not a *symptom* of job satisfaction, it is a *consequence* of job satisfaction. As an independent factor, desire to stay is also affected by other factors such as employees' job security, expectations about their future success in the organization, etc.

### 3.4.2 Areas of Confusion identified by the Bavendam Research Group

*Negative is stronger than positive.* Dissatisfaction seems to be more motivating than satisfaction. In a similar way, people often react more immediately and visibly to pain than to a pleasant stimulus.

*Diminishing returns.* Frequently, there is not a simple relationship between satisfaction and its consequent. For example: the greater the dissatisfaction, the greater the motivation to quit. Once people are basically satisfied, they are no longer motivated to quit. How will their behavior be different if they are **wildly satisfied** with their jobs? They will still not be motivated to quit. Thus, once employees are satisfied with their jobs, being wildly satisfied may not produce significantly different behavior. This effect can cause managers to under-estimate just how motivating job satisfaction really is.

Statistically Significant factors that cause job satisfaction

In surveys conducted by Baversham Research, over 15,000, largely white collar, employees nationwide from all levels of the participating organizations. 20% were

managers/supervisors; 91% worked full-time; average age was 33; there was an even proportion of males and females.

As part of a larger project whose goal was to create an employee-driven, survey-improvement process [our MFI® process], Bavendam Research identified **six factors that influenced job satisfaction**. When these six factors were high, job satisfaction was high. When the six factors were low, job satisfaction was low. These factors are similar to what we have found in other organizations.

**Opportunity**

Employees are more satisfied when they have challenging opportunities at work. This includes chances to participate in interesting projects, jobs with a satisfying degree of challenge and opportunities for increased responsibility. Important: this is not simply "promotional opportunity." As organizations have become flatter, promotions can be rare. People have found challenge through projects, team leadership, and special assignments-as well as promotions.

**Stress.**

When negative stress is continuously high, job satisfaction is low. Jobs are more stressful if they interfere with employees' personal lives or are a continuing source of worry or concern.

**Leadership**

Employees are more satisfied when their managers are good leaders. This includes motivating employees to do a good job, striving for excellence or just taking action.

**Work Standards.**

Employees are more satisfied when their entire workgroup takes pride in the quality of its work.

**Fair Rewards.**

Employees are more satisfied when they feel they are rewarded fairly for the work they do. Consider employee responsibilities, the effort they have put forth, the work they have done well and the demands of their jobs.

**Adequate Authority**

Employees are more satisfied when they have adequate freedom and authority to do their jobs.

## 3.5 The Effectiveness of Teams

A paper was presented by the Centre for the Study of Work Teams. This research paper will be used as a backbone to study the effectiveness of the teams at Bioproducts and will provide empirical data on the factors that have been identified as important to ensure the effectiveness of teams.

Groups became a new focus of attention in the 1940's after the Hawthorne studies were published (Roethlisberger & Dickson, 1939). One of the discoveries outlined in that report is that informal work groups are formed by workers inside of classic Theory X organizations. In recent years the use of work teams in organizations has been increasing substantially, and this trend is expected to continue (Katzenbach, 1998). Eighty percent of organizations with over 100 employees report 50% of their employees are in at least one team (Beyerlein & Harris, 1998). To remain competitive, it is important for organizations to create and maintain teams which are as effective as possible.

A work team will be defined for the purposes of this paper by a definition borrowed from Guzzo (1986) as follows. A team is a group of individuals who see themselves and are seen by others as a social entity, which is interdependent because of the tasks performed as members of a group. They are embedded in one or more larger social systems, performing tasks that affect others. The key to work teams is that they are interdependent, and this is the major factor that distinguishes a "team" from a "group," although both terms will be used in this paper.

There are many advantages to having self-managed work teams in organizations. Teams can enable a company to execute more quickly, and changes are made more easily, allowing the company flexibility (Mohrman, Cohen & Mohrman, 1995). This is due in part to increased communication and employee involvement in decision-making. Information flow is better because of increased communication and horizontal, rather than just vertical flow of information. Because of this, consistency in organizational environment, strategy and design is increased (West, Borril & Unsworth, 1998).

Each member of a group adds more information, perspective, experience and competencies (Gmelch, 1984). Organizations as a whole are able to learn more effectively as well as retain gained knowledge. If each member participates in problem solving, the potential ways a problem can be solved is increased. Employees also feel better about decisions they make themselves, and are more likely to stick to the implementations that they have created for themselves, as opposed to those forced upon them (West, et al., 1998). Also, there is a reduction in communication difficulties and in supervision needs if the same group of people implements the solution that solved it (Gmelch, 1983). It is also more cost effective to have teams, while retaining high quality (West et al., 1998). Businesses report improved productivity, safety, absenteeism, employee attitude and cost of quality when teams are implemented (Beyerlein & Harris, 1998). There are also many other advantages to having teams that are not listed above.

However, not every organization or task is best organized in a team-based model. Companies who should not implement teams include those who view this as an organizational strategy to down-size, those who will not plan for or institute a nurturing climate where teams can thrive, or those who will not take the time to design and support teams properly (Johnson, 1998).

Even organizations that are better served by a team model find disadvantages. These include an increase in time to communicate, poor communication between members and groups, poor co-ordination between group members, and competing objectives (West, et al., 1998). Some self-managed teams never reach their full potential or fail to be functional altogether, because they were not set up correctly and the other aforementioned negative results occur. Other teams increase productivity and quality in organizations. There are many potential risks and opportunities involved in a team-based organization. What characteristics, then, are essential to having effective teams? Effectiveness can be defined according to Campion, Medsker & Higgs (1993) in terms of productivity, employee and customer satisfaction and manager judgements. According to that model job design, interdependence, composition, context and process are the themes that contribute to the above effectiveness criteria.

### 4.5.1 Campions Model

**Job design** refers to the themes relating to motivation, including self-management, participation, task variety, task significance, and task identity (Hackman, 1990). *Self-management* enhances effectiveness by increasing responsibility and ownership because all members participate in decision-making. Employees who implement their own ideas are more likely to feel ownership and implement ideas aggressively (Johnson, 1998). *Task variety* and *participation* allow each member in the group to perform a number of tasks, motivating members to use different skills, as well as rotating less desirable tasks. Effectiveness is also increased when members of the group feel their work has repercussions outside of the group. This concept is called *task significance*. Finally, *task identity* is necessary, meaning "the degree to which a group completes a whole and separate task (Campion, et al., pg. 826, 1993)."

**Interdependence** is one of the most crucial elements for teams to exist and to be effective. One form of this is *task interdependence*, which involves members of the team depending on one another to accomplish goals. *Goal interdependence* refers not only to a group having a goal, but also to the fact that group member's goals should be linked. *Interdependent feedback* and *rewards* are necessary, as all of the interdependency characteristics, to promote motivation in the team.

Another component of the Campion, et al. (1993) model is the **Composition** of groups, which includes *heterogeneity* in both experiences and abilities. Heterogeneity contributes to effectiveness due to the possibility of group members learning from each other, thereby increasing flow of information. *Flexibility* of job assignments allows workers to fill in where needed, so absence of a member does not create delays or chaos. *Relative size* means that groups should be large enough to get work done, but not too large for co-ordination or involvement of members. Also, employees who have a *preference for group work* are expected to add cohesiveness to the group composition.

**Context** is essential in effective work groups and includes *training* in various areas from how groups should function to technical knowledge. Another contextual component is *managerial support*. It is important that managers act not as traditional managers, but as supporters of the group without undermining it. It is also crucial that top management is supportive of the team, or it will eventually be devoured by the organization (Katzenbach, 1998). Lastly, *communication and Co-operation between groups* are essential. Groups should be integrated with the rest of the organization by

maintaining effective dialogue with other groups. Often, one employee is a member of a number of various related groups.

The final characteristic of Campion's model is **Process**, which describes the inter-workings and social interaction of a group. *Potency* falls under this category, and refers to the "belief by a group that it can be effective" (Campion et al., pg. 830, 1993). This is further discussed later in the paper. *Social support* is the part of process that includes members having positive social interaction by helping each other; thereby making boring tasks more interesting. Another task which helps keep motivation up is *workload sharing*.

Campion et al. (1993) have tested the above model in an empirical study and found that almost all of the design characteristics of work groups listed above related to the three criteria of effectiveness (also outlined above.) Potency was found to be the strongest predictor of all characteristics and related to all three effectiveness criteria, thus supporting those who assert that it is one of the most important characteristics of a work team (Guzzo, Campbell & Shea, 1993). This issue is further discussed later in this paper.

**4.5.2 Hackman Model**

Many of Campion's ideas outlined above can be traced back to work done by Richard Hackman, who has slightly different views of effectiveness. Hackman's definition of effectiveness is defined in a three dimensional definition: the group's output meeting quality standards, the group's ability to work interdependently in the future, and the growth and well being of team members (Hackman, 1990). This definition is much more complex than Campion's in that it looks at both social and personal criteria in a more in-depth way. Hackman's model of effectiveness is also more complex than the Campion model in that it offers more than simple input-output relationships. Hackman offers the advice that no strategy for performance will work equally well for different teams, and teams will create their own reality. Focus should be on setting up conditions favorable to allow success in the team. What, then, are the conditions for effectiveness?

The first element in Hackman prescribes is **clear, engaging direction** which implies that although tasks are clear, they should also allow room for the group to "tailor the objectives to fit with member's own inclinations" (Hackman & Walton, pg. 81, 1986.)

The success or failure to achieve goals should be a direct consequence of the group's actions, and it should be clear to the group that their work will have a substantial impact on organizations. This creates an environment where members will experience personal growth and feel more empowered as a result of having more responsibility. Hackman's second ingredient for success is an **enabling performance situation**. He sites three general conditions that must be surmounted for a team to be successful. The first of the triad of the process criteria is *ample effort* to accomplish the task at hand in an acceptable manner. The second is that members have *sufficient knowledge and skills* and the third hurdle is the employment of *task-appropriate performance strategies*. When there is a problem in the group, these three criteria can be examined to determine what is wrong- effort; talent and strategy problems constitute major flaws in-groups, preventing effectiveness.

The three points of leverage that Hackman identifies are a group structure that promotes competent work on the task, an organizational context that supports and reinforces excellence, and available coaching and process assistance. The first, a **group structure that promotes competent work on the task**, has three components. Firstly, the *task structure* must be clear and provide motivating potential (Hackman and Oldman, 1980). The *Group Composition* must be correct. The group must be the correct size (not too large or small), contain the correct talents, and have members heterogeneous enough to learn from one another. At the same time, there should exist *core norms that regulate member behavior*. This allows activities among members to be coordinated, behavior to be regulated and planning of strategies to be active (Hackman, 1986).

The second point of leverage Hackman discusses is an **organizational context that supports and reinforces excellence**. This entails a *reward system*, which provides team recognition for excelling without giving individuals incentives to "break apart" from the group. The context also includes providing the group with an *educational system* so members can expand their knowledge, skills and abilities. An *information system* will provide the group with the data it needs to set goals.

**Available, expert coaching and process assistance** should be in place to direct members how to operate interdependently with others on the team, as this is a very crucial yet difficult skill to attain. Specific areas that should be focused on by coaches and assistants include promoting individual *effort* through motivation and appropriate assessment of individuals and ideas. Creating and implementing ideas appropriately is

also important. Managers and consultants can be of help wherever experts on team functioning are needed (Hackman, 1990).

It is clear in the above model that Hackman has both intermediate and ultimate indicators of group effectiveness, which makes clear that the connection between processes and outcomes is not always certain. According to Guzzo (1986), this is especially important in decision-making. For example, a group can make mistakes in decision-making and still adopt a plan that is beneficial. Likewise the reverse is true; a group with an excellent decision-making process can adopt inferior solutions.

### 4.5.3 Guzzo Model

Guzzo's model (Guzzo, 1986) differs considerably from the two aforementioned models. He does, however, define effectiveness in the same general terms that Hackman does. In his view, effectiveness is defined by measurable group-produced outputs, consequences the group has for members and the enhancement of a team's capability to perform well in the future. His model shows the three variables he considers essential for effectiveness: task interdependence, outcome interdependence and potency. These three variables, through task-related interaction, affect the group's task effectiveness and can be influenced by either group members or people outside the group. In this model, task-related interaction process refers specifically to the behaviors of members that directly or indirectly affect task accomplishment.

**Task interdependence** means the amount of task-required co-operation in a group. When a group is high in task-interdependence members must share resources in order to attain goals and their actions are closely co-ordinated. When task interdependence is low, members work more independently (without collaboration). It is important that tasks the group undertakes are not over- or under-orchestrated. Then, members become more involved in the outcomes, creating a sense of ownership (Mohrman et al., 1995).

**Outcome interdependence** is influenced in part by task interdependence and refers to the "degree to which important rewards are contingent on group performance (Guzzo, 1986)." A group with a high level of outcome interdependence has the most valuable rewards given because of group accomplishments as opposed to individual achievement. Rewards that are distributed non-competitively when the group is high in task interdependence are expected to increase effectiveness because of the cohesion

this fosters. It should be noted that rewards are provided by a source outside of the group itself (Hall & Harris, 1998).

The third and possibly most significant variable in Guzzo's model of effectiveness is **potency**. As mentioned above, this refers to the belief held by a group that it can be effective, and it is characterized by a sense of likely success and ability to meet challenges (Guzzo, Campbell & Shea 1993). Potency is affected by several variables including management support, availability of resources, knowledge of past effectiveness and perceptions of fellow members as being skilled and competent. Potency is a variable that is linked to performance by the feedback a group receives. Positive feedback from management and customers may cause a group to believe it will be more effective in the future (Hall & Harris, 1998).

Guzzo and Campbell (1990) have found that groups that are characterized as having a strong sense of potency tend to be effective. Potency can be used as an indicator of effectiveness (Guzzo et al., 1993), but it is possible that groups with high esteem can make bad or ineffective decisions (Guzzo, 1986). However, when combined with the alignment of team goals with organizational goals, rewards for team accomplishments and availability of resources, potency can be an excellent predictor of team effectiveness (Guzzo & Campbell, 1990).

In Guzzo's model of effectiveness, task interdependence, outcome interdependence and potency all combines to determine how the task-related interaction in-groups work. All three of these characteristics must be present in the correct amount; for example, if a group is working on a project that does not require co-operation among group members (low task interdependence), they will most likely not be effective. If rewards are distributed to individuals on a team based on their individual performance (low outcome interdependence); the group is expected to be ineffective. Also, if group members perceive their fellow members as being incompetent (low potency), the group will likely not meet performance standards. Therefore, it is important that all three of Guzzo's criteria for effectiveness be met.

Guzzo and Dickson (1996) have also outlined other issues relevant to work-group effectiveness. These include team cohesiveness, composition, performance, leadership, motivation, and group goals. These issues can be applied to almost any team doing almost any kind of work. An analysis of these variables can help one determine whether or not a group is effective. The most important variable however in determining effectiveness is potency.

### 4.5.4 Implications for Work Group Design

If models of effectiveness can be directly related to designing work groups, practical contribution is made to groups. This information is useful to managers and consultants setting up groups, and members of existing groups. Although the above three models are all unique, they all either implicitly or explicitly offer ways to set up and utilize groups to be an effective part of an organization.

In Campion's model, input characteristics such as job design, managers and group members can manipulate all composition and context. Identifying these "malleable" characteristics is the first important step in learning how to design effective groups. The second step is to develop a checklist of sorts of necessary characteristics. This is done in this paper below; characteristics from the above models of effectiveness were compiled to create a generic list. Finally, it is useful to compare the design characteristics of a specific group to measures of effectiveness such as productivity and employee and customer satisfaction periodically to ensure that the group remains effective over time.

### 4.5.5 Synthesis of Models:

Campion, Guzzo and Hackman all have models of effectiveness that are moderately different. However, the following characteristics are found or are inferred in all three models, and could be used as a checklist of sorts to ensure all of the vital pieces are in place, allowing for a group to become a team and to be highly successful. The social **environment** a group should be open and supportive, without authority directed problem solving. Group members should feel that they are equals with others on the team, and there should be an underlying commitment to team performance rather than individual performance. However, this does not mean members should all have the same abilities. A group is more effective when there is a variety of people with different experiences and areas of expertise. Strong interpersonal relationships should be a focus, so the group can function more openly, sharing knowledge and experience. The environment of the group should also be supportive, with a focus on learning. A variety of educational tools, including experts in the field should be readily available to the team to assist in problem solving. Obviously, communication is also very important between group members and those outside the group.

An underlying feeling that the team will be successful in accomplishing the goals they have set is an essential part of the social surrounding. This element of potency is defined as critical in all three models of effectiveness.

**Participation** should be emphasized and all ideas should be listened to without domination by a strong group member or by a supervisor. Some groups find it helpful to have a devil's advocate, which constantly reminds the group of how things could go wrong, thereby keeping the group open to creativity and thinking everything through thoroughly (Manz & Sims, 1993).

The team should have clearly defined **goals** to which all team members are committed. The group itself should set the goals; they should not be imposed upon the group by a supervisor. The individuals in the group should also have goals, which are linked to the group's goals so the members work together in achieving. This is referred to by Campion et al. (1993) as goal interdependence. An underlying theme is that the team has the ability and desire to accomplish these goals.

One way to ensure motivation is the use of rewards. It is stressed that reward should be given in a manner that promotes team cohesiveness. If given in the correct manner, they will likely increase potency, or the belief that the team will perform effectively in the future. Potency can be linked to various other factors including both internal factors (member skills and abilities) and external factors (reputation, resources, leadership).

**Leadership** should be a shared group responsibility, not a delegated position. Each member should feel responsible for the team goals and they should also feel that the task at hand is important and will have an impact outside of the team. Because team members have different skills and abilities, the leadership role will likely change as the goals and dynamics of the team changes. Also, it is critical that the team is self-managed; management may act as a facilitator, but should not undermine the goals and direction the group has made for it.

## 4.5.6 Conclusions that can be drawn from Models

Although teams are not appropriate for every organization or project, they do have many advantages. These include increased flexibility, better information flow and higher quality outputs. Campion (1993), Hackman (1986) and Guzzo (1984) all offer models of effectiveness in teams. Although they differ in many respects, key aspects

can be drawn out of them to create a checklist of sorts to ensure teams are effective. Of these factors, potency is the most important but is not sufficient alone in determining effectiveness.

Future studies should focus on the ways team change over time. Perhaps, different measures of effectiveness or various group design characteristics are more applicable in teams that have been functioning longer than in younger teams or groups that have been recently established. More also needs to be known about how design characteristics such as potency and interdependence can actually be affected by managers and team members when groups are being set up or are newly established. It would also be very useful to do more research in how different types of teams such as knowledge teams; which models of effectiveness can better serve managing teams or factory floor work teams. Do particular models better serve certain teams? There are many areas that can and will be explored as businesses are striving to be more efficient and successful, and as groups continue to be an excellent means of producing.

## 4.6 Advantages of Group Work

There are many advantages to groupwork both in terms of efficiency and motivation. Motivation is also affected by the nature of the group leadership, the degree to which members can physically interact with each other, personal likes and dislikes, the length of time the group spends together, the perceived importance of solidarity or consensus and the status of the group in relation to the wider organisation. There are also many non-social dimensions to motivation, such as the need for power and discretion, creativity, achievement and so on. Nevertheless, efficiency and motivational advantages group work include:

### 4.6.1 Efficiency

High efficiency requires the acquisition, retention and development of expertise. Experiments have shown that workgroups tend to develop a corporate expertise of their own exceeding that of individuals taken separately (which can be greater than that of their manager, if they are given the right form of training).

Efficiency losses are minimised when individuals collaborating in a common task conform to common standards. Many behavioral studies have demonstrated that people in a group develop common standards of behavior, performance, attitudes and even judgements in the light of group norms.

High efficiency requires initiative and again many studies have shown that people in-groups are prepared in certain circumstances to take greater risks than they would when acting individually.

Efficiency best flourishes in a climate where problem solving is successfully achieved, and again research has shown that groups are better at solving some complex but familiar problems than individuals.

Groups obviously perform more effectively than individuals on structured tasks where collaboration and some flexibility are required, and were tasks lend itself to subdivision.

Structured groups tend to show greater creativity than other forms of organisation.

When there is agreement about aims and objectives, groups tend to be more ready to adapt to change and bring about improvements.

## 4.6.2 Motivation

Several studies have singled out-group working as a powerfully motivating organisational form in providing directly a framework for peoples social and affiliative needs viz:

Co-operation is higher within a group than between individuals working on separate jobs.

In a workgroup where people work in close proximity, mutual help and freindships are more frequent than among isolated individuals taken on there own.

In workgroups people's motivational needs for recognition can be more easily satisfied.

Workgroups provide a vehicle for problem solving, creativity, flexibility and risk taking which also increases motivation.

### 4.6.3. Teamworking

Teamworking is an essential prerequisite for high efficiency and motivation. The total effectiveness of a workgroup, where there is synergy and members interact together, is much greater than the sum of the individual contributions.

Blake, Mouton and Allen describe how synergy is achieved in their book "Spectacular Teamwork" "They do it by listening to one another, by correlating information and confirming it when they agree, and by identifying those areas in which they are not in agreement and examining why each thinks in a different way. They are also willing to admit when they are uncertain about a position. The aim is to identify and clarify any faulty data or assumptions. They do it by challenging one another, confronting one another, or contradicting one another, but all in an open and candid way and towards the singular purpose of finding the soundest solution. This permits one or the other to abandon a prior conviction that was mistaken without feeling defeated"

For full team working to take place both structural and personal- level conditions must be right. At the personal level, successful teamwork depends on the likes and dislikes of the members of the team for each other, the attitude and competence and personality of the group leader and a host of other character variables.

Structurally, however, there are three main conditions for teamwork to be facilitated. These are

1. Those formal arrangements exist for flexible working within the workgroups.

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2.  That facilities are provided for the group to regularly meet together formally to share ideas, knowledge and problems

3.  The procedural or regulatory obstacles to group cohesion are removed

# Chapter Four

## Methodology

### 4.1 Sampling Design

AECI Bioproducts employs a staff of around 70 permanent employees. The sample population has been limited to all employees that are part of workgroups. The senior management team was excluded from the survey owing to the fact that they may consider some of the questions as being sensitive and would not respond in a truthful fashion therefore biasing the sample. The number of employees that took part in the survey was 57. The employees that took part in the survey were from the production team, maintenance team, the operations management team, the information technology team, the new business development laboratory team and the new business process technology team. Each team has a multitude of skills and employees come from various disciplines.

### 4.2 Research Design

A self – administered questionnaire was designed using the literature review conducted. Some of the questions came directly from research conducted by other authors however the scale was changed to ensure conformity throughout the questionnaire. The first part of the questionnaire was a biographical profile. The questions posed however had no bearing on the research and were not considered for the analysis. It however allowed the participant an opportunity to collect his thoughts before entering the critical areas of the questionnaire. The questionnaire looked at the participants perception of teamwork, work demands, outcomes for the organisation, job satisfaction, stress and perks. The areas looked at were autonomy, composition, context, and the level of autonomy given to teams, the work demands imposed by belonging to teams and the outcome of teamwork.

## 4.3 Operational Definitions

*1. Work Group* – A work group is defined as a group of individuals who are seen by themselves and others as a social entity, which is interdependent because of the tasks performed as members of a group.

*2. Team*- According to Katzenbach and Smith (1993):

"A team is a small number of people with complementary skills who are committed to a common purpose, performance goals, and approach for which they hold themselves mutually accountable."- From Katzenbach and Smith, The wisdom of Teams

*3. Self-Managed Teams*- A group of people working together in their own ways towards a common goal which is defined outside the team

*4. Self Directed Teams*- A group of people working together in their own ways towards a common goal which the team defines which is similar to self managed teams but includes handling of compensation, discipline and acts as a profit centre by defining its own future.

In this study we will refer to workgroups and teams interchangeably

***Perceptions of Teamwork*** looked at autonomy, job design, and composition of teams, context, and process within the teams and organisational support

*Autonomy* looked at the individual ability to control his task as well as the collective ability of his team to control the task. It also looks at the individual role span as well as the collective role span of the team.

*Job Design* looks at task variety, task significance and to what degree the group completes whole and separate tasks.

*Composition* looks at the heterogeneity of the group, flexibility in-groups and the preference for group work.

*Context* looks at training, management support and communication within teams.

*Process* probes team effectiveness, social interaction within teams and sharing of workload.

*Organisational Support* investigates the information and education system in place to support teamwork.

*Work demands* identify the *individual and collective role clarity* of the team. It also explores if there is *role conflict* experienced by the teams, the *skill variety* required in a job, the *problem solving* ability required and the *workload* of the individual.

*Outcomes* explores the *organisational commitment,* the *job satisfaction* experienced and *stress.* Stress looks at job-*related strain* as well as *general strain.*

Confirmatory questions are randomly distributed within the questionnaire.
 Rating Scales that were used in the questionnaire was a combination of a Simple Category Scale and a Likert type five-point scale. The author designed the scale. The scale asks respondents to rate the extent to which they agree with the statement or question. The five options are as follows: to no extent, to a small extent, to some extent, to a significant extent and to a great extent. The five-point scale was chosen to give the respondents a number of choices to prevent central tendency. The questionaire has content validity in the sense that the questions on teamwork have been adapted directly from the literature review and have been identified by many authors as the essential ingredients to ensure effective teamwork.

**Validity-** The questions on job satisfaction and organisational commitment have been picked up from various questionaires done by other authors to measure job satisfaction and have been adapted for this research study. Criterion validity is reflected in the knowledge that if there is a positive work environment then employees are more likely to have job satisfaction.. If teamwork is effective then one assume a positive work environment is created  hence an increase in job satisfaction. **Reliability-** A Cronbach Coefficient alpha was carried out on perceptions of teamwork, organisational commitment and job satisfaction and on all three factors a correlation of above 0.666 was achieved.

Each individual was given a questionnaire and was asked to complete it at his/her convenience. Participants are not required to fill in their names to guarantee anonymity. Employees were asked to rate the extent to which they agreed with the variables in the questionaire. Owing to the small sample the questionnaire was delivered to employees personally to ensure maximum participation in the study.

## 4.4 Method of Data Analysis

The questionnaire was collected and reviewed. The SPSS program was used to assist in analysis. The data was put onto a spreadsheet. Duplicate and related questions were averaged to create one representative variable. On each variable the frequency was determined. The responses were further summarized 1 to 2 reflected that the respondent was affected to a small extent 3 represented a moderate extent and 4 to 5 reflected to a significant extent. The data was then summarized to determine the various levels of agreements on the statement.

A frequency distribution was determined using bar charts and the mean and standard deviation was calculated for each question. A mean of between 2.5 and 3.5 indicated that participants agreed to the statement moderately any mean below 2.5 represented a small or low extent and anything above 3.5 reflected a significant or high extent. A value between 2.5 and 2.9 was rated moderately low and a value between 3.1 and 3.5 was rated moderately high. The re-evaluation of the mean was necessary to counteract the central tendancy. The data was again further transformed to represent teamwork, work demands, stress and job satisfaction. On these variables bi-variate correlation was applied to determine if there was any relationship between the variables.

# Chapter Five

## 5.1 Frequency Analysis

## 5.1.1 Perceptions of Teamwork

### 5.1.1.1 Autonomy

*5.1.1.0 Individual Task Control*

5.1.1.1 To what extent do you decide on the order in which to do things?

Fig 5.1.1.1



YJOBDONE
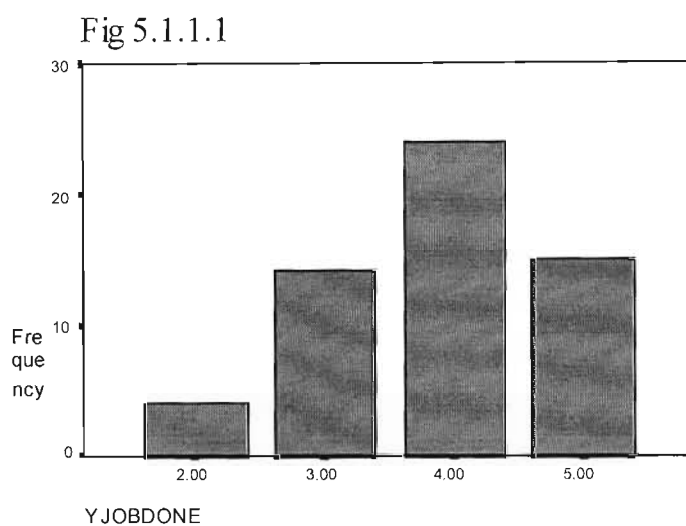
*Table 5.1.1.1 Individual Task Control 1*

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 2.00 | 4 | 7.0 | 7.0 | 7.0 |
|  | 3.00 | 8 | 14.0 | 14.0 | 21.1 |
|  | 4.00 | 30 | 52.6 | 52.6 | 73.7 |
|  | 5.00 | 15 | 26.3 | 26.3 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.1.1.1 indicates that 78.9% respondents, felt that "to a great extent" they decided the order in which to do things. The standard deviation was .83 and the mean was 4.0 indicating a high level of individual control in the order in which things are done.

5.1.1.2 To what extent can you decide how to go about getting your job done?

Fig 5.1.1.2
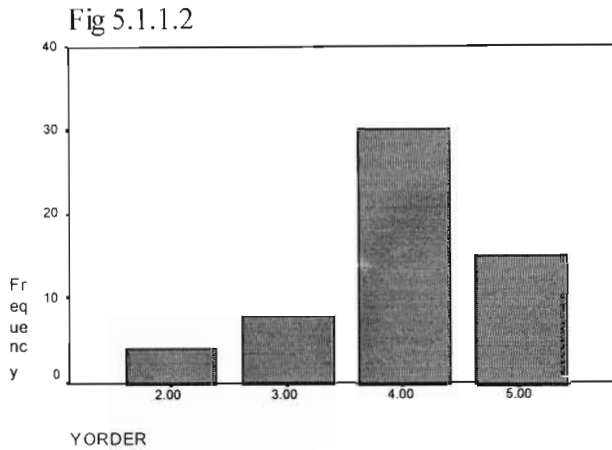


Table 5.1.1.2 Individual Task Control 2

|  |  | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 2.00 | 4 | 7.0 | 7.0 | 7.0 |
|  | 3.00 | 8 | 14.0 | 14.0 | 21.1 |
|  | 4.00 | 30 | 52.6 | 52.6 | 73.7 |
|  | 5.00 | 15 | 26.3 | 26.3 | 100.0 |
|  | Tota | 57 | 100.0 | 100.0 |  |

Table 5.1.1.2 indicates that 68.4% respondents, felt "to greater than some extent" that they decided how to go about getting their job done. The mean was 3.9 and the standard deviation was .89 indicating a high level of individual control on how to get the job done

*1.2.0 Collective Task Control*

5.1.2.1 To what extent can your team decide on the order in which work is done?



Fig 5.1.2.1
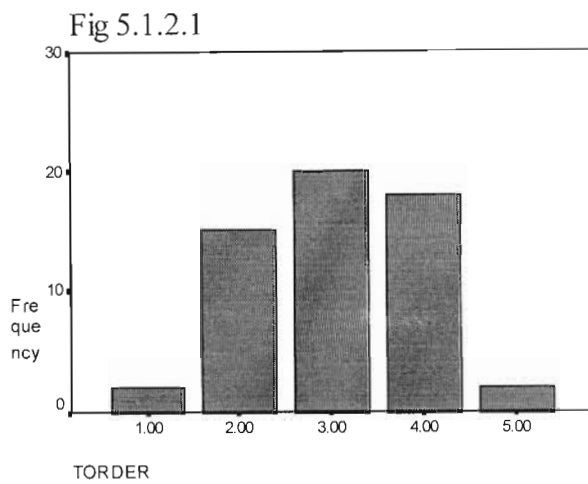
*Table 5.1.2.1 Collective Task Control*

|  |  | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 2 | 3.5 | 3.5 | 3.5 |
|  | 2.00 | 15 | 26.3 | 26.3 | 29.8 |
|  | 3.00 | 20 | 35.1 | 35.1 | 64.9 |
|  | 4.00 | 18 | 31.6 | 31.6 | 96.5 |
|  | 5.00 | 2 | 3.5 | 3.5 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.1.2.1 indicates that 29.8% respondents felt that 'to less than some extent" the team decided the order in which work are done, while 35.1% of respondents felt that "to more than some extent" the team decided the order in which work is done. The majority of 40.1% of respondents, felt that " to a greater than some extent" that the teams decided the order in which work is done. The mean was 3.0 and the standard deviation was .93 indicating a moderate level of team involvement in deciding on the order in which work is done.

5.1.2.2 To what extent can your team decide how to go about getting your work done?

Fig 5.1.2.2



TJOBDONE
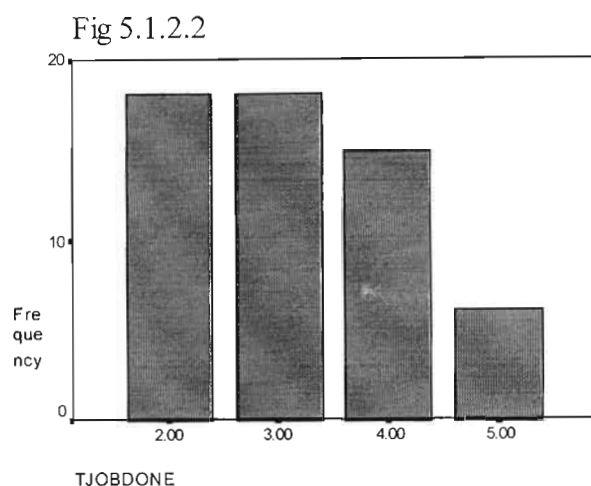
Table 5.1.2.2 Collective Task Control

|  |  | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 2.00 | 18 | 31.6 | 31.6 | 31.6 |
|  | 3.00 | 18 | 31.6 | 31.6 | 63.2 |
|  | 4.00 | 15 | 26.3 | 26.3 | 89.5 |
|  | 5.00 | 6 | 10.5 | 10.5 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.1.2.2 indicates that 31.6% of respondents, felt that to "less than some extent" they decided how the work should be done while 31.6% felt that it was "more than some extent". A majority of 36.9% felt that they "to a greater than some extent" decided how the work should be done. The mean was 3.1 and the standard deviation was 1.0 indicating a moderately high level of team autonomy in deciding how the job should be done

*5.1.2.3* To what extent does your work goals come directly from the workgoals of your team?

Fig 5.1.2.3



GFROMWT
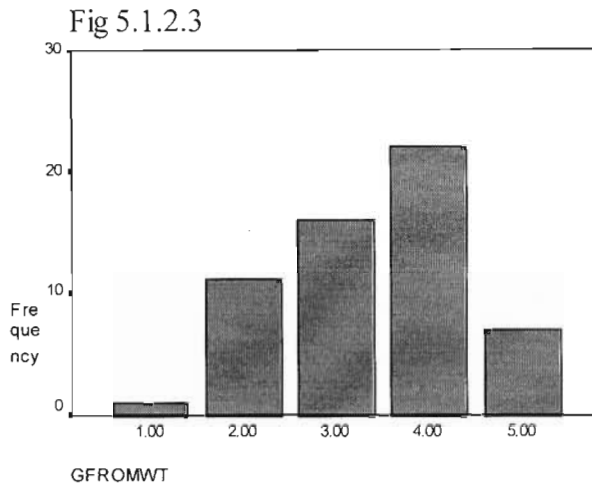
*Table 5.1.2.3 Collective Task Control*

|  |  | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 1 | 1.8 | 1.8 | 1.8 |
|  | 2.00 | 11 | 19.3 | 19.3 | 21.1 |
|  | 3.00 | 16 | 28.1 | 28.1 | 49.1 |
|  | 4.00 | 22 | 38.6 | 38.6 | 87.7 |
|  | 5.00 | 7 | 12.3 | 12.3 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.1.2.3 indicates that 28.1% of respondents, felt that "to some extent" that their work goals come directly from the work goals of the team while 50.9% felt that this was the case. The mean was 3.4 and the standard deviation was 1.0 indicating that goals to a moderately high level comes from the work goals of the team

*5.1.3.0 Individual Role Breadth*

5.1.3.1 To what extent can you influence what goals and targets are set for the team?

Fig 5.1.3.1



INFGOTAR
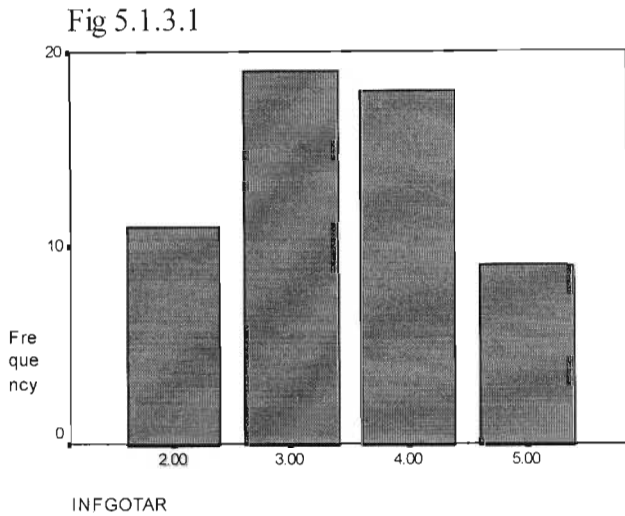
*Table 5.1.3.1 0 Individual Role Breadth*

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 2.00 | 11 | 19.3 | 19.3 | 19.3 |
|  | 3.00 | 19 | 33.3 | 33.3 | 52.6 |
|  | 4.00 | 18 | 31.6 | 31.6 | 84.2 |
|  | 5.00 | 9 | 15.8 | 15.8 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.1.3.1 indicates that 19.3% of respondents, felt " to less than some extent" that they could influence goals and targets set for the team while 33.3% believed that this was "to some extent" A majority of 36.9% believed that "to greater than some extent" that they could influence the goals and targets set for teams. The mean was 3.4 and the standard deviation was .98 indicating a moderately high influence of the individual in the goals and targets set for teams.

## 5.1.4.0 Collective Role Breadth

5.1.4.1 To what extent are your team members themselves involved in making decisions about setting goals and targets?

Fig5.1.4.1



TINVDECI
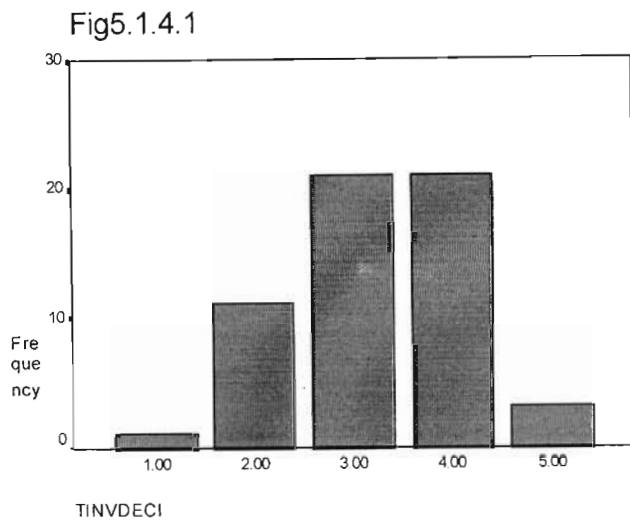
Table 5.1.4.1 Collective Role Breadth

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | 1.00  | 1         | 1.8     | 1.8           | 1.8                |
|       | 2.00  | 11        | 19.3    | 19.3          | 21.1               |
|       | 3.00  | 21        | 36.8    | 36.8          | 57.9               |
|       | 4.00  | 21        | 36.8    | 36.8          | 94.7               |
|       | 5.00  | 3         | 5.3     | 5.3           | 100.0              |
|       | Total | 57        | 100.0   | 100.0         |                    |

Table 5.1.4.1 indicates that 21.1% respondents, felt that " to less than some extent" that team members themselves are involved in making decisions on setting goals and targets while 36.8% of respondents felt this was "to some extent". A majority of 42.1% of respondents felt that "to greater than some extent" they are involved in making decisions on setting goals and targets. The mean was 3.2 and the standard

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deviation was .89 indicating a moderately high level of team member's involvement in making decisions about setting goals and targets

5.1.4.2 To what extent are people in your team asked for their views when decisions are made about the job?

Fig 5.1.4.2



TVIEWS
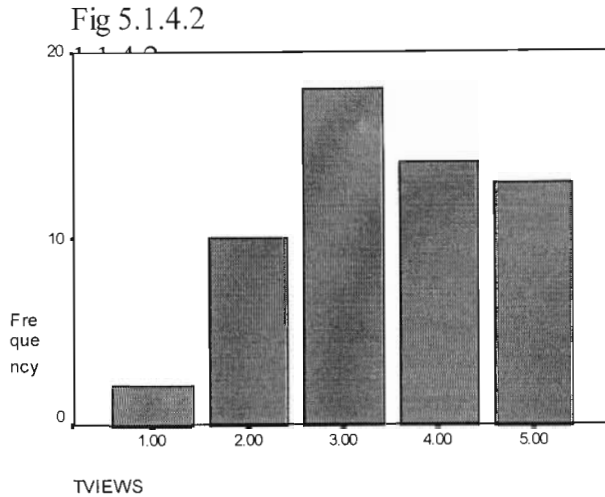
*Table 5.1.4.2 Collective Role Breadth*

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | 1.00  | 2         | 3.5     | 3.5           | 3.5                |
|       | 2.00  | 10        | 17.5    | 17.5          | 21.1               |
|       | 3.00  | 18        | 31.6    | 31.6          | 52.6               |
|       | 4.00  | 14        | 24.6    | 24.6          | 77.2               |
|       | 5.00  | 13        | 22.8    | 22.8          | 100.0              |
|       | Total | 57        | 100.0   | 100.0         |                    |

Table 5.1.4.2 indicates that 31.6% respondents, felt that "to some extent" they are asked their views when decisions are made about the job and 47.4% believed that this was "to greater than some extent". The mean was 3.5 and the standard deviation was 1.1 indicating a high level of team involvement in decision making about their jobs.

## 5.1.4.3 To what extent does the team participate in decision making?

Fig 5.1.4.3



TPARTDEC
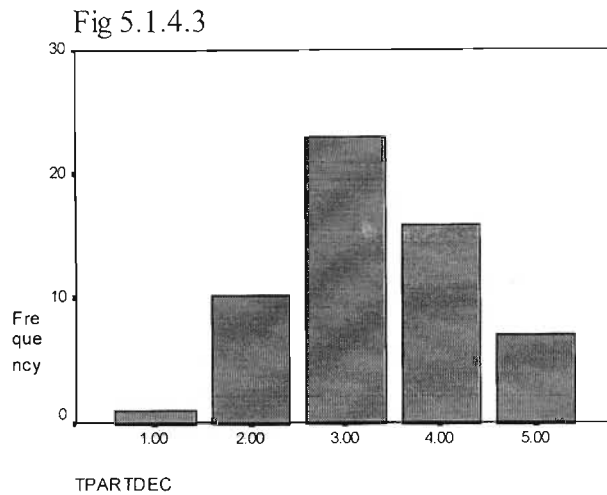
*Table 5.1.4.3 Collective Role Breadth*

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | 1.00  | 1         | 1.8     | 1.8           | 1.8                |
|       | 2.00  | 10        | 17.5    | 17.5          | 19.3               |
|       | 3.00  | 23        | 40.4    | 40.4          | 59.6               |
|       | 4.00  | 16        | 28.1    | 28.1          | 87.7               |
|       | 5.00  | 7         | 12.3    | 12.3          | 100.0              |
|       | Total | 57        | 100.0   | 100.0         |                    |

Table 5.1.4.3 indicates that 40.4% respondents, felt "to some extent" that the team participates in decision making while 40.4% felt that this was "to greater than some extent" . The mean was 3.3 and the standard deviation was 1.0 indicating a moderately high level of team participation in the goals and objectives of the organisation.

## 5.2.1 Job Design

*5.2.1.0 Task Variety*

5.2.1.1 Too what extent is their task variety in your job and too what extent does it allow different skills to be used?

Fig 5.2.1.1
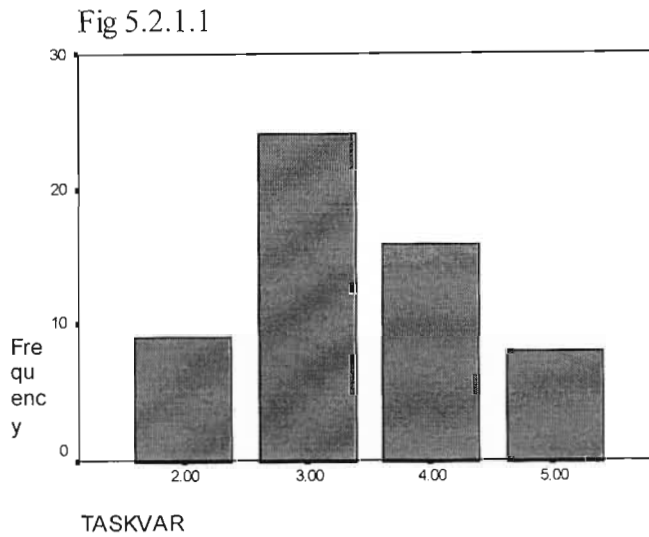


TASKVAR

Table5.2.1.1 *Task Variety*

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 2.00 | 9 | 15.8 | 15.8 | 15.8 |
|  | 3.00 | 24 | 42.1 | 42.1 | 57.9 |
|  | 4.00 | 16 | 28.1 | 28.1 | 86.0 |
|  | 5.00 | 8 | 14.0 | 14.0 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.2.1.1 indicates that 42.1% respondents, felt that "to some extent" that there was task variety in their job and that the job allows them to use different skills while 42.1% felt that this was "to greater than some extent'. The mean was 3.4 and the standard deviation was .92. The results indicate that there is a moderately high level of task variety within the jobs.

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## 5.2.2.0 Task Significance

5.2.2.1 To what extent is the task significant to members outside the group?

Fig 5.2.1.1
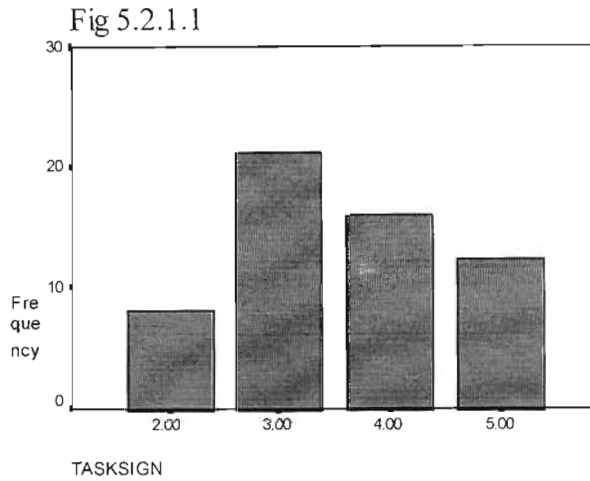


TASKSIGN

*Table 5.2.2.1 Task Significance*

| | | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 2.00 | 8 | 14.0 | 14.0 | 14.0 |
| | 3.00 | 21 | 36.8 | 36.8 | 50.9 |
| | 4.00 | 16 | 28.1 | 28.1 | 78.9 |
| | 5.00 | 12 | 21.1 | 21.1 | 100.0 |
| | Total | 57 | 100.0 | 100.0 | |

Table 5.2.2.1 indicates that 36.8% of respondents, felt that "to some extent" the task was significant to members outside the group while 49.2% felt that this was "to greater than some extent". The mean was 3.6 and the standard deviation was .98 indicating that the tasks performed are quite significant.

## 5.2.3.0 Whole and Separate Jobs

5.2.3.1 To what degree does a group complete a whole and separate task?

Fig 5.2.3.1
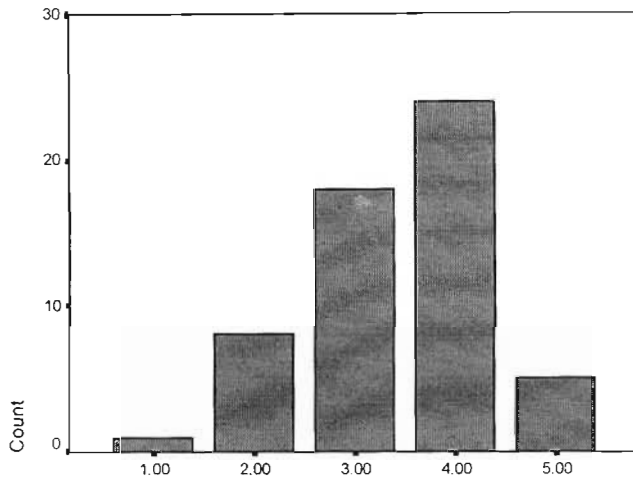


F27

Table 5.2.3.1 *Whole and Separate Jobs*

|  |  | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 1 | 1.8 | 1.8 | 1.8 |
|  | 2.00 | 8 | 14.0 | 14.0 | 15.8 |
|  | 3.00 | 18 | 31.6 | 31.6 | 47.4 |
|  | 4.00 | 24 | 42.2 | 42.2 | 91.3 |
|  | 5.00 | 6 | 10.5 | 10.5 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.2.3.1 indicates that 31.6% of respondents, felt that "to some extent" the group completes whole and separate tasks while 52.7% felt that this was "to greater than some extent". The mean was 3.4 and the standard deviation was .92 indicating that team members to a moderately high extent have whole and separate tasks.

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## 5.2.4.0. Task Interdependence

5.2.4.1 To what extent can you get your job done without information from other members of the team?

Fig 5.2.4.1



INFOMAT
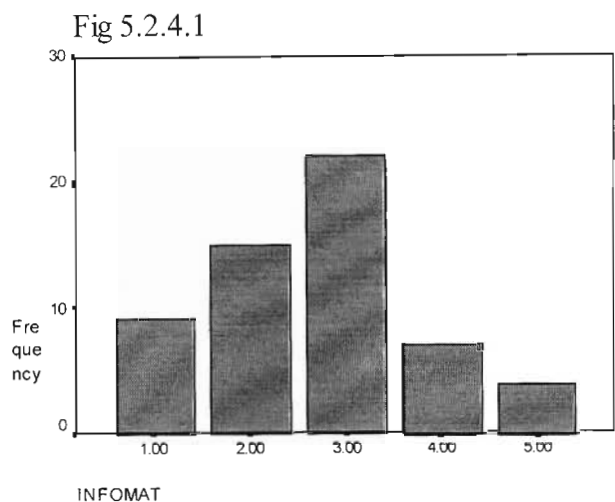
Table 5.2.4.1 Task Interdependence

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 9 | 15.8 | 15.8 | 15.8 |
|  | 2.00 | 15 | 26.3 | 26.3 | 42.1 |
|  | 3.00 | 22 | 38.6 | 38.6 | 80.7 |
|  | 4.00 | 7 | 12.3 | 12.3 | 93.0 |
|  | 5.00 | 4 | 7.0 | 7.0 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.2.4.1 indicates that 42.1% of respondents, felt that "to a small extent" they can get their job done without information from other members of the team while 38.6% felt that this was "to some extent". The mean was 2.7 and the standard deviation was 1.1 indicating a moderately low amount of work can be done without information from other members of the team

## 5.3 Composition

### 5.3.1.0 Heterogeneity

5.3.1.1 To what extent is your team heterogeneous in both experience and abilities?

Fig 5.3.1.1
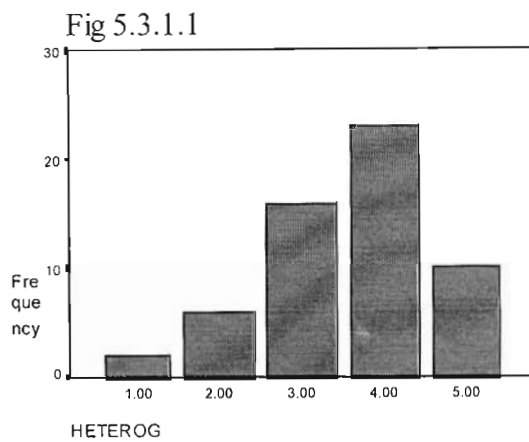


*Table 5.3.1.1 Heterogeneity*

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | 1.00  | 2         | 3.5     | 3.5           | 3.5                |
|       | 2.00  | 6         | 10.5    | 10.5          | 14.0               |
|       | 3.00  | 16        | 28.1    | 28.1          | 42.1               |
|       | 4.00  | 23        | 40.4    | 40.4          | 82.5               |
|       | 5.00  | 10        | 17.5    | 17.5          | 100.0              |
|       | Total | 57        | 100.0   | 100.0         |                    |

Table 5.3.1.1 indicates that 28.1% of respondents, felt that "to some extent" their teams are heterogeneous in both experience and ability while 57.9% felt that this was "to greater than some extent". The mean was 3.6 and the standard deviation was 1.0 indicating a high level of heterogeneity.

## 5.3.2.0 Flexibility

5.3.2.1 To what extent is their flexibility in your job?

Fig 5.3.2.1
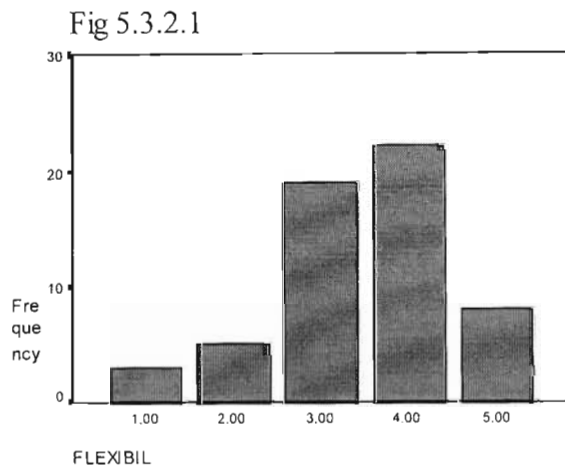


FLEXIBIL

Table 5.3.2.1 Flexibility

|  |  | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 3 | 5.3 | 5.3 | 5.3 |
|  | 2.00 | 5 | 8.8 | 8.8 | 14.0 |
|  | 3.00 | 19 | 33.3 | 33.3 | 47.4 |
|  | 4.00 | 22 | 38.6 | 38.6 | 86.0 |
|  | 5.00 | 8 | 14.0 | 14.0 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.3.2.1 indicates that 33.3% of respondents, felt that "to some extent" there is flexibility in their jobs while 52.6% felt that this was "to greater than some extent". The mean was 3.5 and the standard deviation was 1.0 indicating a high level of flexibility among team members.

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## 5.3.3.0 Preference for Group work

5.3.3.1 Too what extent do you prefer group work?

Fig 5.3.3.1



PREFGW
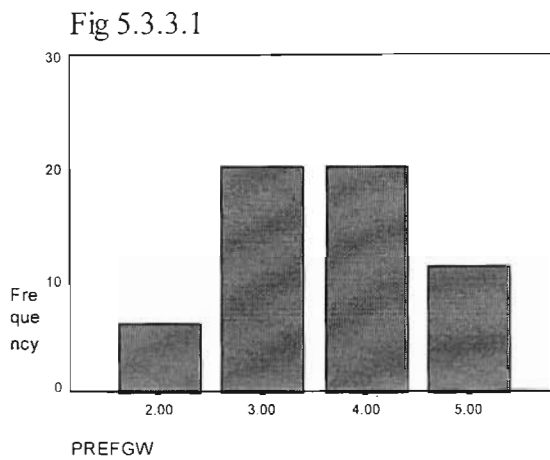
*Table 5.3.3.1 Preference for Group work*

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 2.00 | 6 | 10.5 | 10.5 | 10.5 |
|  | 3.00 | 20 | 35.1 | 35.1 | 45.6 |
|  | 4.00 | 20 | 35.1 | 35.1 | 80.7 |
|  | 5.00 | 11 | 19.3 | 19.3 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.3.3.1 indicates that 35.1% of respondents, felt that "to some extent" they preferred group work while 54.3% felt that this was "to greater than some extent". The mean was 3.6 and the standard deviation was .92 indicating a high level of preference for group work.

## 5.4.0 Context

### 5.4.1.0 Training

5.4.1.1 To what extent does team members receive training to assist in performing their tasks?

Fig 5.4.1.1
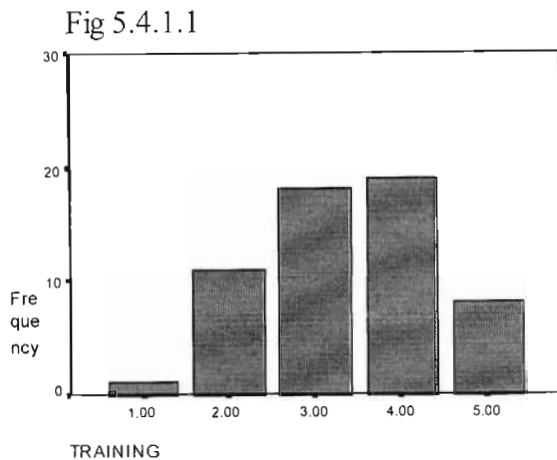


TRAINING

Table 5.4.1.1 Training

|  |  | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 1 | 1.8 | 1.8 | 1.8 |
|  | 2.00 | 11 | 19.3 | 19.3 | 21.1 |
|  | 3.00 | 18 | 31.6 | 31.6 | 52.6 |
|  | 4.00 | 19 | 33.3 | 33.3 | 86.0 |
|  | 5.00 | 8 | 14.0 | 14.0 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.4.1.1 indicates that 31.6% of respondents, felt that "to some extent" team members receive training to assist in performing their tasks while 47.3% felt that this was "to greater than some extent". The mean was 3.4 and the standard deviation was 1.0 indicating that training is rated moderately high. However there is a significant percentage (21.1%) that indicate that training is not adequate. In this case one needs to look at the reasons for this perception. It may be found that while training may be adequate the methods employed in training this group may not be suitable.

## 5.4.2.0 Managerial Support

5.4.2.1 To what extent does the teams receive managerial support?

Fig 5.4.2.1



MANSUP
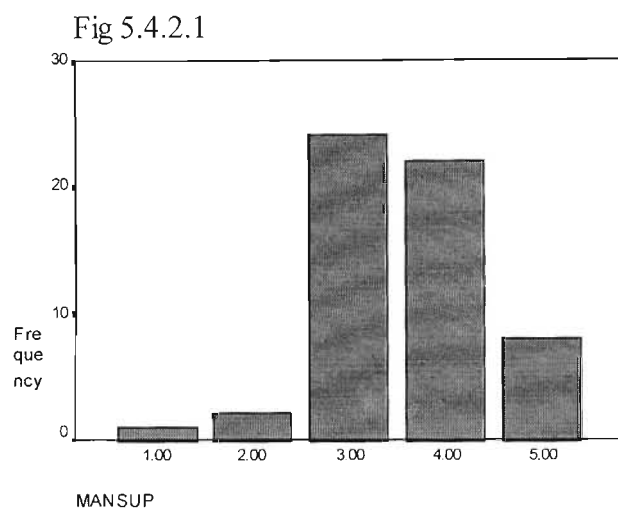
Table 5.4.2.1 Managerial Support

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | 1.00  | 1         | 1.8     | 1.8           | 1.8                |
|       | 2.00  | 2         | 3.5     | 3.5           | 5.3                |
|       | 3.00  | 24        | 42.1    | 42.1          | 47.4               |
|       | 4.00  | 22        | 38.6    | 38.6          | 86.0               |
|       | 5.00  | 8         | 14.0    | 14.0          | 100.0              |
|       | Total | 57        | 100.0   | 100.0         |                    |

Table 5.4.2.1 indicates that 42.1% of respondents, felt that the team receives managerial support "to some extent" while 52.6% of respondents felt that this was "to greater than some extent". The mean was 3.6 and the standard deviation was .84 indicating that managerial support is very high.

69

## 5.4.3.0 *Communication*

5.4.3.1 To what extent is their proper communications between teams and other teams within Bioproducts?

Fig 5.4.3.1



COMOTHT
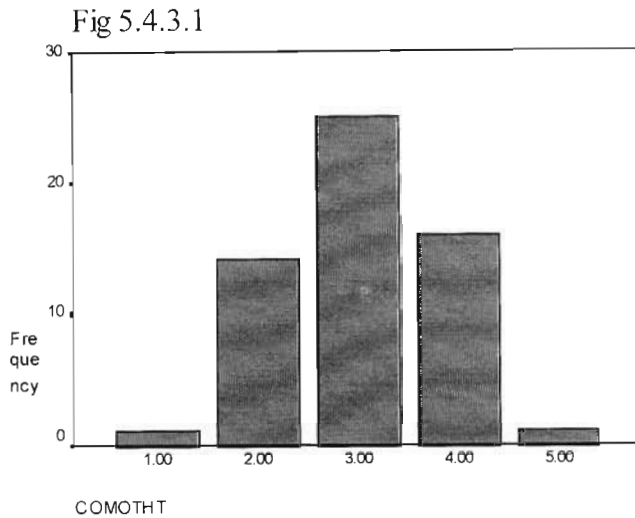
*Table 5.4.3.1 Communication*

|  |  | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 1 | 1.8 | 1.8 | 1.8 |
|  | 2.00 | 14 | 24.6 | 24.6 | 26.3 |
|  | 3.00 | 25 | 43.9 | 43.9 | 70.2 |
|  | 4.00 | 16 | 28.1 | 28.1 | 98.2 |
|  | 5.00 | 1 | 1.8 | 1.8 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.4.3.1 indicates that 26.4% of respondents felt that communications between teams and other teams within Bioproducts are adequate "to less than some extent" and 29.9% felt that this was "to greater than some extent". A majority of 43.9% felt that communication between team and other teams within Bioproducts was adequate "to some extent. The mean was 3.0 % and the standard deviation was .82 indicating that communication is moderate however there is 26% who feel that communication is not adequate and reasons for this need to be investigated.

## 5.5.0 Process

*5.5.1.0 Team Effectiveness*

5.5.1.1 To what extent does the team believe it can be effective?

Fig 5.5.1.1



TBELEFFV
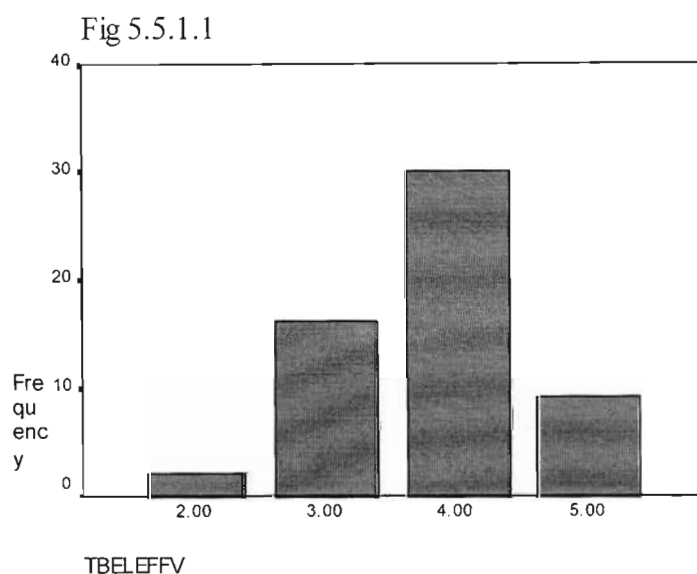
*Table 5.5.1.1 Team Effectiveness*

|  |  | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 2.00 | 2 | 3.5 | 3.5 | 3.5 |
|  | 3.00 | 16 | 28.1 | 28.1 | 31.6 |
|  | 4.00 | 30 | 52.6 | 52.6 | 84.2 |
|  | 5.00 | 9 | 15.8 | 15.8 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.5.1.1 indicates that 28.1% of respondents, believe that teams can be effective "to some extent" while 68.4% believe that "to greater than some extent" teams can be effective. The mean was 3.8 and the standard deviation was .74, which indicates the high belief that the teams can be effective

## 5.5.2.0 Social Interaction

5.5.2.1 To what extent is their social interaction within the group?

Fig 5.5.2.1



SOCAC
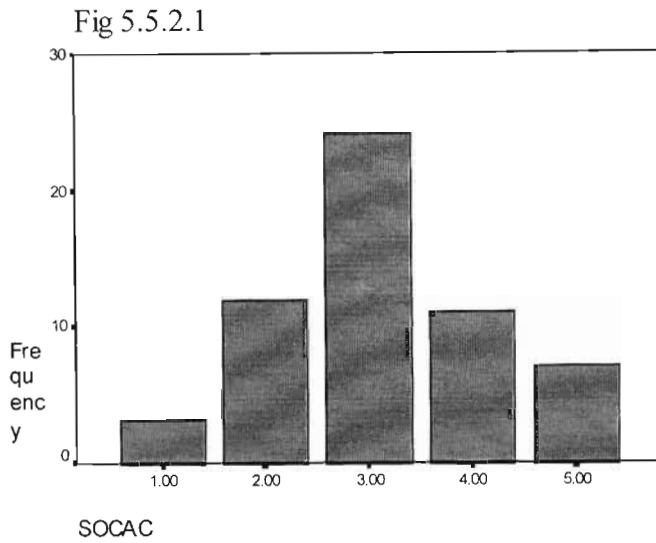
*Table 5.5.2.1 Social Interaction*

|  |  | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 3 | 5.3 | 5.3 | 5.3 |
|  | 2.00 | 12 | 21.1 | 21.1 | 26.3 |
|  | 3.00 | 24 | 42.1 | 42.1 | 68.4 |
|  | 4.00 | 11 | 19.3 | 19.3 | 87.7 |
|  | 5.00 | 7 | 12.3 | 12.3 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.5.2.1 indicates that 26.4% of respondents believe that social interaction within team was "less than some extent" while 31.6% felt that this was "to greater than some extent". A majority of 36.8% believe that social interaction within groups take place "to some extent". The mean was 3.1 and the standard deviation was 1.1 indicates a moderately high level of social interaction among team members. This is however an area of improvement considering that 26.4% responded that social interaction was poor.

## 5.5.3.0 Sharing of Workload

5.5.3.1 To what extent is there sharing of the workload?

Fig 5.5.3.1



SHARLO
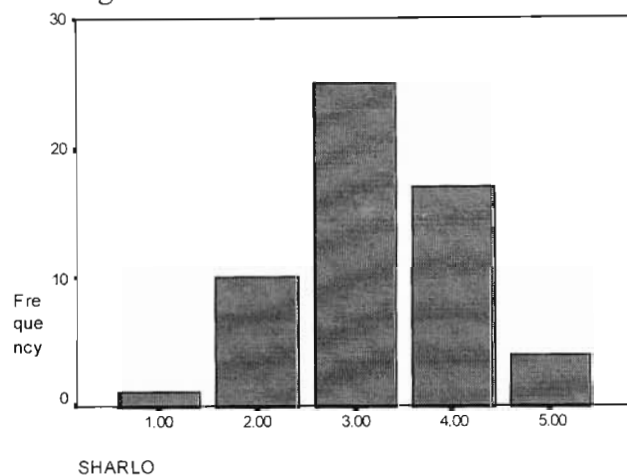
Table 5.5.3.1 Sharing of Workload

|  |  | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 1 | 1.8 | 1.8 | 1.8 |
|  | 2.00 | 10 | 17.5 | 17.5 | 19.3 |
|  | 3.00 | 25 | 43.9 | 43.9 | 63.2 |
|  | 4.00 | 17 | 29.8 | 29.8 | 93.0 |
|  | 5.00 | 4 | 7.0 | 7.0 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.5.3.1 indicates that 19.3% of respondents, felt " to less than some extent" there was sharing of workload while 36.8% felt it was "to greater than some extent. A majority of 43.9% of respondents felt that there was sharing of workload "to some extent". The mean was 3.2 and the standard deviation was .89 indicating that there was a moderately high level of sharing of workload.

## 5.6.0 Organisational Support

*5.6.1.0 Educational System*

5.6.1.1 To what extent is their an educational system to expand team members knowledge?

Fig 5.6.1.1



EDUCSYS
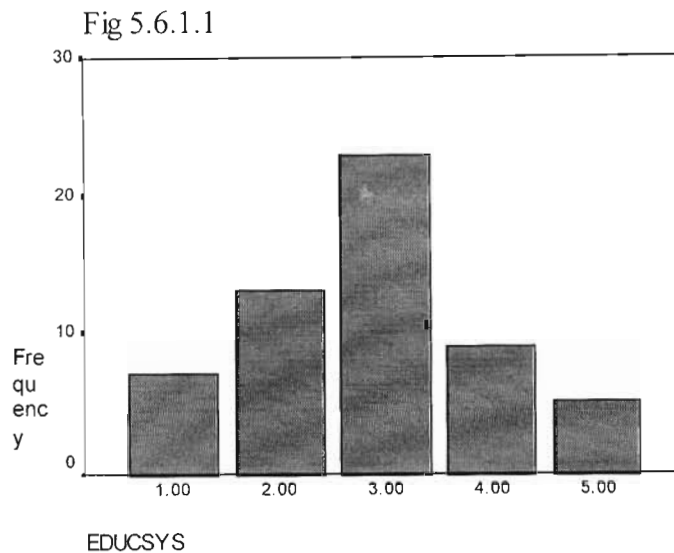
*Table 5.6.1.1 Educational System*

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 7 | 12.3 | 12.3 | 12.3 |
|  | 2.00 | 13 | 22.8 | 22.8 | 35.1 |
|  | 3.00 | 23 | 40.4 | 40.4 | 75.4 |
|  | 4.00 | 9 | 15.8 | 15.8 | 91.2 |
|  | 5.00 | 5 | 8.8 | 8.8 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.6.1.1 indicates that 35.1% of respondents felt that to "less than some extent" there is an educational system to expand team knowledge while 24.6% of respondents felt that this was "to greater than some extent". A majority of 40.4% of respondents felt that "to some extent" there was an educational system to expand team member's knowledge. The mean was 2.9 and the standard deviation was 1.1 indicating a moderate level of agreement that an educational system is in place. This is an area that improvements can be made considering that 35.1% responded that the system was not adequate.

## 5.6.2.0 Information System

5.6.2.1 To what extent is their an information system that provides the team with the data it needs to set goals?

Fig5.6.2.1



INFOSYS
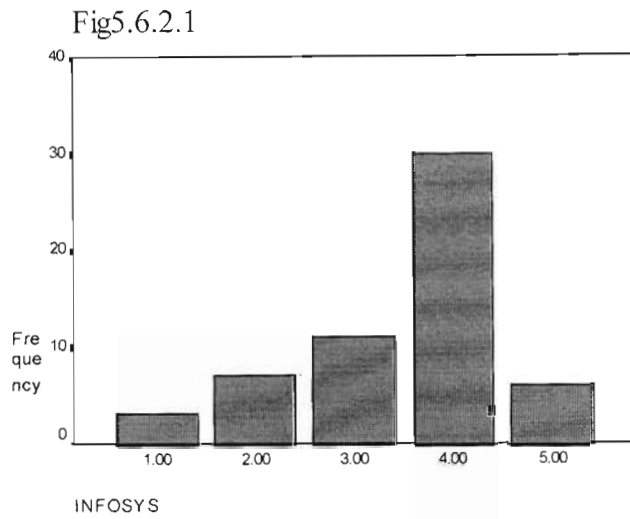
Table 5.6.2.1 Information System

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 3 | 5.3 | 5.3 | 5.3 |
|  | 2.00 | 7 | 12.3 | 12.3 | 17.5 |
|  | 3.00 | 11 | 19.3 | 19.3 | 36.8 |
|  | 4.00 | 30 | 52.6 | 52.6 | 89.5 |
|  | 5.00 | 6 | 10.5 | 10.5 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.6.2.1 indicates an overwhelming majority of 63.1% of respondents felt "to greater than some extent" that the information system in place provides the team with the data it needs to set goals. The mean was 3.5 and the standard deviation was 1.0 indicating that the knowledge management system in place is rated highly.

## 5.7.0 Degree of Change as a result of Teamwork

5.7.1 Since the introduction of teamworking to what extent has the amount of communication increased?

Fig 5.7.1
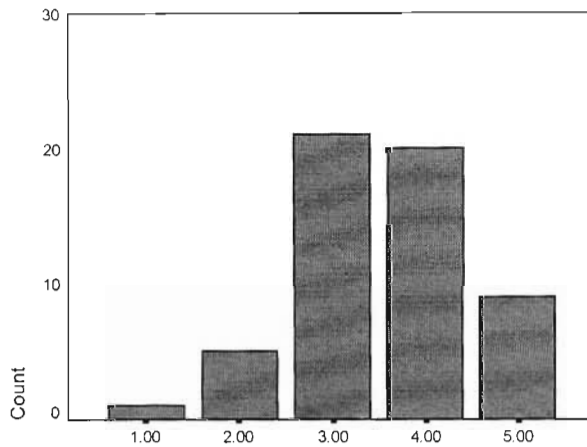


F11

*Table 5.7.1 Communication Increased*

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | 1.00  | 1         | 1.8     | 1.8           | 1.8                |
|       | 2.00  | 5         | 8.8     | 8.8           | 10.5               |
|       | 3.00  | 21        | 36.8    | 36.8          | 47.4               |
|       | 4.00  | 22        | 38.7    | 38.7          | 86                 |
|       | 5.00  | 9         | 15.8    | 15.8          | 100.0              |
|       | Total | 57        | 100.0   | 100.0         |                    |

Table 5.7.1 indicates that 36.8% of respondents, felt that "to some extent" communication has increased since the introduction of teamwork while a majority of 54.5 % felt that it had increased "to a significant extent". The mean was 3.6 and the standard deviation was 0.92 indicating a significant increase in the level of communication.

## 5.7.2 To what extent has co-operation among team members increased?

Fig 5.7.2
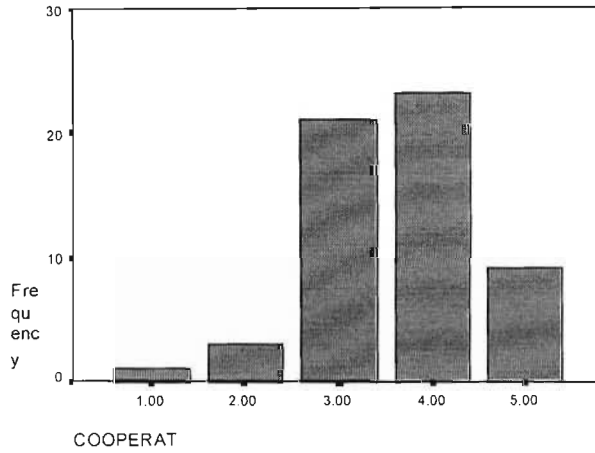


*Table 5.7.2 Cooperation Increased*

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 1 | 1.8 | 1.8 | 1.8 |
|  | 2.00 | 3 | 5.3 | 5.3 | 7.0 |
|  | 3.00 | 21 | 36.8 | 36.8 | 43.9 |
|  | 4.00 | 23 | 40.4 | 40.4 | 84.2 |
|  | 5.00 | 9 | 15.8 | 15.8 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.7.2 indicates that 36.5% of respondents, felt that co-operation had increased "to some extent" since the introduction of teamwork while a majority of 56.2% felt it had increased "to a significant extent". The mean was 3.6 and the standard deviation was .88 indicating that co-operation had increased to a significant extent.

## 5.7.3 To what extent is the work interesting?

Fig 5.7.3



77
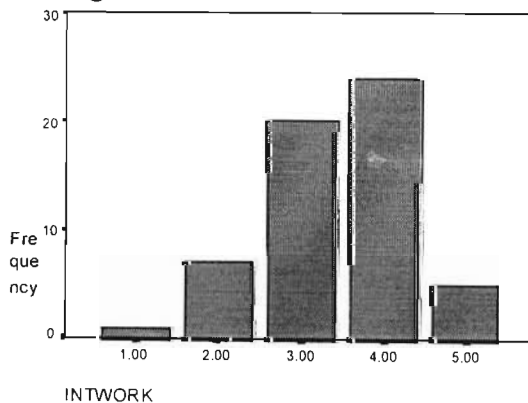
*Table 5.7.3 Work Interesting*

|  |  | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 1 | 1.8 | 1.8 | 1.8 |
|  | 2.00 | 7 | 12.3 | 12.3 | 14.0 |
|  | 3.00 | 20 | 35.1 | 35.1 | 49.1 |
|  | 4.00 | 24 | 42.1 | 42.1 | 91.2 |
|  | 5.00 | 5 | 8.8 | 8.8 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.7.3 indicates that 35.1% of respondents, felt that work had become interesting since the introduction of teamwork while 50.9% felt that this was "to a significant extent". The mean was 3.4 and the standard deviation was .89 indicating a moderately high increase in the interest of work since the introduction of teamworking.

## 5.8.1 Work Demands

*5.8.1.0 Individual Role Clarity*

5.8.1.1 Too what extent are you clear about your duties and responsibilities?

Fig 5.8.1.1



YDUTRESP
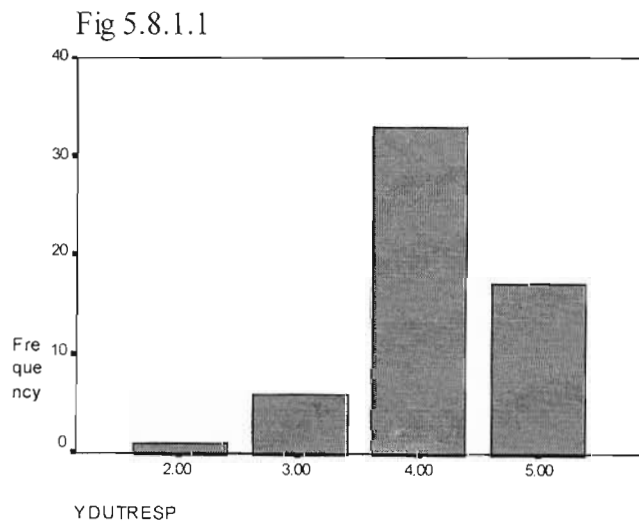
*Table 5.8.1.1 Individual Role Clarity*

|  |  | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 2.00 | 1 | 1.8 | 1.8 | 1.8 |
|  | 3.00 | 6 | 10.5 | 10.5 | 12.3 |
|  | 4.00 | 33 | 57.9 | 57.9 | 70.2 |
|  | 5.00 | 17 | 29.8 | 29.8 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

78

Table 5.8.1.1 indicates that 87.7% of respondents, felt that they are clear about their duties and responsibilities "to greater than some extent". The mean was 4.2 and the standard deviation was .67 indicating that individuals are very well aware of their roles and rated this area highly.

5.8.1.2 To what extent are you aware of the goals and objectives of your job?

Fig5.8.1.2
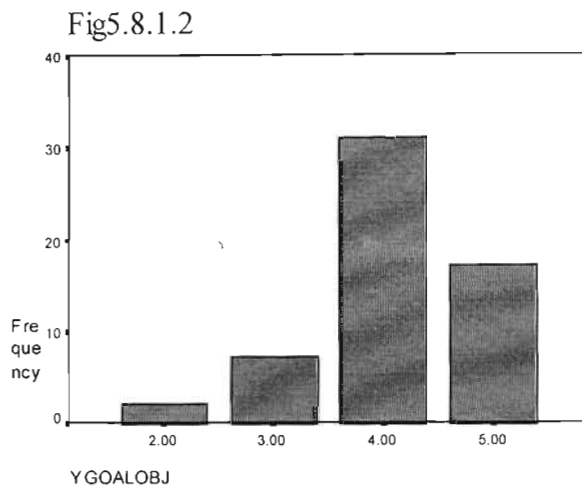


Table 5.8.1.2 *Individual Role Clarity*

|  |  | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 2.00 | 2 | 3.5 | 3.5 | 3.5 |
|  | 3.00 | 7 | 12.3 | 12.3 | 15.8 |
|  | 4.00 | 31 | 54.4 | 54.4 | 70.2 |
|  | 5.00 | 17 | 29.8 | 29.8 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.8.1.2 indicates that 84.2% of respondents, felt that they are aware of their goals and objectives of their job "to greater than some extent". The mean was 4.1 and the standard deviation was .75 indicating that individuals are well aware of their goals and tasks and rated this highly.

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*5.8.2.0 Collective Role Clarity*

5.8.2.1 To what extent are you clear about the duties and responsibilities of your team?

Fig 5.8.2.1



TDUTRESP
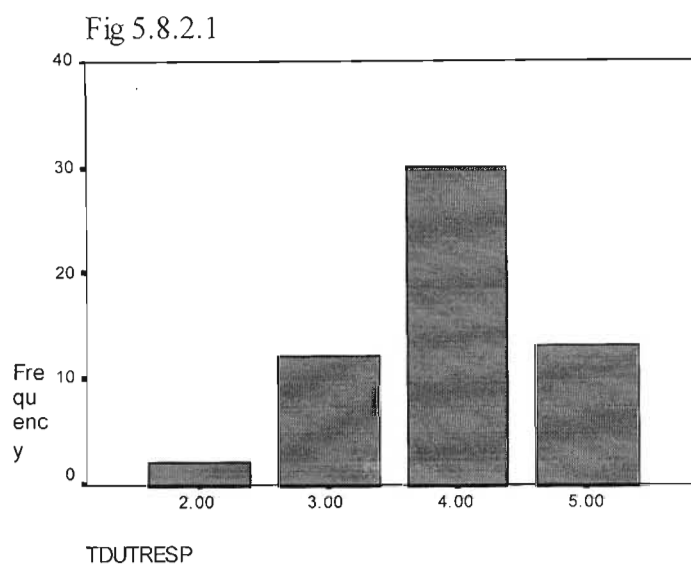
Table 5.8.2.1 *Collective Role Clarity*

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 2.00 | 2 | 3.5 | 3.5 | 3.5 |
|  | 3.00 | 12 | 21.1 | 21.1 | 24.6 |
|  | 4.00 | 30 | 52.6 | 52.6 | 77.2 |
|  | 5.00 | 13 | 22.8 | 22.8 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.8.2.1 indicates that 75.4% of respondents, felt that they are aware of the duties and responsibilities of their teams "to greater than some extent". The mean was 3.9 and the standard deviation was .77 indicating a high awareness of the duties and responsibilities of the team.

5.8.2.2 To what extent are you clear about the objectives and goals of the team?

Fig 5.8.2.2



TGOALOBJ
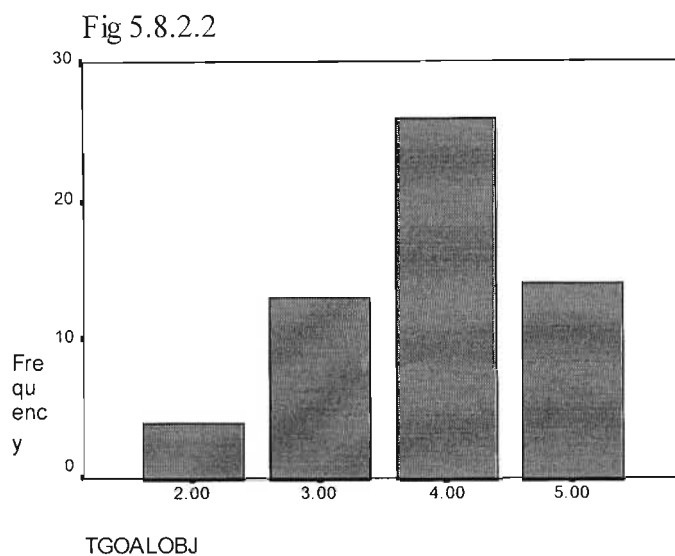
Table 5.8.2.2 Collective Role Clarity

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 2.00 | 4 | 7.0 | 7.0 | 7.0 |
| | 3.00 | 13 | 22.8 | 22.8 | 29.8 |
| | 4.00 | 26 | 45.6 | 45.6 | 75.4 |
| | 5.00 | 14 | 24.6 | 24.6 | 100.0 |
| | Total | 57 | 100.0 | 100.0 | |

Table 5.8.2.2 indicates that 70.2% of respondents are clear about the objectives and goals of the team "to greater than some extent". The mean was 3.9 and the standard deviation was .87 indicating a high awareness of the goals and objectives of the team

## 5.8.3.0 Role Conflict

5.8.3.1 To what extent do you believe that things should be done in a different way?

Fig 5.8.3.1



YDIFWAY
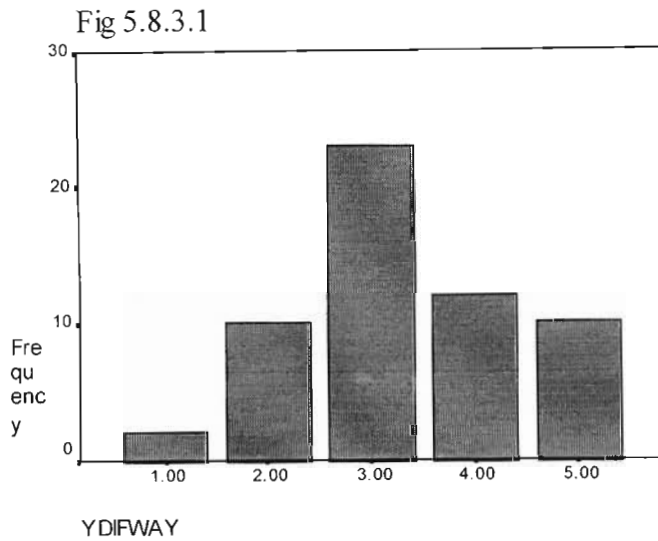
*Table 5.8.3.1 Role Conflict*

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 2 | 3.5 | 3.5 | 3.5 |
|  | 2.00 | 10 | 17.5 | 17.5 | 21.1 |
|  | 3.00 | 23 | 40.4 | 40.4 | 61.4 |
|  | 4.00 | 12 | 21.1 | 21.1 | 82.5 |
|  | 5.00 | 10 | 17.5 | 17.5 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.8.3.1 indicates that 40.4% of respondents believe that things should be done a different way "to some extent" while 38.8% believe it to be "greater than some extent". The mean was 3.9 and the standard deviation was .87 indicating that

individuals believe that things should be done in a different way and there is a high level of disagreement with the current way of doing things.

5.8.3.2 To what extent do you receive incompatible requests from different people?

Fig 5.8.3.2



INCOMREQ
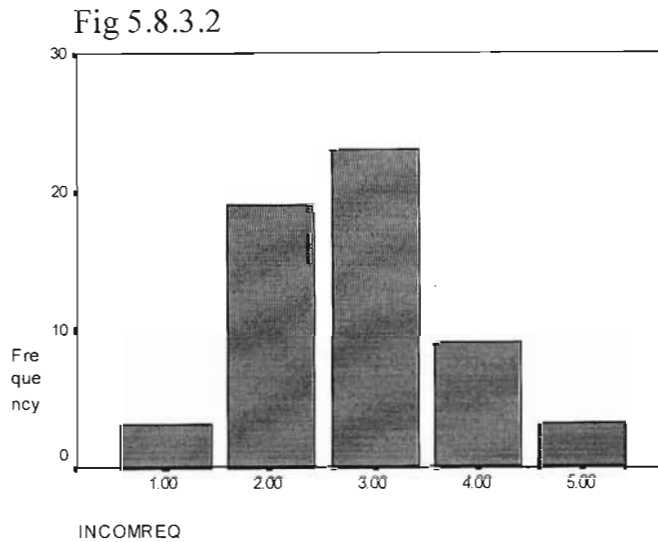
Table 5.8.3.2 Incompatible Requests

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 3 | 5.3 | 5.3 | 5.3 |
|  | 2.00 | 19 | 33.3 | 33.3 | 38.6 |
|  | 3.00 | 23 | 40.4 | 40.4 | 78.9 |
|  | 4.00 | 9 | 15.8 | 15.8 | 94.7 |
|  | 5.00 | 3 | 5.3 | 5.3 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.8.3.2 indicates that 38.6% of respondents, felt that they receive incompatible requests from different people "to less than some extent" while 40.4% believed that this was "to some extent". The mean was 2.8 and the standard deviation was .95 indicating that receiving incompatible requests is moderately low.

## 5.8.4.0 Skills Variety

5.8.4.1 Too what extent do you get the opportunity to make full use of your skills?

Fig 5.8.4.1



USESKILL
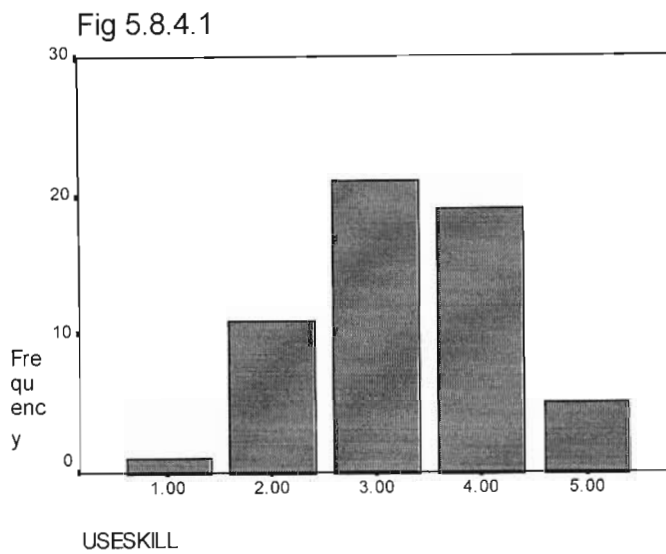
Table 5.8.4.1 Skills Variety

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 1 | 1.8 | 1.8 | 1.8 |
|  | 2.00 | 11 | 19.3 | 19.3 | 21.1 |
|  | 3.00 | 21 | 36.8 | 36.8 | 57.9 |
|  | 4.00 | 19 | 33.3 | 33.3 | 91.2 |
|  | 5.00 | 5 | 8.8 | 8.8 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.8.4.1 indicates that 36.8% of respondents, felt that they get the opportunity to make full use of your skills "to some extent" while 42.1% of respondents felt that it was "to greater than some extent". The mean was 3.3 and the standard deviation was .92 indicating that people are utilising all their skills within the teams to a moderately high extent however there is still a significant amount (21.1%) who are not being utilised fully and needs to be investigated.

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## 5.8.5 0 Problem Solving

5.8.5.1 Too what extent do you have to solve problems, which have no obvious correct answers?

Fig 5.8.5.1



NOANSWER
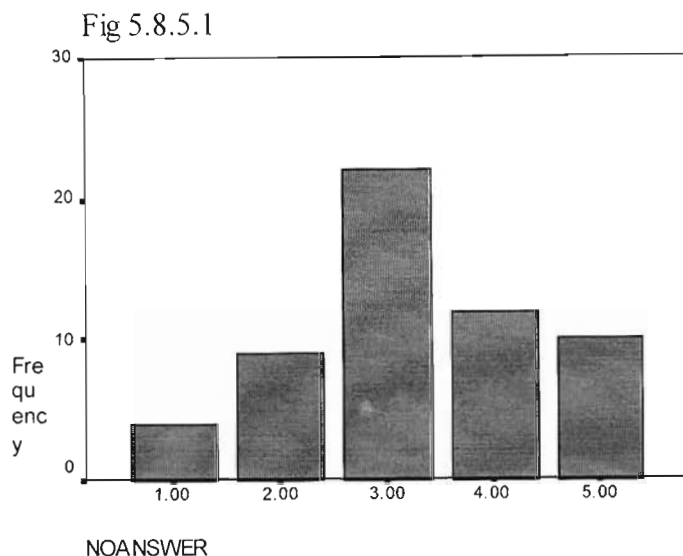
Table 5.8.5.1 Problem Solving

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 4 | 7.0 | 7.0 | 7.0 |
|  | 2.00 | 9 | 15.8 | 15.8 | 22.8 |
|  | 3.00 | 22 | 38.6 | 38.6 | 61.4 |
|  | 4.00 | 12 | 21.1 | 21.1 | 82.5 |
|  | 5.00 | 10 | 17.5 | 17.5 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.8.5.1 indicates that 22.8% of respondents' felt that " to less than some extent", they had to solve problems which has no obvious correct answers, 38.6% felt that this was "to some extent while 38.6% felt that this was "to greater than some extent. The mean was 3.3 and the standard deviation was 1.1, indicating that individuals are to a moderately high extent challenged within teams.

## 5.8.6.0 Workload

5.8.6.1 To what extent do you find that work piles up faster than you can complete it?

Fig 5.8.6.1



PILESUP
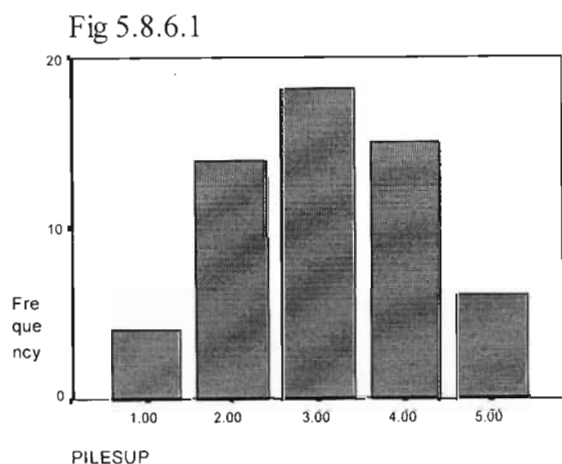
Table5.8.6.1 Workload

| | | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 4 | 7.0 | 7.0 | 7.0 |
| | 2.00 | 14 | 24.6 | 24.6 | 31.6 |
| | 3.00 | 18 | 31.6 | 31.6 | 63.2 |
| | 4.00 | 15 | 26.3 | 26.3 | 89.5 |
| | 5.00 | 6 | 10.5 | 10.5 | 100.0 |
| | Total | 57 | 100.0 | 100.0 | |

Table 5.8.6.1 indicates that 31.6% of respondents, felt that " to less than some extent" work piles up faster than they can complete it, 31.6% felt that that this was "to some extent" while 36.8% felt that this was "to greater than some extent". The mean was 3.1 and the standard deviation was 1.1 indicating that the workload is significant to a moderate extent.

5.8.6.2 To what extent do you find yourself working faster than you would like in order to complete your work?

Fig 5.8.6.2



WORKFAST
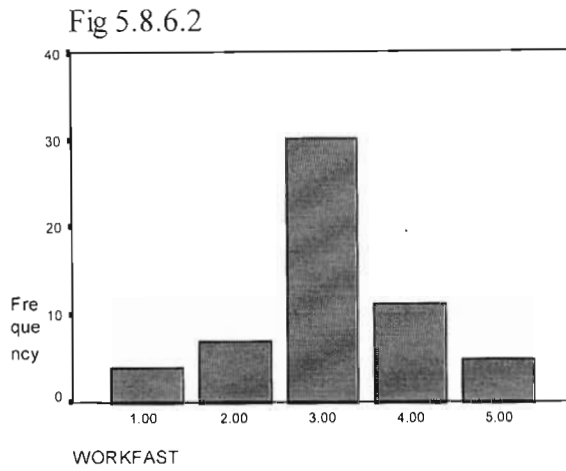
Table 5.8.6.2 *Workload*

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 4 | 7.0 | 7.0 | 7.0 |
| | 2.00 | 7 | 12.3 | 12.3 | 19.3 |
| | 3.00 | 30 | 52.6 | 52.6 | 71.9 |
| | 4.00 | 11 | 19.3 | 19.3 | 91.2 |
| | 5.00 | 5 | 8.8 | 8.8 | 100.0 |
| | Total | 57 | 100.0 | 100.0 | |

Table 5.8.6.2 indicates that 19.3% of respondents, felt that "to less than some extent" they are working faster than they would like to in order to complete their work while 28.1% felt that this was "to greater than some extent. A majority of 52.6% felt that this was "to some extent". The mean was 3.1 and the standard deviation was .98 indicating that team members to a moderate extent do feel rushed in their efforts to complete their tasks

## 5.9.0 Outcomes

### 5.9.1.0 Organisational Commitment

5.9.1.1 To what extent are you proud to tell people whom you work for?

Fig 5.9.1.1
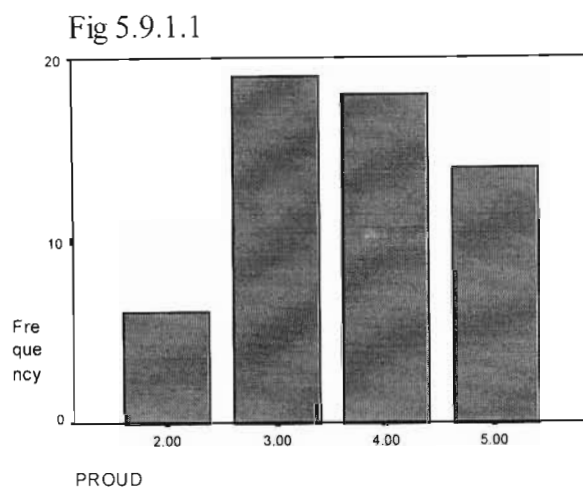


PROUD

*Table 5.9.1.1 Proud of Organisation*

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | 2.00  | 6         | 10.5    | 10.5          | 10.5               |
|       | 3.00  | 19        | 33.3    | 33.3          | 43.9               |
|       | 4.00  | 18        | 31.6    | 31.6          | 75.4               |
|       | 5.00  | 14        | 24.6    | 24.6          | 100.0              |
|       | Total | 57        | 100.0   | 100.0         |                    |

Table 5.9.1.1 indicates that 33.3% of respondents, felt "to some extent" that they were proud to tell people who they worked for, while 56.2% respondent felt that this to be "to greater than some extent". The mean was 3.7 and the standard deviation was .96 indicating a high level of pride in the organisation.

5.9.1.2 To what extent do you feel yourself to be part of Bioproducts?

Fig5.9.1.2



PARTBIO
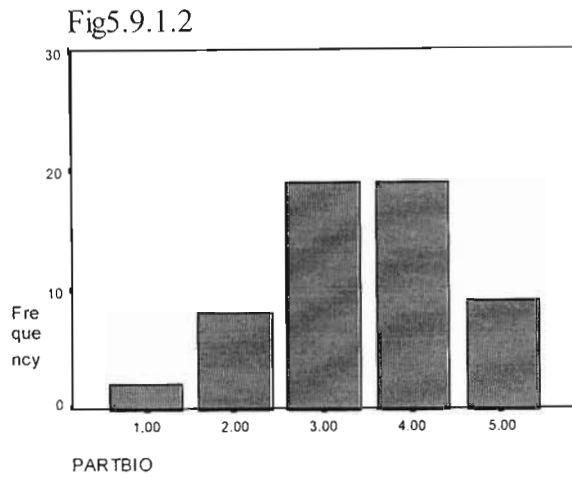
Table 5.9.1.2 Part of Organisation

|  |  | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 2 | 3.5 | 3.5 | 3.5 |
|  | 2.00 | 8 | 14.0 | 14.0 | 17.5 |
|  | 3.00 | 19 | 33.3 | 33.3 | 50.9 |
|  | 4.00 | 19 | 33.3 | 33.3 | 84.2 |
|  | 5.00 | 9 | 15.8 | 15.8 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.9.1.2 indicates that 33.3% of respondents, felt "to some extent" they feel part of Bioproducts while 49.1% believed this to be "to greater than some extent". The mean was 3.4 and the standard deviation was 1.1. indicating a moderately high level of identification with the organisation.

5.9.1.3 To what extent do you understand the long-term strategy of AECI Bioproducts?

Fig 5.9.1.3
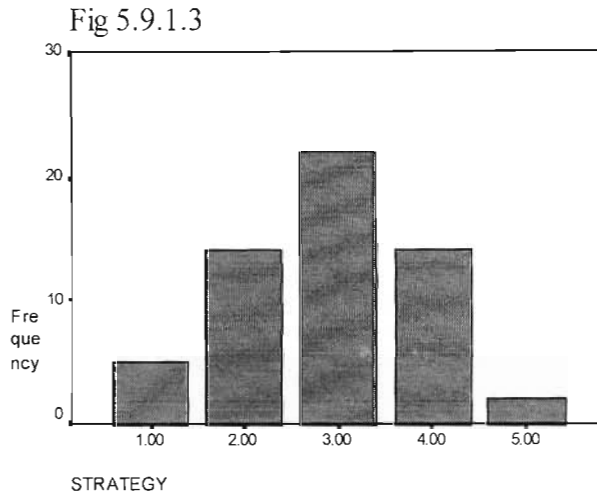


STRATEGY

Table 5.9.1.3 Understanding of Strategy

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 5 | 8.8 | 8.8 | 8.8 |
|  | 2.00 | 14 | 24.6 | 24.6 | 33.3 |
|  | 3.00 | 22 | 38.6 | 38.6 | 71.9 |
|  | 4.00 | 14 | 24.6 | 24.6 | 96.5 |
|  | 5.00 | 2 | 3.5 | 3.5 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.9.1.3 indicates that 24.6% of respondents "to less than some extent" understand the long- term strategy of Bioproducts, 38.6% understand the strategy "to some extent" while 28.1% understand it "to greater than some extent". The mean was 2.9 and the standard deviation was 1.0 indicates that the strategy is moderately well understood.

5.9.1.4 To what extent do you have confidence in the leadership of AECI
Bioproducts?

Fig 5.9.1.4



CONFILED
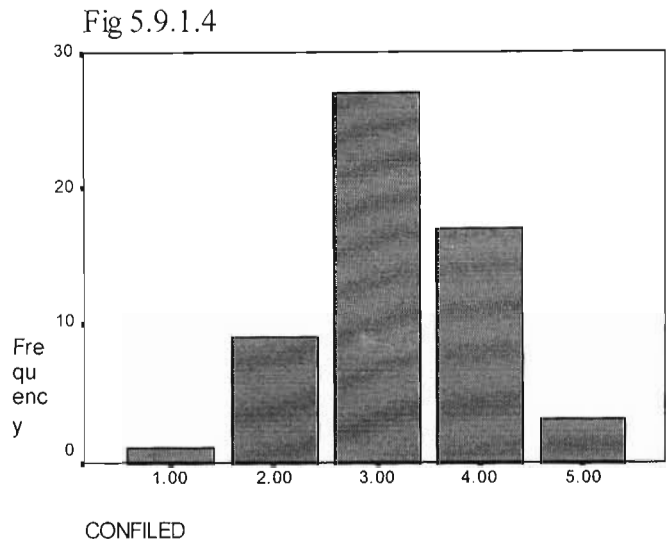
Table 5.9.1.4 Confidence in Leadership

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 1 | 1.8 | 1.8 | 1.8 |
|  | 2.00 | 9 | 15.8 | 15.8 | 17.5 |
|  | 3.00 | 27 | 47.4 | 47.4 | 64.9 |
|  | 4.00 | 17 | 29.8 | 29.8 | 94.7 |
|  | 5.00 | 3 | 5.3 | 5.3 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.9.1.4 indicates that 17.5% of respondents felt that " to less than some extent"
they have confidence in the Leadership of Bioproducts, 47.4% felt that this was "to
some extent" while 35.1 felt that this was "to greater than some extent". The mean
was 3.2 and the standard deviation was .84 indicating a moderate level of confidence
in the leadership.

5.9.1.5 To what extent do you believe that you have everything you need to do your job correctly?

Fig 5.9.1.5



JOBCOREC
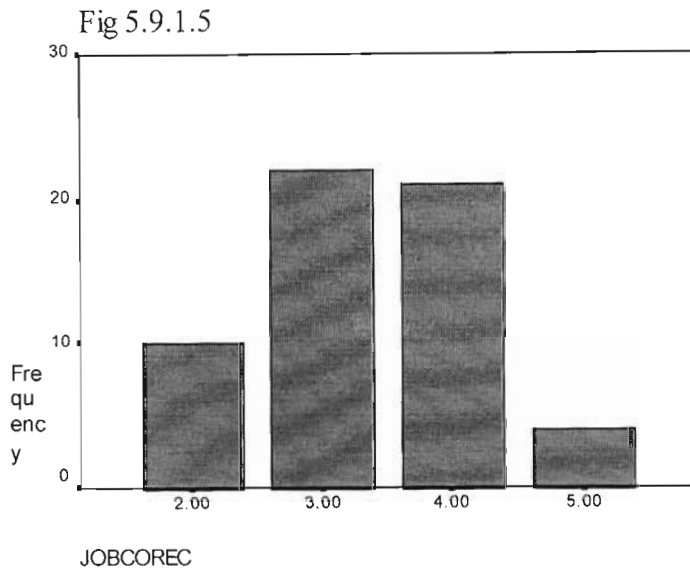
Table 5.9.1.5 Needs Addressed

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 2.00 | 10 | 17.5 | 17.5 | 17.5 |
|  | 3.00 | 22 | 38.6 | 38.6 | 56.1 |
|  | 4.00 | 21 | 36.8 | 36.8 | 93.0 |
|  | 5.00 | 4 | 7.0 | 7.0 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.9.1.5 indicates that 17.5% believe that "to less than some extent" they have everything they need to do their job correctly, 38.6% felt that this was to some extent while 43.8% believed this to be "to greater than some extent". The mean was 3.3 and the standard deviation was .85 indicating that the infrastructure within the organisation to ensure excellent performance of the individuals is moderately high.

5.9.1.6 To what extent do you believe communications from Senior Management at Bioproducts is frequent enough?

Fig 5.9.1.6



COMSMFRQ
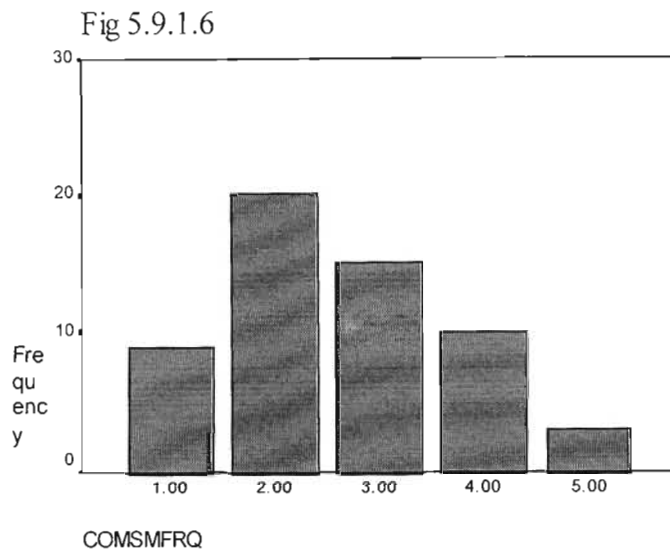
Table 5.9.1.6 Communication from Senior Management

|  |  | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 9 | 15.8 | 15.8 | 15.8 |
|  | 2.00 | 20 | 35.1 | 35.1 | 50.9 |
|  | 3.00 | 15 | 26.3 | 26.3 | 77.2 |
|  | 4.00 | 10 | 17.5 | 17.5 | 94.7 |
|  | 5.00 | 3 | 5.3 | 5.3 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.9.1.6 indicates that 50.9% of respondents, felt "to less than some extent" communications from senior management was frequent enough while 26.3% felt that this was "to some extent". The mean was 2.6 and the standard deviation was 1.1 indicating that senior management were rated as moderately low in ensuring that employees were kept informed.

5.9.1.7 Too what extent do you feel you can trust what Bioproducts senior management is telling you?

Fig 5.9.1.7
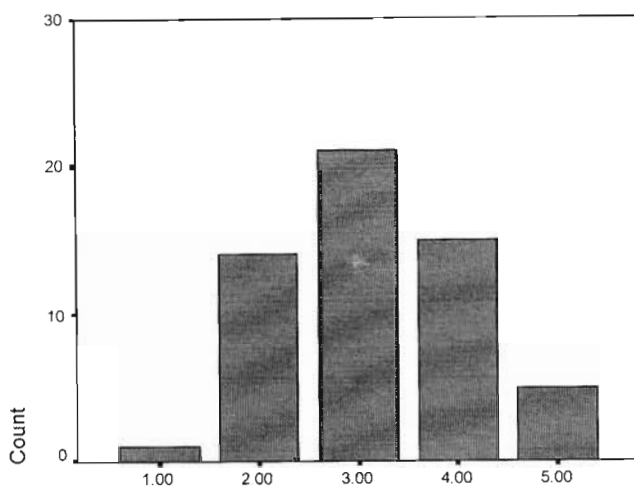


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Table 5.9.1.7 Trust in Senior Management

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 2 | 3.5 | 3.5 | 3.5 |
|  | 2.00 | 14 | 24.6 | 24.6 | 28.1 |
|  | 3.00 | 21 | 36.9 | 36.9 | 64.9 |
|  | 4.00 | 15 | 26.3 | 26.3 | 91.2 |
|  | 5.00 | 5 | 8.8 | 8.8 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.9.1.7 indicates that 28.1% of respondents, felt that they could trust senior management "to less than some extent", 36.9 % felt "to some extent" while 35.1% felt "to greater than some extent". The mean was 3.1 and the standard deviation was 1.0 indicating that trust in senior management is moderate. Based on the uncertainty one would expect that trust between senior management and staff would deteriorate.

5.9.1.8 To what extent are you satisfied with the company's training programme?

Fig 5.9.1.8



BOTRAINP
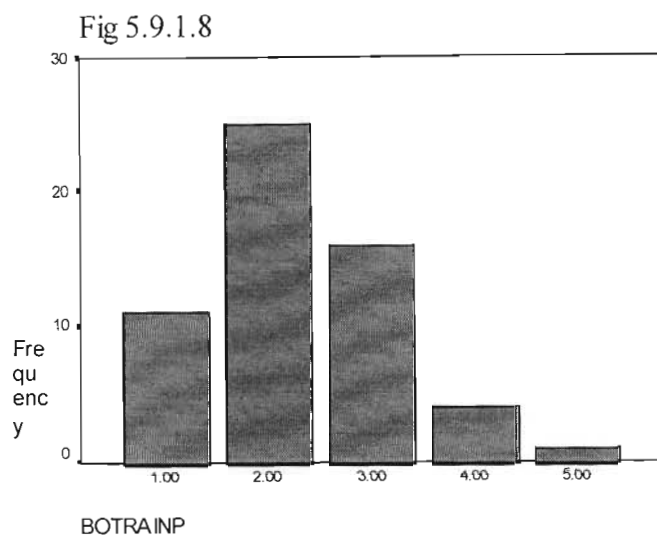
Table 5.9.1.8 *Organisation Training*

| | | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 11 | 19.3 | 19.3 | 19.3 |
| | 2.00 | 25 | 43.9 | 43.9 | 63.2 |
| | 3.00 | 16 | 28.1 | 28.1 | 91.2 |
| | 4.00 | 4 | 7.0 | 7.0 | 98.2 |
| | 5.00 | 1 | 1.8 | 1.8 | 100.0 |
| | Total | 57 | 100.0 | 100.0 | |

Table 5.9.1.8 indicates that 63.2% of respondents felt that "to less than some extent they are satisfied with the company's training programme while 28.1% felt this was "to some extent". The mean was 2.2 and the standard deviation was .92 indicating a low level of satisfaction and is one of the areas that have been rated the weakest.

95

## 5.10.0 Job Satisfaction

5.10.1.1 To what extent are you satisfied with the way your firm is managed?

Fig 5.10.1.1



SABIOMAN
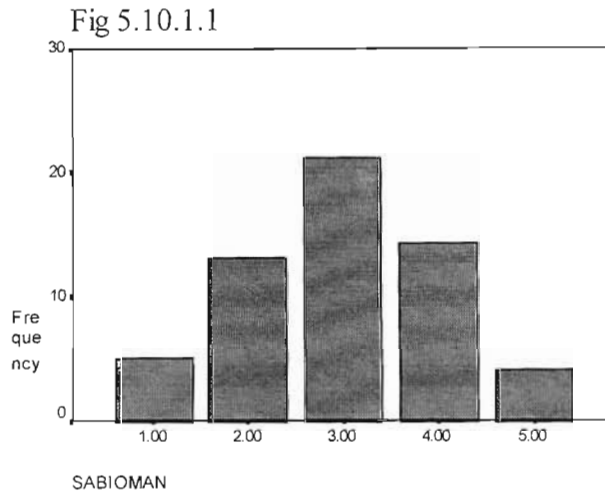
Table 5.10.1.1 Satisfied with Management's Performance

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | 1.00  | 5         | 8.8     | 8.8           | 8.8                |
|       | 2.00  | 13        | 22.8    | 22.8          | 31.6               |
|       | 3.00  | 21        | 36.8    | 36.8          | 68.4               |
|       | 4.00  | 14        | 24.6    | 24.6          | 93.0               |
|       | 5.00  | 4         | 7.0     | 7.0           | 100.0              |
|       | Total | 57        | 100.0   | 100.0         |                    |

Table 5.10.1.1 indicates that 31.6% of respondents are "to less than some extent" satisfied with the way the firm is managed, 36.8% felt that this was "to some extent" and 31.6% felt that this to be "to greater than some extent". The mean was 3.0 and the standard deviation was 1.1. The responses indicate a moderate level of satisfaction in the way the firm is managed.

96

5.10.1.2 To what extent are you satisfied with the opportunity to use your ability?

Fig 5.10.1.2



USEABYLT
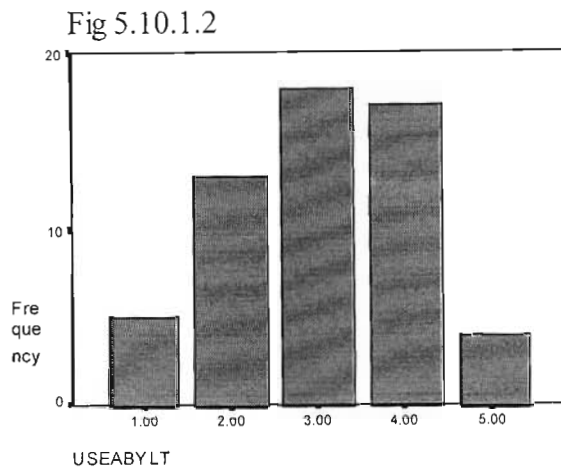
Table 5.10.1.2 Oopportunity to use your Ability

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 5 | 8.8 | 8.8 | 8.8 |
|  | 2.00 | 13 | 22.8 | 22.8 | 31.6 |
|  | 3.00 | 18 | 31.6 | 31.6 | 63.2 |
|  | 4.00 | 17 | 29.8 | 29.8 | 93.0 |
|  | 5.00 | 4 | 7.0 | 7.0 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.10.1.2 indicates that 31.6% of respondents felt that " to less than some extent" they have the opportunity to use their ability, 31.6% felt this to be "to some extent" and 36.8% felt this to be "to greater than some extent". The mean was 3.0 and the standard deviation was 1.1. There is a moderate level of satisfaction in team member's use of ability. This is surprising considering that in question 13.1 on skills variety people responded positively (mean of 3.3 and standard deviation of .95) on the full use of their skills in team.

97

5.10.2.1 To what extent do you feel recognized for your job performance?

Fig 5.10.2.1
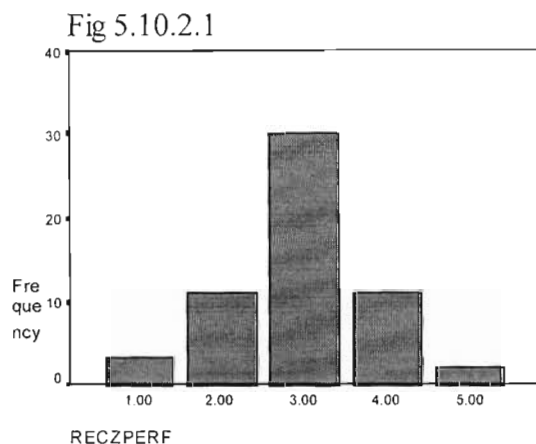


Table 5.10.2.1 Recognition

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 3 | 5.3 | 5.3 | 5.3 |
|  | 2.00 | 11 | 19.3 | 19.3 | 24.6 |
|  | 3.00 | 30 | 52.6 | 52.6 | 77.2 |
|  | 4.00 | 11 | 19.3 | 19.3 | 96.5 |
|  | 5.00 | 2 | 3.5 | 3.5 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.10.2.1 indicates that 24.6% of respondents, felt that they are recognised for their job performance while 22.8% felt this to be "to greater than some extent". A majority of 52.6% felt this to be "to some extent". The mean was 3.0 and the standard deviation was .86 indicating a moderate level of performance recognition.

5.10.3.1 To what extent do you enjoy coming to work?

Fig 5.10.3.1



ENJCOMW
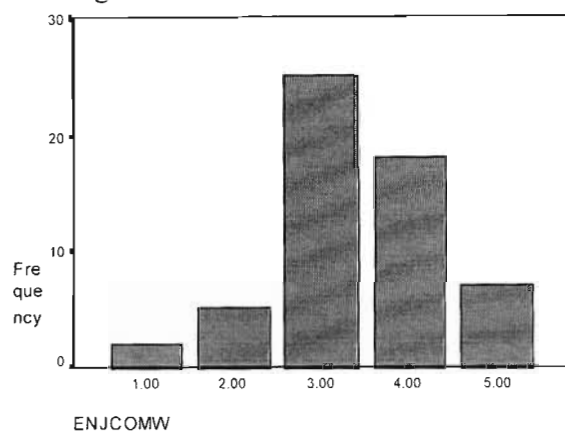
Table 5.10.3.1 Enjoy Work

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 2 | 3.5 | 3.5 | 3.5 |
|  | 2.00 | 5 | 8.8 | 8.8 | 12.3 |
|  | 3.00 | 25 | 43.9 | 43.9 | 56.1 |
|  | 4.00 | 18 | 31.6 | 31.6 | 87.7 |
|  | 5.00 | 7 | 12.3 | 12.3 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.10.3.1 indicates that 43.9% of respondents, felt that they enjoy coming to work "to some extent" while 43.9% of respondents felt this to be "to greater than some extent". The mean was 3.4 and the standard deviation was .94 indicating that people do enjoy coming to work to a moderate high extent.

5.10.4.1 To what extent do you feel missed when you are absent?

Fig 5.10.4.1
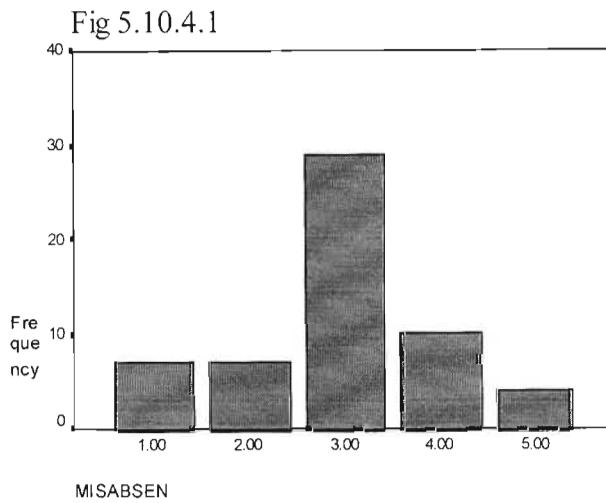


Table 5.10.4.1 Absence Missed

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 7 | 12.3 | 12.3 | 12.3 |
|  | 2.00 | 7 | 12.3 | 12.3 | 24.6 |
|  | 3.00 | 29 | 50.9 | 50.9 | 75.4 |
|  | 4.00 | 10 | 17.5 | 17.5 | 93.0 |
|  | 5.00 | 4 | 7.0 | 7.0 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.10.4.1 indicates that 24.6% of respondents, felt that they were "to some extent" missed when they were absent from work while 24.5% felt that this to be "to greater than some extent". A majority of 50.9% of respondents felt this to be "to some extent". The mean was 2.9 and the standard deviation was 1.0 indicating that people are missed to a moderate extent.

5.10.5.1 To what extent are you happy with your job?

Fig 5.10.5.1



HAPPY JOB
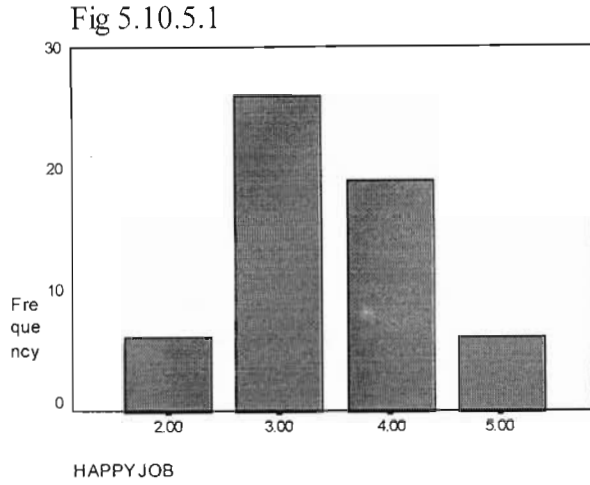
Table 5.10.5.1 Happy with Job

|  |  | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 2.00 | 6 | 10.5 | 10.5 | 10.5 |
|  | 3.00 | 26 | 45.6 | 45.6 | 56.1 |
|  | 4.00 | 19 | 33.3 | 33.3 | 89.5 |
|  | 5.00 | 6 | 10.5 | 10.5 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.10.5.1 indicates that 45.6% of respondents felt that they "to some extent' were happy with their jobs while 43.8% of respondents felt this to be "to greater than some extent". The mean was 3.4 and the standard deviation was .82 indicating a moderate to high degree of satisfaction with their job.

5.10.6.1 To what extent are you given authority to make decisions you need to make?

Fig 5.10.6.1



AUTHDEC
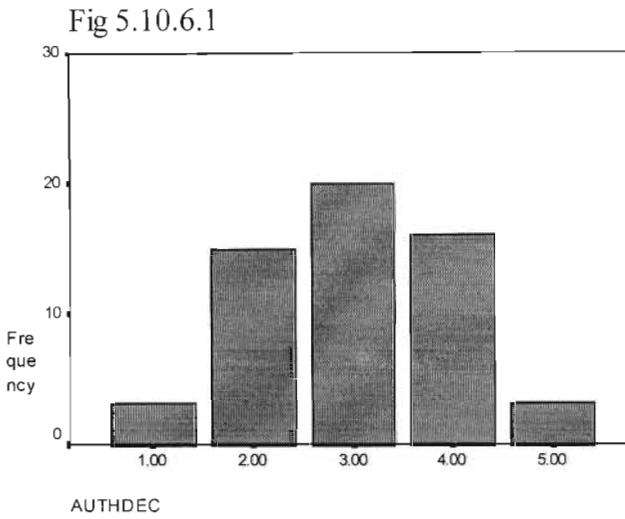
Table 5.10.6.1 Authority

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 3 | 5.3 | 5.3 | 5.3 |
|  | 2.00 | 15 | 26.3 | 26.3 | 31.6 |
|  | 3.00 | 20 | 35.1 | 35.1 | 66.7 |
|  | 4.00 | 16 | 28.1 | 28.1 | 94.7 |
|  | 5.00 | 3 | 5.3 | 5.3 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.10.6.1 indicates that 31.6% of respondents felt that "to less than some extent they are given authority to make decisions that are needed to be made, 35.1% respondents felt this to be "to some extent" while 33.4% felt this to be "to greater than some extent". The mean was 3.0 and the standard deviation was 1.0 indicating a moderate level of autonomy.

5.10.7.1 To what extent do you like the type of work you do?

Fig 5.10.7.1



LIKTYPWO
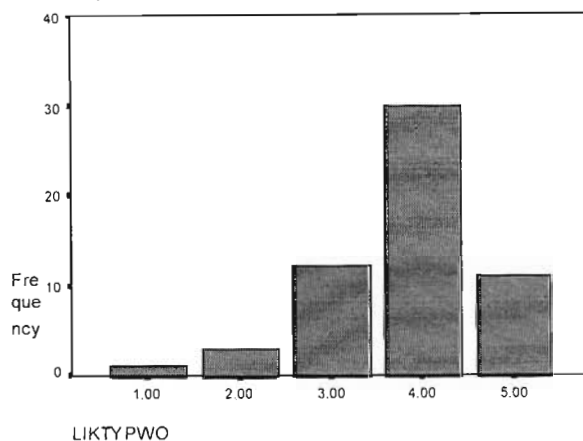
Table 5.10.7.1 Like Type of Work

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | 1.00  | 1         | 1.8     | 1.8           | 1.8                |
|       | 2.00  | 3         | 5.3     | 5.3           | 7.0                |
|       | 3.00  | 12        | 21.1    | 21.1          | 28.1               |
|       | 4.00  | 30        | 52.6    | 52.6          | 80.7               |
|       | 5.00  | 11        | 19.3    | 19.3          | 100.0              |
|       | Total | 57        | 100.0   | 100.0         |                    |

Table 5.10.7.1 indicates that 28.1% of respondents felt that "to some extent" they like the type of work they do while a majority of 71.9% felt this to be "to greater than some extent". The mean was 3.8 and the standard deviation was .87, which indicates a high level of match between job and employee.

5.10.8.1 To what extent do you believe AECI Bioproducts offers you opportunity for advancement?



F80

*Table 5.10.8.1 Opportunity for Advancement*

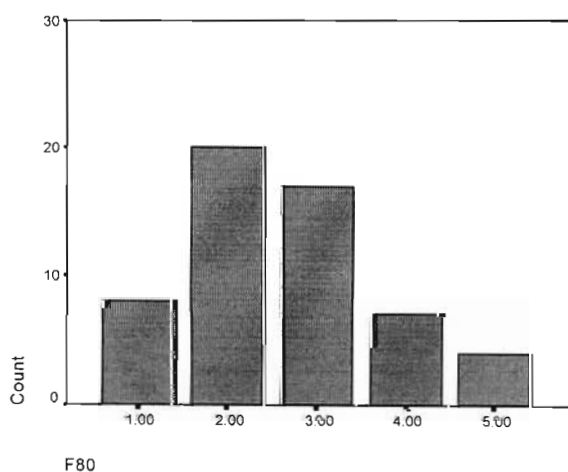|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 9 | 15.8 | 15.8 | 15.8 |
|  | 2.00 | 20 | 35.1 | 35.1 | 50.9 |
|  | 3.00 | 17 | 29.8 | 29.8 | 80.7 |
|  | 4.00 | 7 | 12.3 | 12.3 | 93.0 |
|  | 5.00 | 4 | 7.0 | 7.0 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.10.8.1 indicates that 50.9% of respondents felt that to "less than some extent" Bioproducts offers opportunity for advancement, 29.8% felt this to be "to some extent" and 19.3% felt this to be "to greater than some extent". The mean was 2.6 and the standard deviation was 1.1 indicating a low-level response to opportunity for advancement.

## 5.11.0 Stress

### 5.11.1 Job – related Strain

5.11.1.1 During the past month, to what extent has your job made you feel tense?

Fig 5.11.1.1
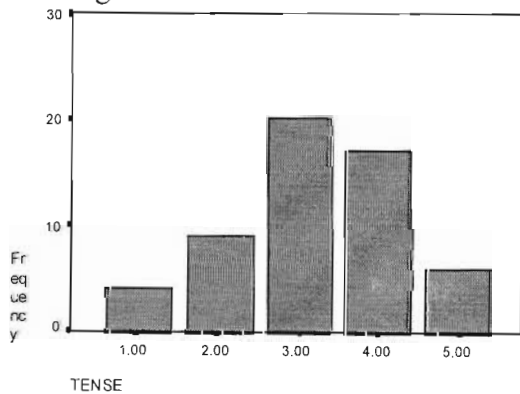


*Table 5.11.1.1 Tense*

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 4 | 7.0 | 7.1 | 7.1 |
|  | 2.00 | 9 | 15.8 | 16.1 | 23.2 |
|  | 3.00 | 20 | 35.1 | 35.7 | 58.9 |
|  | 4.00 | 17 | 29.8 | 30.4 | 89.3 |
|  | 5.00 | 6 | 10.5 | 10.7 | 100.0 |
|  | Total | 56 | 98.2 | 100.0 |  |

Table 5.11.1.1 indicates that 23.2% of respondents felt that their jobs made them tense "to less than some extent", 35.7% felt this to be "to some extent" and 41.1% felt it to be "to greater than some extent". The mean was 3.2and the standard deviation was 1.1 indicating a moderately high level of tension within the employees

5.11.1.2 During the past month, to what extent has your job made you feel frustrated?

Fig 5.11.1.2
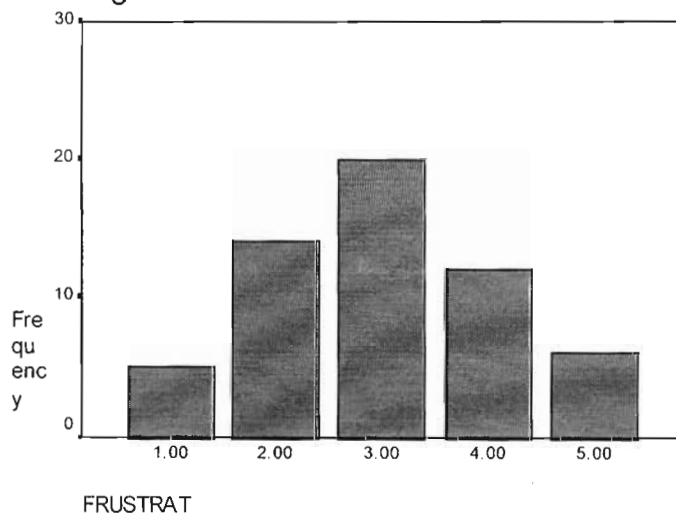


FRUSTRAT

Table 5.11.1.2 Frustration

|  |  | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 5 | 8.8 | 8.8 | 8.8 |
|  | 2.00 | 14 | 24.6 | 24.6 | 33.3 |
|  | 3.00 | 20 | 35.1 | 35.1 | 68.4 |
|  | 4.00 | 12 | 21.1 | 21.1 | 89.5 |
|  | 5.00 | 6 | 10.5 | 10.5 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.11.1.2 indicates that 33.3% of respondents felt that "to less than some extent" their jobs made them feel frustrated, 35.1% felt this to be "to some extent" while, 31.6% felt this to be "to greater than some extent". The mean was 3.0 and the standard deviation was 1.1 indicating a moderate level of frustration among employees.

## 5.11.2.0 **General Strain**

### 5.11.2.1 To what extent have you recently lost sleep over worry at work?

Fig 5.11.2.1
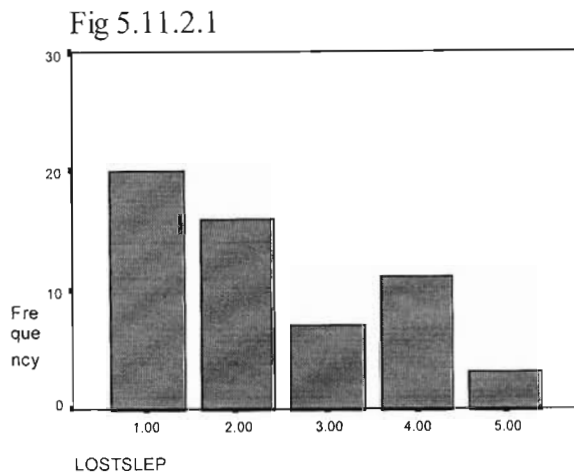


LOSTSLEP

*Table 5.11.2.1 Lost Sleep*

| | | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 20 | 35.1 | 35.1 | 35.1 |
| | 2.00 | 16 | 28.1 | 28.1 | 63.2 |
| | 3.00 | 7 | 12.3 | 12.3 | 75.4 |
| | 4.00 | 11 | 19.3 | 19.3 | 94.7 |
| | 5.00 | 3 | 5.3 | 5.3 | 100.0 |
| | Total | 57 | 100.0 | 100.0 | |

Table 5.11.2.1 indicates that 63.2% of respondents felt " to less than some extent" that they had lost sleep over worry at work, 12.3% felt this to be "to some extent" and 24.6% felt this to be "to greater than some extent". The mean was 2.3 and the standard deviation was 1.3 indicating a relatively low incidence of worry about work

5.11.2.2 To what extent have you been able to face up to problems at work?

Fig 5.11.2.2
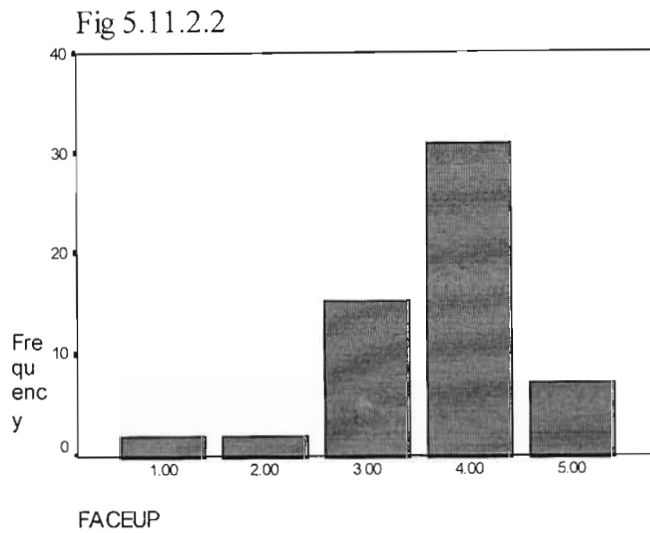


FACEUP

Table 5.11.2.2 Face up to Problems

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 2 | 3.5 | 3.5 | 3.5 |
|  | 2.00 | 2 | 3.5 | 3.5 | 7.0 |
|  | 3.00 | 15 | 26.3 | 26.3 | 33.3 |
|  | 4.00 | 31 | 54.4 | 54.4 | 87.7 |
|  | 5.00 | 7 | 12.3 | 12.3 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.11.2.2 indicates that 26.3% of respondents felt that "to some extent" they could face up to problems at work while a overwhelming majority of 66.7% felt that they could face up to work "to greater than some extent". The mean was 3.7 and the standard deviation was .87 indicating that to a significant extent employees are able to deal with problems at work.

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5.11.2.3 To what extent has insecurity surrounding ownership of the company affected your motivation?

Fig 5.11.2.3



INSECMOT
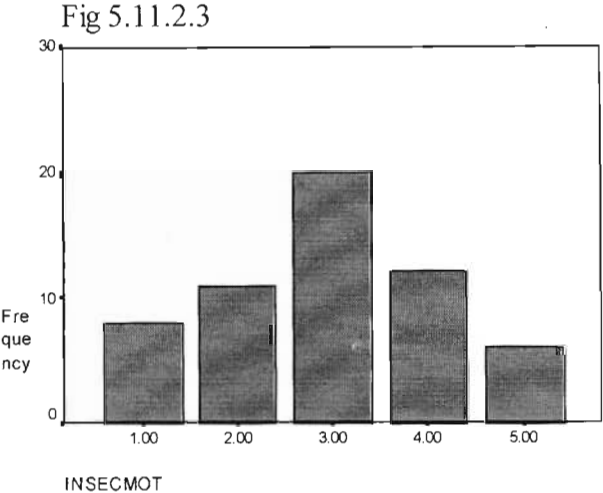
Table 5.11.2.3 Insecurity around Ownership affecting Motivation

|  |  | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 8 | 14.0 | 14.0 | 14.0 |
|  | 2.00 | 11 | 19.3 | 19.3 | 33.3 |
|  | 3.00 | 20 | 35.1 | 35.1 | 68.4 |
|  | 4.00 | 12 | 21.1 | 21.1 | 89.5 |
|  | 5.00 | 6 | 10.5 | 10.5 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.11.2.3 indicates that 33.3% of respondents felt insecurity around ownership of the company has affected motivation "to less than some extent", 35.8% felt this to be "to some extent" and 30.9% of respondents felt this to be "to greater than some extent". The mean was 3.2 and the standard deviation was .89 indicating a moderately high level of concern around ownership, which is affecting morale.

5.11.2.4 To what extent has insecurity around the ownership of the company affected job satisfaction?

Fig 5.11.2.4



SECJOBSA
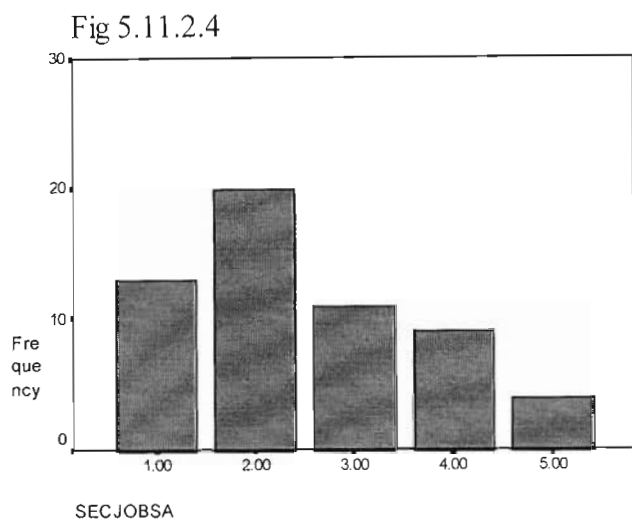
Table 5.11.2.4 Insecurity around Ownership affecting Job satisfaction

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 13 | 22.8 | 22.8 | 22.8 |
|  | 2.00 | 20 | 35.1 | 35.1 | 57.9 |
|  | 3.00 | 11 | 19.3 | 19.3 | 77.2 |
|  | 4.00 | 9 | 15.8 | 15.8 | 93.0 |
|  | 5.00 | 4 | 7.0 | 7.0 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.11.2.4 indicates that 57.9% of respondents felt that insecurity around ownership has affected job satisfaction "to less than some extent", 19.3% felt that this was "to some extent" and 22.8% felt this to be "to greater than some extent". The mean was 2.5 and the standard deviation was 1.2 indicating a low level of significance to job satisfaction.

5.11.2.5 To what extent do you believe that your job is secure?

Fig 5.11.2.5
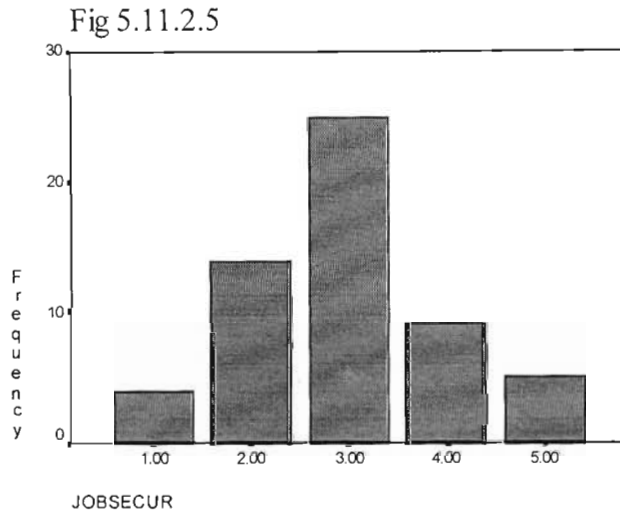


JOBSECUR

Table 5.11.2.5 Job Security

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 4 | 7.0 | 7.0 | 7.0 |
|  | 2.00 | 14 | 24.6 | 24.6 | 31.6 |
|  | 3.00 | 25 | 43.9 | 43.9 | 75.4 |
|  | 4.00 | 9 | 15.8 | 15.8 | 91.2 |
|  | 5.00 | 5 | 8.8 | 8.8 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.11.2.5 indicates that 31.6% of respondents felt that "to less than some extent" their jobs were secure, 43.9% felt this to be "to some extent" while 24.6% of respondents felt this to be "to greater than some extent". The mean was 2.9 and the standard deviation was 1.0 indicating that employees to a moderate extent are feeling hesitant about job security.

## 5.12.0 Perks

5.12.1 To what extent is your salary fair for the responsibilities you carryout?

Fig 5.12.1
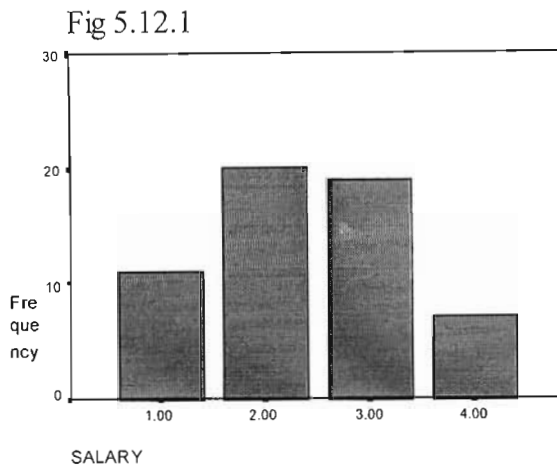


SALARY

Table 5.12.1 Salary

|       |       | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|-------|-------|-----------|---------|---------------|---------------------|
| Valid | 1.00  | 11        | 19.3    | 19.3          | 19.3                |
|       | 2.00  | 20        | 35.1    | 35.1          | 54.4                |
|       | 3.00  | 19        | 33.3    | 33.3          | 87.7                |
|       | 4.00  | 7         | 12.3    | 12.3          | 100.0               |
|       | Total | 57        | 100.0   | 100.0         |                     |

Table 5.12.1 indicates that 54.4% of respondents felt that their salaries were "to less than some extent" fair for the responsibilities they carried out, 33.3% of respondents felt it was fair "to some extent" while 12.3% felt it was "to greater than some extent". The mean was 2.4 and the standard deviation was .94 indicating that there are low levels of satisfaction towards salaries.

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5.12.2 To what extent do you believe that the basic working conditions (leave, overtime etc.) are fair?



Fig 5.12.2
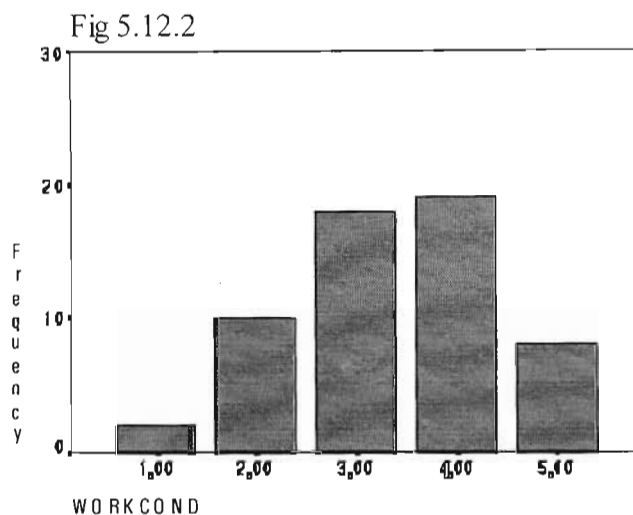
*Table 5.12.2 Working Conditions*

|  |  | Frequency | Percent | Valid Percent | Cumulativ e Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 2 | 3.5 | 3.5 | 3.5 |
|  | 2.00 | 10 | 17.5 | 17.5 | 21.1 |
|  | 3.00 | 18 | 31.6 | 31.6 | 52.6 |
|  | 4.00 | 19 | 33.3 | 33.3 | 86.0 |
|  | 5.00 | 8 | 14.0 | 14.0 | 100.0 |
|  | Total | 57 | 100.0 | 100.0 |  |

Table 5.12.2 indicates that 21.1% of respondents felt that "to some extent" working conditions are fair, 31.6% felt that this was "to some extent" and 47.3% of respondents felt that this was to greater than some extent. The mean was 3.4 and the standard deviation was 1.0 indicating a moderate to high level of satisfaction with the basic working conditions.

### 5.13.0 Correlational Analysis

### 5.13.1 Correlation between Teamwork and Work Demands

A correlation analysis was done between teamwork and work demands. Teamwork consisted of the average of all the questions related to autonomy, job design, composition of teams, context, process within the teams and organisational support and this represented the rating of the individual perception of teamwork. Similarly work demands is the individuals average rating of individual role clarity, collective role clarity, role conflict and skills variety.

*Table 5.13.1 Correlation between Teamwork and Work Demands*

|  |  | TEAMWORK | WORK DEMAND |
|---|---|---|---|
| TEAMWORK | Pearson Correlation | 1.000 | .495 |
|  | Sig. (2-tailed) | . | .000 |
|  | N | 57 | 57 |

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

A correlation analysis reveals that there is a significant positive relationship (.495) between teamwork and work demand, which is significant at the 0.01 level. One can infer that as teamworking increases work demand increases.

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## 5.13.2 Correlation between Teamwork and Job Satisfaction

A correlation analysis was carried out between teamwork and job satisfaction.

Job satisfaction is the average rating of the following variables for each individual. It takes into account the rating of individuals satisfaction on the way the firm is managed, the opportunity to use their ability, the extent to which they feel recognised for their job performance, enjoy coming to work, whether absence is recognised, happy with job, authority to make decisions, like the type of work and the opportunity for advancement.

*Table 5.13.2 Correlation between Teamwork and Job Satisfaction*

|  |  | TEAMWORK | JOB SATISFACTION |
|---|---|---|---|
| TEAMWORK | Pearson Correlation | 1.000 | .593 |
|  | Sig. (2-tailed) | . | .000 |
|  | N | 57 | 57 |

** Correlation is significant at the 0.01 tailed

One can conclude that there is a significant relationship between teamwork and job satisfaction (.593) at the 0.01 level. This indicates that as the perception of teamwork increases job satisfaction increases.

## 5.13.3 Correlation between Teamwork and Stress

A correlation analysis was undertaken between teamwork and stress to determine whether any relationship exists. Stress is the average variable of job related strains, general strain and includes the insecurity of ownership and its effect on job satisfaction, motivation and job security.

*Table 5.13.3 Correlation between Teamwork and Stress*

|  |  | TEAMWORK | STRESS |
|---|---|---|---|
| TEAMWORK | Pearson Correlation | 1.000 | .351 |
|  | Sig. (2-tailed) | . | .008 |
|  | N | 57 | 56 |

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

The correlation analysis reveals that there is a relationship (.351) between teamwork and stress which is significant at the 0.01 level. Thus one can conclude that as peoples perception of teamwork increases, their perception of stress levels increases

## 5.13.4 Correlation between Teamwork and Organisational Commitment.

The relationship between teamwork and organisational commitment was investigated. Organisational commitment is the average variable of the following, individuals pride in telling people who they work for, whether they feel part of the organisation, the understanding of the long term strategy, the confidence in the leadership, organisational support, communications from senior management, trust in management and the companies training programme.

*Table 5.13.4 Correlation between Teamwork and Organisational Commitment*

|  |  | TEAMWORK | ORGANISATIONAL COMMITMENT |
|---|---|---|---|
| TEAMWORK | Pearson Correlation | 1.000 | .441 |
|  | Sig. (2-tailed) | . | .001 |
|  | N | 57 | 57 |

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

The correlation revealed that a significant relationship (0.441) exists at the 0.01 level. This indicates that as peoples perception of teamwork increases organisational commitment increases.

**Chapter Six**

## 6.0 Discussion of the Findings

Most critically, individual and mutual accountability and a sense of common commitment characterize effective groups. All members must take responsibility for the overall group effectiveness and for dealing with the problems that are inevitable." The best teams invest tremendous amount of time and effort exploring, shaping, and agreeing on a purpose that belongs to them both collectively and individually and then translate this purpose into specific performance goals"(Katzenbach and Smith).

## 6.1 Perceptions of Teamworking

At Bioproducts there seems to be a significant amount of work interdependence. Team members rely on each other for materials and other resources (refer to table 5.2.4.1). The goals of the individual come directly from the work goals of the team (refer to table 5.1.2.3). The teams have a clear notion of what the objectives are. There is a strong reliance on the teams to provide information, materials and to determine the goals. Group member's goals are linked and tasks require co-operation in order to achieve team goals Team members share resources in order to attain goals and their actions are closely co-ordinated. A sense of urgency and direction, purpose and goals exists within the teams.

Interdependence is one of the most crucial elements for teams to exist and to be effective. It is important that tasks the group undertakes are not over- or under-orchestrated, that, members become more involved in the outcomes, creating a sense of ownership. There is a broad sense of shared responsibility for the group outcomes and group process

For high performing teams there must be effective ways of making decisions and shared leadership. There is a high level of individual control (refer to table 5.1.1.1 and table 5.1.1.2) within the teams because of the greater focus on job enrichment. Team

members are granted more responsibility (refer to table 5.1.4.1& 5.1.4.2& 5.1.4.3), more autonomy and more control over the pace and scheduling of their work (refer to table 5.1.2.1). Team members have the ability to decide on work methods (refer to table 5.1.2.2), to check quality and to develop new solutions to problems.

Teams have a moderately high level of autonomy. Teams are given the opportunity to brainstorm. Most decisions made are what they call "C decisions." They are decisions made by consensus, by the people directly involved, with plenty of discussion. While teams are given the opportunity to decide the order in which things are done and how to get the job done the individuals input in these two factors are not ignored (refer to table 5.1.3.1). It seems that the individuals in the team have even greater control in the order and methods used. One would expect that the team would provide guidelines and this would be refined by the individuals performing the task. This ensures that the individual in the team is not bored and receives increased job satisfaction from individual input.

For effective teams there must be a balance of satisfying individual and group needs. A climate must be created that is cohesive yet does not stifle individuality The individuals role in the team is not sacrificed for the sake of team consensus. Team members are highly involved in making decisions (refer to table 5.1.4.2) and participating in decision making about setting goals and targets within Bioproducts (refer to table 5.1.4.1). Teams are consulted on decisions that affect the teams (refer to table 5.1.4.3) For highly successful teams it is imperative that team members are allowed to contribute to the team goals and decisions taken within the organisation. Accountability to peers and the organisation is linked to both job satisfaction and trust in supervisors and managers. Bioproducts recognises that in order for teams to be successful in the organisation they must be involved in the decision making of the organisation. Individuals in the team must feel free to contribute to the team to ensure personal job satisfaction. The teams realise that any resentment shown to a team member or non- willingness to listen to ideas generated by a team member can result in the withdrawal of the team member from any further participation, which is to the detriment of the team. Similarly the organisation realises that if teams are not involved in organisational decision making the teams would consider their contributions as not being meaningful and being ignored by the organisation resulting

in poor morale and eventually poor performance. The organisation understands that in order to achieve effective groups that individual and mutual accountability and a sense of common commitment characterize teams. All members must take responsibility for the overall group effectiveness and for dealing with problems that are inevitable. The teams need to invest tremendous amount of time and effort exploring, shaping, and agreeing on a purpose that belongs to them both collectively and individually and then translate this into specific performance goals. Overall there is a high level of accountability and autonomy given to teams and team members at Bioproducts. There are high levels of commitment among team members.

For optimum-performing teams there must be immediate and demanding performance oriented tasks and goals. There must be some variety in the tasks performed The tasks achieved are significant and the fact that they are significant is valuable in ensuring that members stay interested and motivated to complete the task The teams have separate tasks and complete whole jobs (refer to table 5.2.3.1) for example the production teams are each responsible for their own shift performance and whatever occurs during their shift cycle at work.

There is a high level of task variety (refer to table 5.2.1.1), the tasks are significant (refer to table 5.2.2.1) to outside members of the group and the tasks are significant to ensure that members stay interested and motivated to complete the task.

Employees have greater satisfaction when tasks are related to each other and require working together. The setting that is most amenable to work teams is one in which employees must work with each other to get their job done. Interdependent members of a team can accomplish certain aspects of their jobs on their own, but are dependent on other units in the organisation to get their work done. (Russel, p27). Sometimes the requirements of a task are to complex for a single individual to handle. In this case, the team is more than the sum of the parts- the team can do things that the individuals working singularly cannot. Organisations whose employees do not depend on each other at all to get their jobs are unsuitable for the use of teams. It takes additional effort to work in teams, so it is important to know that there is a benefit from a team effort.

At Bioproducts heterogeneity (refer to table 5.3.1.1) is rated highly and one can conclude that there is a good blend of experience and ability. Membership of group is based on skill and skill potential and not on personality.

The teams are filled with diplomats of various disciplines and also individuals with many years of experience in industry.

There are high levels of flexibility (refer to table 5.4.1.1) within the team. The teams because of their high level of cross training and goal focus make rapid adjustments to the changing needs of the organisations. This allows the teams to keep many balls hanging in the air without becoming completely snowed under. The teams create a climate and system where people can focus on the goal.

There is a relative size attached to groups, which makes them most effective. Groups should be large enough to get work done, but not too large for co-ordination or involvement of members to become impaired. The groups at Bioproducts are generally limited to six team members with the maximum in cross-functional teams being seven employees.

Employees that are in the teams seem to have a high preference for group work (refer to table 5.3.3.1). Their preference to be part of teams adds to the cohesiveness of the group. Increased job satisfaction is found when work preference is matched with the work being done. Research has found that people who prefer group work are more satisfied with group work.


Job- related training is sufficient to allow team members to complete their tasks (refer to table5.4.1.1). The organisation puts a great emphasis on cross –training. Team members are not allowed on to the plant without undergoing a formal training process. The formal training on a particular section can take up to six weeks under the tutelage of a Training Specialist. Thereafter the Management Team formally appraises the individual. The individual is then allowed to shadow a competent team member on the plant for a period of two weeks. The individual is then evaluated by the team leader and in consultation with management is then only deemed competent. This is essential to ensure that team members can perform the tasks required of them and does not place undue stress on the team. Teams are also taught soft skills like brainstorming and taught how to handle confronting differences; to confronting conflicts; and how to deal with minority opinions effectively Teams are taught

effective communication patterns i.e. how to communicate both ideas and feelings and good listening skills among members

In order for teams to succeed it is essential that teams be nurtured through the development stages to ensure that they reach their true potential. Organisations need to develop learning organisations to facilitate and grow the teams. In order to do this Bioproducts has ensured that the company culture and environment are there to support learning. The awareness of trying to create a learning organisation has enabled the organisation to shorten the learning curve in order to create a Biotechnology skills base that is anything but short of world class status. The organisation is now able to sell its technology as well as carry out its own research and development. It is able to take projects from the laboratory scale and scale it up to pilot and eventually up to production scale in the shortest period of time with great success. This has given the company a competitive edge, which can be fully utilised in the years ahead. According to Senge (1994) team learning transforms skills into capabilities and that they are collective vehicles for building shared understanding. The strength of any team is built upon the collective efforts of the individual members. One of the most essential skills is for teams to learn communication skills and the ability to carry on thoughtful dialogue. Studies have shown that talent is one that has ensured the longevity and growth in teams more than any other does. Teams fail most commonly when they are not supported by the infrastructure within the organisation. Teams do not work very efficiently when they have to constantly justify their existence, Bioproducts has managed to circumnavigate this pitfall by firmly entrenching the team philosophy and nurturing it through the development stages.

The strongest and most consistent factor that increases teamwork is managers encouraging teamwork. Managers at Bioproducts help employees work together as a team, resolve disagreements and support the team efforts to ensure that the group as a whole exhibit higher teamwork In the organisation there is sufficient managerial support this is evident in the high rating given to the question of management support (refer to table 5.4.2.1). This is essential to ensure that teams succeed. Management accepts that the teams are made up of humans, so they are bound to err and has created an environment in which it is permissible to err in. The teams learn from its mistakes and grow even more. Management uses the opportunity to coach individuals

on their actions that led to mistakes rather than taking disciplinary action. If teams don't feel comfortable making mistakes, that organisation has not created an environment to support teams and making the growth of teams possible.

The educational system in place seems to have a mediocre response when comparing to the other factors, the mean achieved was 2.9 (refer to table 5.6.1.1). The organisation encourages higher learning and supports employees financially to acquire higher qualifications through technikons and universities to improve their skills and knowledge levels. This also allows employees to take up the opportunities for promotion when they become available. The fact that a large majority of employees do work shift places a restriction on individual ability to attend classroom learning and this is being expressed in the survey. The organisation does allow some sort of flexibility to employees to swop shifts to accommodate individuals that are studying however this does not seem to have addressed the situation totally.

The information system (refer to table 5.6.2.1) in place for the teams purposes is rated highly. It is essential that in this modern era were knowledge is a finger tip away that organisations have information systems made available to teams to ensure their effectiveness. The competitiveness among organisations makes it essential. The organisation has put in a system that supports and reinforces organisational excellence. The plant is fully automated. Real time historisation of process variables takes place. This allows the teams to access any information related to the plant to help in troubleshooting. The organisation relies heavily on information technology. All employees have access to computers and communicate via e-mail. All information is readily accessible to all employees. Significant evidence exists that the teams are well supported with the essentials to ensure effectiveness

## 6.2 Degree of Change as a result of Teamworking

Overall the teams have indicate that there is significant benefits attached to teams. The AECI Bioproducts plant revolves around teams and teamwork. Everyone belongs to a team, and every team meets every day. The employees, and even management, rely on the open lines of communication. They keep each other in check and feel comfortable offering opinions or suggestions

The amount of communication (refer to table 5.7.1), co-operation (refer to table 5.7.2) and interest in work has increased (refer to table 5.7.3). Teams members are more reliant on each other to accomplish their goals and thus ensure that the teams maintain their effectiveness. Co-operation has increased markedly because the teams are driven to achieve goals and hence team members are tied into the final outcome. The teams have more authority to plan their work, deciding how it should be done and learning new skills that help them grow hence making the tasks interesting. Team member's jobs are increased to include more variety, often requiring higher levels of skill and knowledge. Teams have the necessary skills to be objective in order to review its performance objectively

## 6.3 Work Demands

Individual role clarity seems to be well defined within the organisation (refer to table 5.8.1.1 & 5.8.1.2). Team members are well aware of their duties and responsibilities as well as their goals and objectives. The clarity of roles of individuals in teams is essential to ensure that there is no duplication of roles and people are maximising their ability for the benefit of the teams and indeed the organisation.

The teams within Bioproducts are well aware of their roles within the organisation (refer to table 5.8.2.1 and 5.8.2.2). Employees know what is expected of them, which aspects of their jobs are most important and how their performances will be evaluated. If employees are not clear about their roles and how they relate to each other in the group, effective teamwork may be difficult to achieve. The organisation has been successful in defining the expectations and the requirements of the teams.

There seems to be some sort of role conflict being expressed by employees (refer to table 5.8.3.1 and 5.8.3.2). This seems to contradict the earlier response, which indicate that there was good clarity of roles of individuals and teams. A large amount of employees believe that things should be done in a different way. The allowance of freedom of thought and generating of different ideas create a dilemma within employees. Individual employees might indeed believe that their way of tackling an issue may be better but due to group consensus might be forced to accept a decision that they might still perceive as not being the best way and this could result in conflict within the individual. The organisation needs to take notice of this. The organisation

needs to investigate and some sort of interactive counselling should be undertaken to engage individuals on this issue in order to reach an understanding. This is critical to ensure that the individuals do not begin to feel isolated because this could lead to them becoming demotivated.

There is enough opportunity for team members to use their full range of skills (refer to table 5.8.4.1) and there is enough challenging problems (refer to table 5.8.5.1) that require resolution to ensure that team members feel challenged by their jobs and stay focused. The technology used is in its infancy and there are plenty of opportunities to use and acquire new skills. Everyday learning takes place and there are new problems to confront. The jobs have been put together to form whole jobs and there are continuing opportunities to optimise the plant.

There is a moderate level of workload as expressed by team members. Team members find that the work piles up faster than the time that they have to complete it (refer to table 5.8.6.1) and they are forced to work harder to complete their tasks (refer to table 5.8.6.2). The constant challenges faced by the organisation to shorten the learning curve and improve the technology have placed a greater burden on the teams. The fall in the world price of Lysine has not helped matters and the organisation is saddled with the problem of reducing costs to remain competitive The organisation needs to be wary of the high workload and its relationship to job satisfaction. While a certain amount of work pressure is required to prevent boredom and to keep the team members sufficiently challenged one must still guard against it. High workload can lead to decreased job satisfaction and eventually poor productivity and high turnover of personnel.

Communication between team is rated moderately and it is an area in general in which teams can improve (refer to table 5.4.3.1). Although teams may be highly successful as individual units, success can only occur if there is synergy within the organisation. It is therefore important that the communication between teams is par excellence to ensure that the good work done by teams is not undone by poor communication between teams. Overall in terms of context the positive response achieved indicate that the organisation is well suited to ensure highly successful teams.

There is a strong belief within the teams that they can be effective (refer to table 5.5.1.1). . This is an essential ingredient to ensure highly successful teams. If teams believe in their effectiveness then they are more likely to channel their energies to more productive outcomes.

There is moderately high amount of workload sharing among the team members. Workload sharing is critical to ensure that individual members do not feel overburdened by some of the tasks. There is however a certain amount of individual effort in teams this could be a result of the tasks not necessarily being attuned to group work.

## 6.4 Organisational Commitment

The understanding of the long-term strategy of the organisation seems to be moderately understood  (refer to table 5.9.1.3). However one would have expected a much higher level of understanding. One of the reasons could be that the organisation does not share an organisational fit with the Mother Company, AECI, and is therefore up for sale. AECI is using the organisation as a cash cow without further investment. The organisation is currently in need of cash to fulfil its long-term value. This seems to be hindering the leadership in trying to pursue a long-term strategy and is causing a lot of uncertainty in the organisation.  Management however needs to act and keep people more informed and assured to prevent people from becoming dissatisfied and leaving the organisation. Despite the lack of understanding of the long term strategy there is strong confidence in the management's ability.

Individuals in the organisation feel that they possess everything they need to do their job (refer to table 5.9.1.5). The organisation has an excellent infrastructure to support the excellent performance of the employees.
Communication from senior management is rated, as moderately low indicating that communication is not happening frequent enough. In times of uncertainty it is essential that management keep all staff informed and not allow morale to deteriorate. This is an area that Bioproducts can significantly improve to maintain the positive atmosphere already created.

In order for organisations to be successful it is essential that a proper training programme be put in place to ensure the development of staff. This is an area that Bioproducts needs to address urgently based on the extremely low rating achieved (refer to table 5.9.1.8) Although the organisation recognises itself as a learning organisation proper structures to improve training have not been imbedded. This seems to be of particular concern to the employees. The organisation is particularly weak in identifying the training needs of its employees. Strategic leadership is required in this area otherwise the organisation future will be undermined.

Employees are committed and they personally identify with the organisation. Employee's commitment indicates that they agree with the ethics, goals and morals of their organisation. They have a personal involvement in the organisation and are proud (refer to table 5.9.1.2) of the reputation of the company. This allows Bioproducts to retain capable people who will stay with the organisation.

## 6.5 Job satisfaction

The employees use their full range of skills (refer to table5.10.1.2). Underutilisation of skills can lead to poor job satisfaction. Bioproducts needs to be aware that the skill base of the employees is continually improving. Biotechnology is a growing industry and individuals within the organisation will become highly marketable. The organisation therefore needs to create opportunities to better utilise these learnt skills and this may require some planning for the future otherwise people may be forced to leave the organisation prematurely.

Bioproducts recognises job performances to a moderate extent (refer to table 5.10.2.1) and uses positive feedback, recognition and rewards. Employees tend to be happier, and therefore more productive, because they are involved in decision-making. Bioproducts believes in rewarding employees and in the words of Jack Welch "in the soul as well as in the wallet." The company has initiated ongoing recognition and awards for its employees. The "credit" employees receive for their ideas are present in one or more of the three forms: recognition among peers, recognition awards, and 7% of profits before tax is paid to employees as bonuses. The bonus paid to employees related to individual performance and employees can gain as much as 3 to 6 months of their salary as a bonus. The employees also share in the losses which is

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accumulated and offset by profits made in the following years. This prevents employees from becoming complacent and drives motivation to ensure that opportunities within their control are maximised thus ensuring the organisation makes a profit. Management is proactive in appreciating good performances by individuals. It is important for people to feel recognised for their job performance. Employees do not want recognition they want management to understand the contribution they make and to thank them in a meaningful way. Recognition causes people to become more satisfied with their job and eventually results in positive work performances

Theory informs us that if people have job satisfaction they are more willing to come to work. Bioproducts has been overwhelmingly successful in satisfying the needs of its staff to ensure that employees enjoy coming to work (refer to table 5.10.3.1).

There is a moderate level of team members missing colleagues when they do not come to work (refer to table 5.10.4.1). The moderate level of response could be a result of teams. The greater flexibility and multiskilling means that people can adequately fill in when people are absent therefore people are not necessarily missed.

Employees are happy with their jobs (refer to table 5.10.5.1). Employees enjoy their jobs and it is evident that employees are more effective in handling the daily challenges and the rapid changes that occur on a daily basis. Research tells us that if employees are satisfied with their jobs, it will provide them with a positive buffer to deal with the other daily stresses that they will encounter. Employees that are satisfied are more likely to work harder, complain less, show up on time and treat company and other employees with respect. This indirectly increases the bottom line and at the same time staff morale and productivity

Employees have enough authority to do their jobs easily and efficiently (refer to table 5.10.6.1). This not only makes the organisation more efficient, it is one way the organisation commits to the employee by saying, " I trust you."

Employees at Bioproducts are involved with their jobs and are proud (refer to table 5.10.7.1) of what they do and have a personal sense of ownership and responsibility for the quality of their work. Involvement is identification with ones job for example a

person may be extremely proud of her work but not committed to the organisation. Involvement includes a sense of personal accountability for ones work

The uncertainty around ownership could be causing people to feel that opportunity for advancing is limited (refer to table 5.10.8.1). Teams have resulted in more flat structures thereby limiting the opportunity for advancement. Levels of management have disappeared with the advent of teams thereby limiting the number of promotion opportunities available. Team members need to settle for more increase in job scope than advancement within the organisation. The organisation needs to take cognisance of this factor because it could cause a problem in the future if people do not see opportunities for advancement. Employees will then be forced to look outside the organisation for gratification.

## 6.6 Stress
### 6.6.1 Job Related Strain
Tenseness experienced by employees is of major concern (refer to table 5.11.1.1) One may assume that the insecurity around ownership might be causing some of the tension experienced however a correlation analysis reveals no significant relationship between tension and insecurity around ownership. The reasons for the high levels of tenseness among employees need to be investigated.

Frustration among employees about their jobs could be as a result of lack of direction within the organisation (refer to table 5.11.1.2). This is an area of concern because prolonged frustration at work could lead to poor job satisfaction and eventually lead to employees leaving the organisation.

### 6.6.2 General Strain
The employees are not suffering with any undue stress (refer to table 5.11.2.1). The ability to sort out problems at work indicates a positive work climate were people are allowed to discuss problems and reach some sort of resolution that satisfies the employee.

The concern about ownership of the company seems to have a moderate level of influence on motivation (refer table 5.11.2.3) however the concern over insecurity of ownership has not affected job satisfaction (refer to table 5.11.2.4). This is an area of

concern. Bioproducts seems to have a staff complement that seems to be satisfied however any prolonged search for a new owner could result in employees becoming disillusioned and seeking other greener pastures.

Employees are attracted to and will stay with organisations where they feel they will have a job if they do good work. Employees with job security are also more willing to be innovative and take risks for the organisation. A lack of job security decreases satisfaction, commitment and involvement. Bioproducts employees believe that their jobs are to a moderate extent secure (refer to table 5.11.2.5).

## 6.7 Perks

People in general always tend to believe that they are not paid enough and this is a question around which there are many debates. The response at Bioproducts typifies the general response (refer to table 5.12.1) that no matter the organisation people will always tend to believe that they are not paid enough. Bioproducts management maintains that salaries are market related and in some cases above market value.

Employees are extremely happy with the basic working conditions (refer to table 5.12.2). It is critical that for an organisation to be successful basic working conditions are satisfactory. Employees who are satisfied tend to stay longer with the organisation and are increasingly committed to the long-term success of the organisation.

## 6.8 Relationship between Teamwork and Work Demands

Teamwork and work demands are significantly linked. Working in teams causes a significant increase in work demands (refer to table 5.13.1). In hierarchical structures employees were responsible to a Foreman or Manager who determined the workload and the methods needed to be employed to carry out the work. He also determined the responsibilities of the individual as well as the teams. The Manager or Foreman determined the goals and objectives and was accountable for achieving them. This responsibility now firmly rests with the team. Team members are required to be clear about their duties and responsibilities as well as the responsibilities of the team. They further need to be aware of the goals and objectives of the teams and are accountable for them. The team members need to strategise and determine the best method to employ in completing the task. The team members are now responsible to the team

and hence all the team members. The team member now has to satisfy the inquisition of every team member in his team. Requests from individuals may be incompatible and outside the scope of some of the team members. Team members now need to make decisions based on numerous inputs that may be foreign to them. Team meetings are required and this engages the team members more frequently. Teams could be involved in investigations to be carried out which were previously out of their scope. This significantly increases the work demands of the individuals in the team

Employees with an internal locus of control, who believe that what they do determines what happens to them in life, are highly successful in groups. These people appreciate the autonomy that they feel when working in a work team because they like making their own decisions. The increased focus on self determined goals might lead to greater job satisfaction for internally motivated employees.
One must however be aware of employees with an external locus of control. These employees may have trouble working in teams. These types of people, who believe they have no control over their destiny, usually perform better in autocratic settings. They prefer to be controlled by management rather than make their own decisions because they do not believe that they can always make good decisions. These new responsibilities place even greater demands on these individuals.

Team members need to be multiskilled and carry out a variety of tasks. New problems need to be grappled with for the first time. The workload of the individuals increases because of the wider area of responsibility. Team members are working at a faster rate to complete their tasks in order to assist other team members. This significantly increases the work demands.
One can conclude that teamwork places an increase in work demands on employees involved in teams.

## 6.9 Correlation between Teamwork and Job Satisfaction
The correlation analysis between teamwork and job satisfaction reveals as employees perception of teamwork increases job satisfaction increases (refer to table 5.13.2) Teamwork seems to have induced a more positive attitude among employees towards work and has raised the standards of work performance and indeed the business as a

whole. Employees are encouraged to interact within groups and it allows the employees to use their discretion to handle problems and concerns in a holistic way. The jobs of employees are expanded to set work goals and organise around these goals. Supervision and management structures have been reduced and existing management now plays the role of coach. The employees are now given responsibilities previously handled by management such as production scheduling, training, suppliers and the likes. Employees are allowed within the group setting to decide what the goals are and how to organise towards goals. Employees are empowered to make decisions and to improve service.

Research regarding high employee involvement systems self managed team approaches to the organisation of authority and work, points to the greater success and efficiency of self managed teams in manufacturing environments. It seems that the least amount of control exerted over employees the better, Self management is not centered on the individual and focuses on what a group does together, it is the only approach of the three that takes advantage of the social nature of human beings. Further it is the only organisational approach that requires management to leave the driving to others. A tough thing to do for most managers. It may be that managers that manage the least will be the most successful by knowing when a work group needs redirection and how to give redirection while maintaining group control. They will need to stay away from the work groups they supervise except to provide resources to the group such as new equipment, access to training and different technology

Satisfaction to employees comes from knowing that what they did actually, accomplished what they set out to do. The management of the organisation encourages so constant feedback of performance –compliance, and in team building, the sharing of evaluation and records. Succession planning has taken place and individuals are aware of the opportunities that exist within the organisation. This is essential to ensure that some goal –oriented individuals who cherish the position more than the monetary value that the position offers are kept motivated. Individual goals are addressed so that the individual does not feel unappreciated. Individuals commit to things more when the achievements can be measured and appreciated. The performance measurement system in place is set up to ensure achievements are recognised so that the individual perceives his increased value to the organisation. Another commitment motivator is that the individual believes that what he or she

commits to be worthy of his or her commitment. The company has a very open door policy, which encourages employees to speak-out and criticize the organisation. This ensures that the organisation does not violate its 'moral contract' with its workers thus ensuring the credibility of the organisation. This allows employees to air their grievances freely at the highest level without following the more orthodox method of following it up with line management. This creates satisfaction and commitment among the employees and reduces turnover. The organisation pays a salary that is market related and in some cases slightly above. This ensures that the individual is able to financially support himself thus ensuring that the individual has the ability to stay. Team participation is included in determining acts of members as well as management. This proactive approach has enabled the organisation to prevent members from joining Unions, which to a large extent strangles other organisations flexibility. Management is careful not to hinder the individuals personal progress so much as to create an environment that the worker feels hopeless due to restraints put upon them. Management constantly appraising employees achieves this and ensuring that whatever constraints exist is studied and resolved between management and work groups.

This explains the high correlation between teamwork and job satisfaction.


## 6.10 Correlation between Teamwork and Stress

Employees perceive that as teamwork increases stress increases (refer to table 5.13.3) This reveals that team members experience a certain amount of job related and general strain that is linked to teamwork. This strain could be a result of the greater need to perform tasks that previously were accomplished by management. Employees now need a diverse range of skills to accomplish their tasks. The organisation is complex and requires a high level of skill. The organisation commissioned the plant with individuals that had a higher level of qualification and experience. They found that once the organisation had resolved all the technical hitches that these people soon became redundant to the organisations needs. The organisation was cash strapped in its infancy due to the collapse of the price of Lysine in the World market. The excellent experience being gained by individuals and the good working conditions and the above market related salaries made it difficult for individuals to leave the organisation. The organisation could not absorb these individuals into higher positions because there was no expansion. The organisation did suffer a slump because

individuals were under utilised. In the years to come the organisation adopted a different strategy. Rather then employing highly skilled employees with high levels of education they chose to employ diplomates with 1-2 years experience and experienced individuals that were not necessarily career - orientated. This allowed the organisation to have a blend of individuals. This has worked well for the organisation however it has created another problem. While individuals are keen and willing and have been properly trained, the individuals still suffer from a lack of experience. This has increased the amount of perceived strain being suffered by individuals.

The organisation is also not yet in a position that it generates a large amount of cash and in some areas are under resourced. This puts an even greater burden on the teams and some individuals are expressing this to an extent. The organisation needs to be aware of this factor because in the long run individuals may start to express dissatisfaction.

Employees are now responsible to the team. There is significant pressure that is applied by peers to comply with group norms and this could lead to increased strain being experienced by employees.

## 6.11 Relationship between Teamwork and Organisational Commitment

Individuals that work in teams and rate teams highly are more likely to be committed to the organisation (refer to table 5.13.4). Similarly, as discussed previously these employees have high job satisfaction. The increased in responsibility, autonomy and accountability increase commitment of the employees. Employees feel empowered and involved in the organisation and readily commit to the organisation. The goals of the organisation now become the goals of the individuals in the teams and they are more committed in ensuring that goals are achieved

Team members become proud of the organisation and begin to manage upward pushing management to rectify areas of concern and voicing their opinions openly. Management's acknowledgement and recognition of the teams further increases commitment and pushes the organisation to higher achievements.

# Chapter Seven

## Conclusion

The organisation seems to have progressed far in terms of team development. Team are highly effective and performing well within the organisation. Team have high levels of autonomy, responsibility and accountability. The teams are interdependent. There is a high degree of teamworking within the teams. Teams are co-operating and communicating well. There is lots of interest among the teams in the work they do. There is significant focus on job enrichment by management. Individuals role in the teams are well established and looked after. The organisation seems to be supporting the teams well to ensure success

The employees are committed to the organisation. There are high levels of job satisfaction among employees. The organisation however needs to look at the job – related strain as an area of concern. The insecurity of ownership needs to be addressed. This is a point, which could have a dramatic impact on the organisation if the ownership issue is a long drawn out process. The organisation needs a long-term strategy to focus the teams.

Teamwork and work demands are significantly linked. One would expect that increase in work demands on individuals to increase as a result of teams. This is significant in explaining why teams do work. Team structure allows the teams to assimilate more information and carry out more work then individuals put together. Teams also demand more authority, autonomy, responsibility and accountability and this widens the scope of a team's function leading to increased workload. Organisations however need to monitor the increase in workload and also the pay for contribution. If teams feel that they have increased work demands and are not adequately compensated then this could lead to problems for the organisation.

Teamwork and job satisfaction is significantly linked. This proves that companies that are using teamwork have satisfied employees. Employees that are satisfied have a great impact on productivity and the bottom line.

Teamwork has an effect on stress. While teams are able to take on more one needs to take into account that teams are made up of individuals. While there are team members that are willing and capable of taking on more there may be team members that might not have the capacity to take on an increased workload. This could result in significant strain being experienced by individual within the teams. The organisation needs to monitor the strain experienced by individuals because this could eventually result in employees becoming demotivated and result in the teams becoming dysfunctional.

Weaknesses identified in the organisation are poor communication between management and employees as well as training being inadequate. The organisation needs to identify training as a strategic issue and try to improve communication these two factors if not addressed could seriously undermine the organisations future

Teams seem to be the answer to the modern era were individuals are highly skilled and modern methods of manufacture require a highly skilled workforce. Organisations are much leaner and opportunities for advancement are fewer. Teams allow organisations to retain the skills of employees by expanding the job scope and rewarding employees for their efforts.

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University of Natal
MBA Dissertation Conducted by Kevin Govender
A survey is being conducted to determine the effectiveness of teams and to determine whether there is any relationship to job satisfaction.

It would be highly appreciated if you would take the opportunity too fill out the questionnaire. All information provided is strictly confidential. Names of respondents are not required. There are no correct answers and respondents are asked to fill in the information as truthfully as possible.

Biographical Profile

1. Age of Respondent

2. Number of years?
   Work Experience

3. Number of years?
   Work Experience at Bioproducts

4. Highest
   Qualification?

5. How many years' experience have you had working in teams

6. Position in Company

7. Presently do you work in a team (Yes/No)?
   If no go to question 17.0

The following items focus on your evaluation of teamwork in the company. Please indicate to what extent each item reflects your feelings about teamwork

1.1. To what extent can you get your job done without information and material from other members of the team?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|

1.2. To what extent does your goals come directly from the work goals of your team?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|

2.0. Since the introduction of teamworking to what extent has the following changed:

2.1 Amount of communication increased

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|

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2.2 Extent of cooperation among team members increased

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

2.3 How interesting the work is

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

3.1 To what extent do you decide on the order in which you do things?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

3.2 To what extent can you decide how to go about getting your job done?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

3.3 To what extent does your team decide on the order in which work is done?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

4.1 To what extent can your team decide how to go about getting your work done?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

5.1 To what extent can you influence what goals and targets are set for your team?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

5.2 To what extent are your team members themselves involved in making decisions about setting goals and targets?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

5.3 To what extent are people in your team asked for their views when decisions are made about the job?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

6.1 To what extent does the team participate in decision making?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

6.2 To what extent are there task variety in your job and too what extent does it allow different skills to be used?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

6.3 To what extent is the task significant to members outside the group?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

6.4 To what degree does a group complete a whole and separate task?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

7.1 Too what extent is your team heterogeneous in both experience and abilities?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

7.2 To what extent is there flexibility in your job (does your job allow you to fill in when a member is absent).

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

7.3 To what extent do you prefer group work?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

8.1 To what extent does team members receive training to assist in performing their tasks?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

8.2 To what extent does the teams receive managerial support.

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

8.3 To what extent is their proper communications between teams and other teams within Bioproducts?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

9.1 To what extent does the team believe it can be effective?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

9.2 To what extent is their social interaction within the group?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

9.3 To what extent is their sharing of the workload.

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

9.4 To what extent is their an educational system to expand team members knowledge.

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

9.5 To what extent is their an information system that provides the team with the data it needs to set goals.

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

10.0 To what extent are you clear about the following aspects of your work?
10.1 Your duties and responsibilities

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

10.2 The goals and objectives of your job

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

11.0 To what extent are you clear about the following:
11.1 The duties and responsibilities of your team

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

11.2 The goals and objectives of your team

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

12.1 To what extent do you believe that things should be done in a different way?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

12.2 To what extent do you receive incompatible requests from different people?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

13.1 To what extent do you get the opportunity to make full use of your skills?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

14.1 To what extent do you have to solve problems that have no obvious correct answers?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

14.2 To what extent do you find that work piles up faster than you can complete it?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

15.1 To what extent do you find yourself working faster than you would like in order to complete your work?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

16.1 To what extent are you proud to tell people whom you work for?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

16.2 To what extent do you feel yourself to be part of Bioproducts?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

17.0 To what extent are you satisfied with the following?

17.1 The way your firm is managed

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

17.2 The opportunity to use your ability

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

17.3 To what extent do you feel recognized for your job performance?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

17.4 To what extent do you enjoy coming to work?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

17.5 To what extent do you feel missed when you are absent?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

17.6 To what extent are you happy with your job?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

18.1 During the past month, to what extent has your job made you feel tense?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

18.2 During the past month, to what extent has your job made you feel frustrated?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

19.1 To what extent have you recently lost sleep over worry at work?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|

19.2 To what extent have you been able to face up to problems at work?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|

20 To what extent do you understand the long term strategy of AECI Bioproducts?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|

21 To what extent do you have confidence in the leadership of AECI Bioproducts?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|

23 To what extent has insecurity surrounding around ownership of the company affected your motivation?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|

24. To what extent has insecurity around the ownership of the company affected your job satisfaction?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|

25 To what extent are you given authority to make decisions you need to make?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|

26 To what extent do you like the type of work you do?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|

27 To what extent do you believe that your job is secure?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|

28 To what extent do you believe AECI Bioproducts offers you opportunity for advancement?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|

29 To what extent do you believe that you have everything you need to do your job correctly?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|

30 To what extent do you believe communications from Senior Management at Bioproducts is frequent enough?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|

31 To what extent do you feel you can trust what Bioproducts senior management is telling you?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|

32 To what extent are you satisfied with the company's training programme?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|

33 To what extent is your salary fair for the responsibilities you carryout?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

34 To what extent do you believe that the basic working conditions (leave, overtime etc) are fair?

| To no extent | To a small extent | To some extent | To a significant extent | To a great extent |
|---|---|---|---|---|
| | | | | |

THANK YOU FOR COMPLETING THE QUESTIONNAIRE YOUR TIME AND EFFORT ARE MUCH APPRECIATED

**Reliability Analysis**

**Perceptions of Teamwork**: refers to question 1.1, 1.2, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 4.1, 5.1, 5.2, 5.3, 6.1, 6.2, 6.3, 6.4, 7.1, 7.2,7.3,8.1,8.2,8.3,9.1,9.2, 9.3,10.1,10.2,11.1,11.2,12.1,12.2,13.1,14.1 in questionaire

****** Method 2 (covariance matrix) will be used for this analysis ******

          R E L I A B I L I T Y   A N A L Y S I S   -   S C A L E   (A L P H A)

|  |  | Mean | Std Dev | Cases |
|---|---|---|---|---|
| 1. | INFOMAT | 2.6727 | 1.1231 | 55.0 |
| 2. | GFROMWT | 3.4000 | 1.0111 | 55.0 |
| 3. | COMMUNIC | 3.5455 | .9392 | 55.0 |
| 4. | COOPERAT | 3.6364 | .8895 | 55.0 |
| 5. | INTWORK | 3.4182 | .8963 | 55.0 |
| 6. | YORDER | 3.9818 | .8496 | 55.0 |
| 7. | YJOBDONE | 3.8545 | .8907 | 55.0 |
| 8. | TORDER | 3.0545 | .9313 | 55.0 |
| 9. | TJOBDONE | 3.1818 | 1.0017 | 55.0 |
| 10. | INFGOTAR | 3.4545 | .9966 | 55.0 |
| 11. | TINVDECI | 3.2364 | .9019 | 55.0 |
| 12. | TVIEWS | 3.4364 | 1.1347 | 55.0 |
| 13. | TPARTDEC | 3.3091 | .9789 | 55.0 |
| 14. | TASKVAR | 3.4000 | .9349 | 55.0 |
| 15. | TASKSIGN | 3.5455 | .9966 | 55.0 |
| 16. | WHOLSEPT | 3.4182 | .9167 | 55.0 |
| 17. | FLEXIBIL | 3.4909 | 1.0341 | 55.0 |
| 18. | HETEROG | 3.5818 | 1.0308 | 55.0 |
| 19. | PREFGW | 3.6182 | .9328 | 55.0 |
| 20. | COMOTHT | 3.0545 | .8259 | 55.0 |
| 21. | TBELEFFV | 3.8182 | .7476 | 55.0 |
| 22. | SOCAC | 3.1273 | 1.0551 | 55.0 |
| 23. | SHARLO | 3.2364 | .9019 | 55.0 |
| 24. | YDUTRESP | 4.1636 | .6876 | 55.0 |
| 25. | YGOALOBJ | 4.1091 | .7619 | 55.0 |
| 26. | TDUTRESP | 3.9455 | .7798 | 55.0 |
| 27. | TGOALOBJ | 3.8909 | .8750 | 55.0 |
| 28. | YDIFWAY | 3.3273 | 1.0896 | 55.0 |
| 29. | INCOMREQ | 2.8364 | .9577 | 55.0 |
| 30. | USESKILL | 3.3091 | .9403 | 55.0 |
| 31. | NOANSWER | 3.2182 | 1.1335 | 55.0 |

          N of Cases =        55.0

| Inter-item Correlations Variance | Mean | Minimum | Maximum | Range | Max/Min |
|---|---|---|---|---|---|
| .0350 | .1487 | -.3442 | .6935 | 1.0378 | -2.0146 |

Reliability Coefficients    31 items

Alpha =   .8378        Standardized item alpha =   .8441

**Organisational Commitment** : refers to question
8.1,8.2,9.4,9.5,16.1,16.2,17.1,17.3,21.0,25.0,30.0,31.0,32.0,29.0 on
questionaire
 ***** Method 2 (covariance matrix) will be used for this analysis
******

—


   R E L I A B I L I T Y   A N A L Y S I S   -   S C A L E   (A L P H A)

|  |  | Mean | Std Dev | Cases |
|---|---|---|---|---|
| 1. | TRAINING | 3.3571 | .9987 | 56.0 |
| 2. | MANSUP | 3.5714 | .8281 | 56.0 |
| 3. | EDUCSYS | 2.8571 | 1.1189 | 56.0 |
| 4. | INFOSYS | 3.5000 | 1.0269 | 56.0 |
| 5. | PROUD | 3.6964 | .9708 | 56.0 |
| 6. | PARTBIO | 3.4464 | 1.0431 | 56.0 |
| 7. | SABIOMAN | 3.0000 | 1.0617 | 56.0 |
| 8. | RECZPERF | 2.9643 | .8731 | 56.0 |
| 9. | STRATEGY | 2.9107 | .9959 | 56.0 |
| 10. | CONFILED | 3.2143 | .8467 | 56.0 |
| 11. | AUTHDEC | 3.0357 | .9902 | 56.0 |
| 12. | COMSMFRQ | 2.6429 | 1.1025 | 56.0 |
| 13. | TRUSTSM | 3.1607 | .9682 | 56.0 |
| 14. | BOTRAINP | 2.3036 | .9129 | 56.0 |
| 15. | JOBCOREC | 3.3393 | .8587 | 56.0 |

        N of Cases =      56.0

| Inter-item Correlations Variance | Mean | Minimum | Maximum | Range | Max/Min |
|---|---|---|---|---|---|
| .0276 | .3242 | -.0867 | .7300 | .8167 | -8.4224 |


Reliability Coefficients    15 items

Alpha =   .8778        Standardized item alpha =   .8780

**Job Satisfaction** : refers to questions
17.4,17.5,17.6,18.2,18.3,19.2,19.1,17.2,23.0,24.0,26.0,27.0,28.0,33.0
,34.0,14.2,15.1 on questionaire


 \*\*\*\*\*\* Method 2 (covariance matrix) will be used for this analysis
\*\*\*\*\*\*
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  R E L I A B I L I T Y   A N A L Y S I S   -   S C A L E   (A L P H
A)


|     |          | Mean   | Std Dev | Cases |
|-----|----------|--------|---------|-------|
| 1.  | ENJCOMW  | 3.4107 | .9492   | 56.0  |
| 2.  | MISABSEN | 2.9464 | 1.0517  | 56.0  |
| 3.  | HAPPYJOB | 3.4464 | .8294   | 56.0  |
| 4.  | FRUSTRAT | 3.0000 | 1.1282  | 56.0  |
| 5.  | LOSTSLEP | 2.3214 | 1.2948  | 56.0  |
| 6.  | FACEUP   | 3.6786 | .8761   | 56.0  |
| 7.  | USEABYLT | 3.0357 | 1.0949  | 56.0  |
| 8.  | INSECMOT | 2.9464 | 1.1973  | 56.0  |
| 9.  | SECJOBSA | 2.4643 | 1.2055  | 56.0  |
| 10. | LIKTYPWO | 3.8214 | .8761   | 56.0  |
| 11. | JOBSECUR | 2.9464 | 1.0343  | 56.0  |
| 12. | OPORTADV | 2.6250 | 1.1047  | 56.0  |
| 13. | SALARY   | 2.3929 | .9473   | 56.0  |
| 14. | WORKCOND | 3.3750 | 1.0542  | 56.0  |
| 15. | PILESUP  | 3.0893 | 1.1164  | 56.0  |
| 16. | WORKFAST | 3.1071 | .9850   | 56.0  |

        N of Cases =       56.0

Inter-item
Correlations
Variance

| Mean  | Minimum | Maximum | Range | Max/Min |
|-------|---------|---------|-------|---------|
| .1444 | -.2620  | .6866   | .9486 | -2.6210 |

.0452
—


  R E L I A B I L I T Y   A N A L Y S I S   -   S C A L E   (A L P H
A)


Reliability Coefficients    16 items

Alpha =   .7239          Standardized item alpha =   .7297