An Investigation into the Adoption of Multiskilling by the South African Manufacturing Industry: A Case Study of Hulett Aluminium

By

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Submitted in Partial Fulfilment of the Requirements for a Master of Business Administration at the School of Business, University of KwaZulu-Natal

November 2006

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EXECUTIVE SUMMARY

There are a number of challenges that are facing the South African manufacturing industry today. Companies within this sector are trying all they can to ensure the optimal utilisation of physical and human resources and the maximisation of profit, all this at a very minimal possible cost. Each company within the industry is struggling for a competitive edge and bigger market share compared to other companies manufacturing the same product. Haas *et al.* (2005:1) suggest that the manufacturing companies need more flexible labour strategies, like multiskilling, as a way of dealing with these challenges.

Hulett Aluminium (Pty) Ltd, South Africa's largest aluminium producer and based in Pietermaritzburg, was used by the researcher as a case study. The company was founded in 1946 as a subsidiary of the international Alcan Aluminium Group. It is South Africa's largest manufacturer of semi-fabricated and finished aluminium products. The company introduced multiskilling in 2000, the main objective being to equip the employees with a variety of skills for the benefit of both the company and the employees themselves.

This research study was undertaken to establish the extent to which Hulett Aluminium (Pty) Ltd has taken advantage of the theoretical benefits associated with multiskilling. To achieve this the following issues were investigated: preparation of a suitable environment for the application of multiskilling, effects of new, advanced technology on multiskilling, effects of absenteeism due to workshops, training programmes and personal matters, productivity levels, labour turnover, labour costs, trend towards self-managed groups, job satisfaction, employee motivation and industrial conflicts.

This study first discussed the theoretical perspectives on multiskilling. This is followed by the description of Hulett Aluminium (Pty) Ltd, with specific description of the company's profile, the organisational structure, the aluminium supply chain and the company's core business. The description of the company is followed by the methodology used for the collection of data as well as the outline of the interpretation procedures followed. Research findings and discussion are also given.

The key findings of this study are that both managers and shop floor employees at Hulett Aluminium agree that multiskilling contributes to increased organisational labour productivity, reduced organisational overall costs, and reduced industrial conflicts. Other areas of agreement include the fact that multiskilled employees need appropriate resources for the application of their skills; training is an essential tool for multiskilling and that rewards for a multiskilled workforce are a motivating factor for in the workplace.

The final conclusion drawn is that much as Hulett Aluminium (Pty) Ltd has embraced multiskilling, there is still a lot the company needs to do or improve on, so that it could enjoy the benefits of the programme.

Based on the findings of this study, some of the recommendations made for Hulett Aluminium are:

- A detailed planning process for proper implementation of multiskilling
- All the relevant stakeholders within the company should be part and parcel of the implementation of the programme
- Benchmarking with other manufacturing companies which have implemented multiskilling
- Training of new recruits so that they could be at equal par with the old employees and also contribute positively to increased organisational productivity.

DECLARATION

I, **Vangeli Wiseman Gamede**, hereby declare that the contents of this dissertation are my own original work, and that all sources utilised, have been accurately reported and acknowledged. This dissertation has not, nor is submitted for any degree/examination at any university.

Vangeli Wiseman Gamede

ACKNOWLEDGEMENTS

My successful completion of the MBA programme in general, and this research study in particular, could not have been realised, were it not for the extraordinary assistance and support from a number of people.

My heartfelt and sincere thanks go to my daughter, **Nolukholo**, who had to bear with me when I had to divide valuable time and money between her and the programme. To her I dedicate this piece of work.

Special thanks go to my supervisor, **Dr. Clive Hunter**, for his constructive comments, insight, wisdom, continual support, motivation and inspirational guidance. It has been a privilege and a great pleasure to be under his supervision.

I also wish to thank **Professor Debbie Vigar-Ellis** for her invaluable comments, encouragement and contribution.

I also wish to express my appreciation to the Hulett Aluminium staff members in the persons of **Mr. K. Mshengu** – Director of Human Resource, **Mr. L. Makhanya** – Process Engineer and **Mr. S. Shoba** – Training Specialist, for their selfless effort towards ensuring that I got the information I desperately needed.

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CHAPTER 1

INTRODUCTION

1.1 General Problem Statement

Increased labour productivity, improved efficiency, improved quality, reduced costs and reduced labour turnover, are some of the critical challenges facing the South African manufacturing industry today. As a way of dealing with these challenges, the industry needs more flexible labour strategies by improving worker performance and better utilisation of the current pool of skilled workers. One potential solution, already being used by some manufacturing companies, may be multiskilling (Haas *et al.* 2005:1).

According to Haas *et al.* (2005:1), a wide and more complex definition of multiskilling is that it is a labour utilisation strategy where workers possess a range of skills appropriate for more than one work process and are used flexibly on a project or within an organisation. Marshall (2005:3) adds to this definition by stating that multiskilling is a managerial strategy based on developing competency within the workforce and the full utilisation of these capabilities. Workers can be assigned to particular tasks based on their ability to perform the needed and required skill, unrestricted by traditional descriptions or work boundaries.

Haas *et al* (2005:1) also state that a multiskilled worker, therefore, is an individual who possesses or acquires a range of skills and knowledge and applies them to work tasks that may fall outside the traditional boundaries of his or her original area of specialisation. They continue to state that this does not necessarily imply that a worker obtains or possesses mastery level skills in multiple areas, but that it does, however, imply that, based on the flexible application of skills the worker already possesses or is willing to acquire, the worker can be an effective and productive contributor to the work output of several traditional disciplines.

According to Horbury and Wright (2001:i), multiskilling is therefore a way of working where the traditional divisions between work areas and separate disciplines are removed, and individuals are given responsibility for a range of different tasks. Furthermore, Cordery (1989:13) maintains that multiskilling is a mechanism by which companies can improve efficiency, reduce costs, improve quality and increase production etc. Multiskilling is fast becoming an increasingly popular approach for many organisations for a variety of reasons. As its name implies, multiskilling is concerned with equipping employees with many skills which allow them to work in different work areas in the organisation (Yee, 1994:17).

Koike (1984:47) is of the view that workers' skill is one of the most critical variables in promoting the performance of an organisation, especially in the long run. With globalisation becoming more and more the order of the day, it is of prime importance for organisations to be competitive in international markets. Amongst those economic

variables which contribute to competitiveness such as machines, natural resources and money, workers' skills are of a different nature. Koike (1984:47) observes that whereas machines as well as natural resources can be purchased with money, workers on the shop floor cannot largely be transferred from other countries. This implies therefore that workers need to be endowed with skills in order for them to effectively operate the machines and be able to cope with various organisational changes.

Horbury and Wright (2001:2) maintain that when organisations decide to multiskill, effectively they intend to remove the functional barriers, increase the flexibility of the workforce, bring about job enlargement, and bring about skill broadening, using people to cover a larger proportion of production activities, with the intention of reducing labour costs. They further state that there are also a number of other human resources issues that necessitate the adoption of multiskilling by a particular organisation. These include personal development and enhancing skills sets, empowerment initiatives, increasing job security, reduction of trade demarcations and weakening the power of trade unions.

Haas *et al.* (2005:1), however, warn that there are hindrances to effective adoption of multiskilling. According to them, impediments to effective multiskilling are both fundamental and practical. They further state that fundamental impediments are more difficult to overcome and include limits on human skill retention and the complexity of maintaining a multiskilled workforce from management and human capital investment perspectives. Practical impediments include owner bid requirements, project management infrastructure, resistance to change, and licensing requirements amongst others. Be that as

it may, they continue, "multiskilling is already being used by many organisations as a strategic business advantage."

Against this background, this dissertation set out to investigate the extent of the adoption of multiskilling by Hulett Aluminium. To achieve this, Hulett Aluminium, based in Pietermaritzburg in KwaZulu-Natal, was used as a case study. Hulett Aluminium was chosen as a case study because, firstly, it is one of the biggest manufacturing companies in South Africa and is the only company that manufactures products from aluminium. Secondly, the company was chosen for reasons of easy accessibility, cost effectiveness and time saving on the part of the researcher. Thirdly, and lastly, the company was chosen because it started to embrace multiskilling in 2000, and has ever since been struggling to implement this programme as effectively as it would have liked.

When multiskilling was implemented at Hulett Aluminium, it was introduced alongside broad banding, which is the amalgamation of small separate departmental units into larger units. This arrangement affected mainly the operations department. An appropriate communication strategy was devised prior to its implementation by management, in collaboration with the relevant stakeholders. The ultimate purpose of introducing multiskilling was to improve efficiency and production. Management and trade unions reached a consensus that they will work together towards ensuring the successful implementation of multiskilling. The company first targeted certain departments, like Hulett Hydro Extrusions over a period of three to five years, before the programme could be extended to other departments.

The agreement arrived at between management and trade unions was that all elements of multiskilling would apply at Hulett Aluminium, and that neither party would adopt one element of this agreement to the exclusion of others. Parties also came to an agreement that assessment and testing would take place at the workplace areas. The main aim behind the assessment would be to determine the competency level of employees against specific criteria required to perform the tasks as well as other relevant training modules. The people to be in charge of competency tests would be area managers or their nominees and qualified assessors. The company undertook not to retrench as a direct consequence of the implementation of multiskilling, unless such retrenchment is on a voluntary basis or unless external circumstances beyond either party's control impact on the company.

The study was therefore carried out using Hulett Aluminium as an example of a South African manufacturing company. The purpose of the study was to investigate the following problems about Hulett Aluminium:

- Preparation of a suitable environment for the application of multiskilling
- Effects of new, advanced technology on multiskilling – how new, advanced technology requires that employees be trained to be able to cope with it.
- Effects of absenteeism due to workshops and training programmes on multiskilling in determining the application of multiskilling.
- Productivity levels – the application of multiskilling as a way of raising the company's productivity levels.

- Labour turnover – the introduction of multiskilling as a way of dealing with the problem of labour turnover.
- Labour costs – the contribution of multiskilling to reducing labour costs.
- Trends towards self-managed groups – the implementation of multiskilling to encourage team work.
- Boredom and job dissatisfaction – the application of multiskilling to deal with problems associated with boredom and job satisfaction.
- Employee demotivation – the application of multiskilling to bring about worker motivation.
- Industrial conflicts – the introduction of multiskilling as a way of reducing industrial conflicts.

1.2 Background and Motivation

Hulett Aluminium (Pty) Ltd is South Africa's largest producer of aluminium products. Founded in 1946 as a subsidiary of the international Alcan Aluminium Group, it is South Africa's largest manufacturer of semi-fabricated and finished aluminium products. The company gets its aluminium from Alusaf in Richard's Bay. Hulett Aluminium has various operations and finishing departments, as Annexure B indicates.

For many years, employees at Hulett Aluminium had been confined to their separate departments. According to Mr. L. Makhanya, a process engineer in the company, even within a department not all employees had the skills to operate all the machines in that

department. He states that during interface meetings between departments, during which quality and productivity issues were discussed, the affected departments would come to virtual standstill, as the meetings would involve key employees in the departments. The stoppages impacted negatively on productivity, both in terms of quantity produced per given time and delays in supply to the end user. For quality, increased productivity, competitiveness and customer satisfaction and retention, Hulett Aluminium introduced multiskilling in 2000.

It is against this background that an interest arises as to the manner in which Hulett Aluminium has gone about implementing multiskilling, against the theoretical prescriptions in this regard. It would also be interesting to establish the costs and benefits associated with multiskilling and the role it could play in filling the gap in cases of advanced technology, in cases of absenteeism, in motivating the employees, in reducing labour turn over, in reducing industrial conflicts, in reducing costs etc.

1.3 Research Objectives

The overall objective of the research was to find out whether the theoretical issues raised by various authors about miltiskilling do actually apply in reality to Hulett Aluminium. The specific objectives were:

1. To establish the extent to which Hulett Aluminium prepares a suitable environment for the application of multiskilling.

2. To establish the effects of new, advanced technology in determining the application of multiskilling.

3. To establish the ways by which Hulett Aluminium maintains a multiskilled workforce.

4. To establish the activities within Hulett Aluminium that back up multiskilling

5. To find out the impact of multiskilling on productivity.

6. To establish the extent to which multiskilling contributes to

6. 1 alleviation of the problem caused by absenteeism due to workshop attendance, family commitments and training programmes.

6.2 reduced labour costs

6.3 reduced industrial conflicts

6.4 reduced labour turnover

6.5 increased job satisfaction

6.6 increased level of motivation

7. To establish the overall costs and benefits associated with the implementation of multiskilling

8. To establish if there are any differing opinions between management and shop floor employees regarding issues around multiskilling.

1.4 Research Hypotheses

Research hypotheses are the assumptions a researcher has arrived at which predict the outcome of his research. These assumptions are as follows:

Hypothesis 1. The company does not consult with various stakeholders so that everybody within the organisation could accept and own the practice.

Hypothesis 2. Hulett Aluminium ensures that there are motivational programmes and incentive schemes as a means of entrenching multiskilling.

Hypothesis 3. Multiskilling has helped to alleviate the problem of absenteeism at Hulett Aluminium.

Hypothesis 4. Labour turnover has increased at Hulett Aluminium as a result of multiskilling

Hypothesis 5. By embracing multiskilling Hulett Aluminium has experienced increased productivity.

Hypothesis 6. Multiskilling ensures the reduction of labour costs.

Hypothesis 7. Multiskilling empowers the workers to easily cope with the ever changing and advancing technology.

Hypothesis 8. Multiskilling is expensive in the short run, but it is a good investment for an organisation in the long run.

Hypothesis 9. There is no difference between management and employees with respect to their perceptions about multiskilling.

1.5 Anticipated Contribution

The research work is expected to have a significant contribution to exposing the problem that some South African manufacturing companies, as exemplified through Hulett Aluminium, have as a result of either a failure to implement multiskilling or not implementing it properly. It is also expected to advise those manufacturing companies who intend to introduce multiskilling about the following:

- Key factors for the successful implementation of multiskilling
- Advantages and disadvantages associated with the implementation of multiskilling
- Costs and benefits associated with the implementation of multiskilling.

1.6 Overview of the Dissertation

Chapter 2: The Theory of Multiskilling

This chapter focuses on the theory of multiskilling. Multiskilling is defined and various categories of multiskilling are described. The advantages and disadvantages associated with multiskilling are also discussed. The chapter further focuses on the factors an organisation should take cognizance of for the successful implementation of multiskilling. It also exposes some measures to be taken after the multiskilling programme has been successful.

Chapter 3: The Description of a Manufacturing Industry in South Africa: Hulett Aluminium (Pty) Ltd

This chapter focuses on the description of Hulett Aluminium (Pty) Ltd, in which the field of study was conducted. . It is a description of the company's profile, the organisational structure, the aluminium supply chain and the company's core business. It also reflects on the company's attempts to implement multiskilling. The chapter indicates why, when and how multiskilling was embraced by the company, the extent to which it has successfully implemented the programme and the costs and benefits associated with its implementation.

Chapter 4: Research Design: Field Study

This chapter focuses on the research study site, the research methodology, research pattern, questionnaire design and distribution, questionnaire collection and data analysis and interpretation. The manner in which hypotheses were approved or disapproved is also indicated clearly in this chapter.

Chapter 5: Research Findings

The main focus of this chapter are the statistical results generated from the responses given by the shop floor employees and managers at Hulett Aluminium. This is done in line with the overall purpose of this study: to investigate the adoption of multiskilling by the manufacturing industry in South Africa, specific research objectives, and hypotheses.

The chapter first focuses on the statistical results generated from the responses by the shop floor employees. The second part focuses on the statistical results generated from the responses by managers. The third part is concerned with the combined responses, that is, the responses from the shop floor employees in relation to those by managers. The fourth and last part is a summary of what this chapter is all about.

Each of the statistical results generated is explained fully so that its meaning could be understood in relation to the objective of the statement.

Chapter 6: Discussion and Conclusions

This chapter focuses on the discussion of the statistical results generated in the previous chapter in relation to the research objectives. The discussion is done in line with the purpose of this study: the investigation of the adoption of multiskilling by the Hulett Aluminium. Each research objective is considered in line with the relevant results generated. The relevant literature is quoted as a back up for the discussion.

Chapter 7: Recommendations

This chapter articulates some recommendations for Hulett Aluminium to enable the company to consolidate its implementation of multiskilling. These recommendations draw the management of this company to some of the critical issues around the implementation of multiskilling and further steps to be taken after the programme has been adopted.

Chapter 8: Limitations

This chapter outlines the various research limitations the researcher encountered during the research process.

CHAPTER 2

THE THEORY OF MULTISKILLING: LITERATURE REVIEW

2.1 Introduction

This chapter consists of a literature review which focuses on the exposition of multiskilling by various sources. The starting point is the definition of multiskilling, the placing of this phenomenon in its proper perspective and the various categories of multiskilling. Thereafter, there is a discussion of the advantages and disadvantages of multiskilling.

This chapter also focuses on the factors that an organisation needs to take cognisance of, to prepare a suitable ground for the successful implementation of multiskilling as advocated by Akhlaghi and Mahony (1997:71). After the discussion of the suitable climate for the successful implementation of multiskilling has been made, there is a discussion of the measures to be taken to ensure the maintenance of multiskilling within an organisation. At the end the important issues are summarised.

2.2 Definition of Multiskilling

Cordery (1989:13) defines multiskilling as, "the process of increasing the skill repertoire of workers in such a way as to improve the ability of an employee to work in more than

one narrowly defined occupational speciality". Programmes of multiskilling generally involve workers in a particular occupation, craft or skill category progressively picking up the capacity to perform additional distinct tasks, usually performed by workers in another functional or occupational area within that organisation.

Haas *et al.* (2004:1) view multiskilling as "a labour strategy which seeks to utilise the current workforce more effectively and provide better career opportunities for workers by offering continuous employment on the site and within the company". They continue to observe that with multiskilling, workers possess a range of skills that are appropriate for more than one work process and that are used flexibly within an organization. Carmichael and Macleed (1993:143) argue that if workers are multiskilled at more that one task before technological change occurs, and if the change increases demand for workers in other jobs at the firm, it is in the firm's own interest ex post to transfer these workers to other jobs. It follows, they continue to claim, that multiskilled workers will cooperate with labour-saving technical change in cases where simply-skilled workers will not.

According to Horbury and Wright (2001:6), multiskilling falls into four categories, namely, the vertical multiskilling, horizontal multiskilling, depth multiskilling and multiskille teams.

- "Vertical multiskilling – refers to the extent to which supervisory or administrative support tasks are learned by ordinary shopfloor employees. An example of vertical multiskilling is when this ordinary shopfloor

employee takes some elements of management e.g. production scheduling, quality control, purchasing etc.

- Horizontal multiskilling – refers to learning skills from another discipline or function within an organisation. For example, an electrician learning some mechanical tasks or a process operator learning some maintenance skills. Horizontal multiskilling can be subdivided into two main types:

  - Skill broadening – where minor elements and tasks are learned on top of the predominant activity. For example, a mechanical engineer may learn how to isolate and disconnect a motor to avoid the use of an electrician.

  - Cross skilling or Dual skilling – where another major activity is learned in addition to the main craft and a person is considered competent to carry out any activity in these two main disciplines. For example, multiskilled craftsmen considered competent to carry out both mechanical and electrical tasks.

- Depth multiskilling – where a craftsman acquires and applies more complex, specific skills within the same trade or discipline. An example of depth multiskilling is when a mechanical craftsman acquires specific skills, such as expertise in hydraulic systems.
- Multiskilled teams – where groups of individuals have a range of skills."

When adopted, multiskilling brings about a number of improvements within an organisation. An organisation experiences a reduction in the number of distinct job titles within itself, often termed broad-banding (Cordery,1989:14). Job classifications and pay

structures become unified across different functional or skill areas and it is thus made potentially easier for employees to move across different work areas or aggregations of tasks in the course of their employment.

2. 3. Advantages of Multiskilling

A number of advantages of multiskilling have been cited by various writers and some institutions. A good example of an institution that has done a lot of research on, and has adopted, multiskilling, is the National Food Services Management Institute (2004). This institute, located at the University of Mississippi, Oxford campus, takes its programmes and services nationwide through workshops, teleconferences, audio conferences and training packages. It provides a summarised version of the advantages of multiskilling:

- "Work force becomes more flexible – The flexibility of the workforce stems from the fact that individuals become competent in several tasks, and therefore can move from one job to another without any problems.
- Employees become more aware of the workflow – Multiskilling provides the employees with an in-depth understanding of the entire work process. They are no longer confined to the understanding of small units of the production process. This surely contributes to quality production as the workers can easily detect flaws in the production process, in case there had been any upstream in the production system. The employees downstream can contribute positively to the quality of the product right from its upstream stages up until its final stages.

- Employees are better prepared to anticipate problems or requirements of other areas – This is because the employees are aware of what is expected in each area of the production process. The easy detection of the problems in various areas of the production process helps, in that, these problems could be corrected earlier before they could have a negative impact on the entire process.
- Employees can assume other tasks when there is absenteeism – Since multiskilling equips the employees with various skills to cope with various areas in the production system, the employees can easily take on other tasks in case of absenteeism of their colleagues. If some employees become absent due to illness or attending training or workshops, then others could fill the gap.
- Employees can be moved into other positions at peak times – This is in keeping with the type of flexibility the workers acquire as a result of multiskilling.
- A new employee at the job may have new ideas to fine-tune that job
- Employees overcome the feeling of having a dead-end job
- Jobs remain interesting and challenging – A multiskilled workforce is not confined to one job. Job rotation can be applied and this makes jobs interesting and challenging
- Tedious tasks can be spread around, thereby decreasing turnover
- Boredom in the workplace is reduced – Being involved in one and the same activity can result in boredom. Multiskilling helps in that it exposes the workers to different activities, which results in the reduction of boredom.

Cohesiveness amongst employees is enhanced – One of the advantages of multiskilling is that it encourages team work. It is this system of working in teams that brings about

cohesiveness in the workplace. Cohesiveness in turn leads to the reduction of industrial conflicts." (National Food Services Management Institute, 2004: 3)

It is worth noting, however, that there are some advantages of multiskilling which the National Food Services Management Institute does not make mention of, which other authors do reflect on. So, these advantages and some of those cited by the institute shall be discussed in detail.

2.3.1. Keeping Abreast with Rapid Technological Change

Carmichael and Macleed (1993:142) argue that the benefits associated with technical progress in the developed world are widespread and obvious: "new and better products have been introduced, older ones are produced more cheaply, and overall wealth and living conditions are at unprecedented levels." However, managers of today are confronted with a problem, whereby even if they know the value of the new machines for their firms, they may not get the cooperation of the workers. The latter might view the introduction of new machines as a way of either replacing them or hiring other more skilled workers from the outside market. Carmichael and Macleed cite an example of a welding firm, which could introduce some new equipment to increase the productivity of the welding crew. The welders are asked to use the equipment and observe how well it works. It will not be very long before the workers know how effective the machine is. Yet, they will have little incentive to reveal this knowledge if it is clear that its adoption will reduce the demand for the welders.

What a firm could do, according to Henry (1988:36), is to simply promise to retain its workers and retrain them for other jobs when technical change occurs. But this promise, he continues to argue, is not credible, as with general training these workers must be paid the market wage at their new jobs. This then posses a problem for the firm as the firm can get workers for these jobs at the same wage on the outside market without paying the retraining costs. After the technical change has occurred, therefore, the firm may renege on its promise and hire outsiders for any new jobs created elsewhere in the firm.

Given this situation that the firms of today are faced with, Carmichael and Macleed (1993:143-144) argue that a more successful strategy for the firms involves the multiskilling of the workers. If workers are skilled at more than one task before technical change occurs, and if the change increases demand for workers in other jobs at the firm, it is in the firm's interest to transfer these workers to other jobs. Their argument continues, " it follows that multiskilled workers will cooperate with labour-saving technical change in cases where singly skilled workers will not." They then cite some advantages labour-saving technical change can have in relation to multiskilled workers:

- "Workers exhibit lower turnover levels.
- More job security
- Attachment of wages to workers rather than the job."

2.3.2 Job Satisfaction

One of the arguments in favour of multiskilling is that it increases the level of job satisfaction among the employees. According to Cordery (1989:15), multiskilling gives room to such important components of theoretical perspectives on the humanisation of work as job enrichment and socio-technical systems and might therefore be expected to contribute to such desirable individual and organisational outcomes as increased job satisfaction, motivation and lowered absenteeism and turnover. In support of this argument, Horbury and Wright (2001:11) state that when multiskilling is introduced with the sole intent of bringing a positive step to improve individuals' quality of life, there is some evidence that suggests that increased job satisfaction amongst employees will result.

The Canadian Association of Social Workers (CASW/ACTS) - A federation of 10 provincial social work organisations aimed at promoting a national role in strengthening and advancing the social work profession in Canada – argues that professionals enjoy increased job satisfaction in multiskilled roles, have increased job security due to their wide ranging skills and have increased sense of worth because of their value to the organisation However, Akhlaghi and Mahony (1997:69) maintain that it is erroneous to assume that multiskilling contributes to increased job satisfaction, motivation and lower absence and turnover. They further state that when multiskilling is introduced with the sole purpose of promoting job satisfaction and quality of working life, there is a need to identify the conditions under which this will be the case. For instance, the impact of the ability to perform a flexible range of tasks or skills on employee motivation and

satisfaction will be minimal, unless there is also increasing autonomy or feedback in relation to the exercise of those skills.

2.3.3 Labour Flexibility .

Hendry (1988:36) observes that various industries around the world are facing a radical change of work and skills as a direct consequence of new technology based on the computer and robotics. As a result of this, Cordery (1989:13) states, "[these various industries] are discussing and debating ways of increasing the range and flexibility of skills possessed and utilised by shop floor employees. He further maintains that the discussion and debate have also been largely driven by a perception on the part of management within organisations that labour flexibility, in a variety of manifestations, is the key to enhancing competitiveness in a climate of rapid technological change.

Horbury and Wright (2001:10) argue that flexibility, in the form of multiskilling, is where individuals are competent in several tasks, and therefore can move from job to job to provide cover for absence and training. They further maintain that as in all forms of multiskilling, this is limited to the reduction of functional demarcations, and it can encourage individuals to gain more individual skills, leading to a more highly skilled and capable workforce.

Horbury and Wright (2001:10) advise that efforts need to be made by organisations to ensure that individuals' skills and competencies are current, and that individuals

understand the competence limits within which they can operate. They also observe that it is important to ensure that efforts are made to ensure that competence is maintained in all tasks. The warning that they give to organisations is that organisational flexibility should not be at the expense of individual health through overloading and a perceived lack of control and competence and that working beyond one's limits is a known stress factor.

Many personnel managers claim that they are now laying the foundations for a workforce whose skills, attitudes and culture will provide the high production, commitment and versatility which tomorrow's market and technological forces will surely demand (Atkinson, 1986:26). What all this indicates is that as technology advances so also is the need for skill development that would keep pace with this advancement, and skills development in turn enhances labour flexibility.

Cordery (1989:13) argues that one of the methods of enhancing labour flexibility is the introduction of multiskilling. When multiskilling is introduced, new technology has an impact not only on the skills of those directly affected by it, but also on the skills of others, and on the culture and structure of the organisation (Hendry, 1988:36).

Employee flexibility, therefore, is one of the key benefits of multiskilling, in that the individuals are competent in several tasks, and therefore can move from one job to the other to provide cover for absence and training. This leads to the reduction of functional demarcations and encourages individuals to gain more individual skills leading to a more highly skilled and adaptable workforce. Employee flexibility also has the advantage of

minimising boredom and alienation while, at the same time, developing skills attractive to future employees.

2.3.4 Knowledge of the Entire Work Process

If employees can have a better knowledge of the company's policies, objectives and reasons behind the decisions affecting them, they will be more loyal, motivated and committed in giving their maximum contribution to the organisation. According to Morita (2002:2), multiskilling therefore provides workers with a broad knowledge of the whole work of the organisation, which enables them to make better decisions concerning how to cope with irregular and emergent events.

Koike (1988:34) maintains, "once the employees obtain a good understanding of the entire work process through the acquisition of multiple skills, the firm finds itself in a better position to conduct continuous process improvement by inducing its employees to actively participate in quality control circles activities." Morita (2002:3) adds to this view by stating that the firm can also take advantage of its employees multiple skills by employing horizontal information structure in which real decision-making authority is delegated to lower hierarchical levels, because employees with multiple skills can cope with irregular and emergent events quickly and effectively.

2.3.5 Worker Efficiency

According to Carmichael and Macleed (1993:144), when people are multiskilled, they tend to be more interested in their jobs and strive to improve themselves in the work-related skills. If workers understand what their role is in the entire process and how it

impacts on others, they are usually more efficient. On their part Akhlaghi and Mahony (1997:66) observe that many organisations have found that teams of multiskilled workers are vital to quality improvement, as they can detect flaws in each other's work, apply problem-solving techniques more effectively, and fill in for each other as needed.

From multiskilling the whole organisation benefits in that the flexible and efficient workforce provides cover, quicker response to meet customer needs. This means therefore that the more multiskilled the workforce is the more efficient it becomes. Akhlaghi and Mahony (1997:3) maintain that multiskilling results in such positive effects as, "the removal of demarcation, removal of the need to employ temporary cover, improvement in quality, reduced risk through better communication, unified staff, increased staff morale, the opportunity to unlock hidden staff talent and energy, reduced staff turnover and absentee rates."

2.3.6 Encouragement of Teamwork

Due to globalisation and liberalisation of trade markets, manufacturers are gradually changing the way they operate in order to remain competitive. They need to be more productive, deliver high quality products, be efficient, be price competitive, meet customers' needs and substantially decrease new product cycle times (Harris, 1999:3). Harris argues, "perhaps the only real lasting competitive advantage of the future lies in organisations' human resource – how they are managed and organised." He further maintains that multinational manufacturers need to adopt lean manufacturing principles which encompass organisational and management practices, including team work.

A large number of firms around the world are currently changing their work organisations by creating teams of workers. According to Tremblay (2003:9), teamwork figures prominently amongst the numerous changes that have taken place in work organisation in the 1990s. It is regarded as an excellent way to make the production process more flexible, hence, an excellent way to develop what is generally described as organisational flexibility. Marchington (1992:25) observes that firms, on the one hand, are changing their work organisation in order to adapt to the new competition and thus satisfy new demands, and, on the other hand, they are beginning, in certain cases, due to the technological changes which call for collaborative work, to implement a model of organisation that is based on team activities and multiskilled, autonomous groups instead of on individualised jobs.

Harris (1999:6) defines a team as, "a group of people in an organisation who work together and are collectively responsible and accountable for a defined task(s), segment, process, product or service." As far as he is concerned, the term team has been widely used to describe a variety of organisational group structures such as quality improvement teams, quality circles, cellular work teams, project task teams, semi-autonomous teams, cross-functional work teams, natural work teams, lean teams, supervisor-centred teams, directed work teams, self-directed teams, self-managed teams and autonomous teams.

A multiskilled team therefore is a group of individuals who collectively have a range of skills. The rationale behind having a multiskilled team is to have a team that is competent in all the skills required to complete a job. According to Horbury and Wright (2001:3), there are two main types of multiskilled teams, those composed of traditional single

skilled individuals collected into one team and managed by one supervisor, or a team of multiskilled individuals. The intention here, they continue to maintain, is to have a team where strengths and specifications are combined, which increases the range of skills available to tackle certain issues.

Harris (1999:8) cites some of the advantages of a team-based production system as :

- "Improvement in efficiency, production and quality
- Tap the full potential of all employees
- Empowered and committed workforce
- Reduced absenteeism
- Responsible and accountable workforce
- Greater return on training investment
- Increased shareholder confidence
- Increased job satisfaction
- More say in decision making
- Skill enhancement and therefore greater career prospects
- Increased job security
- Opportunity to participate in improving performance in daily tasks."

According to Brooks (1994:220), as team members begin to acquire sufficient autonomy to have a degree of control over their time, their movements and their work, and as the difference in power between the members are reduced, the team can try out a significant apprenticeship process in the technical and social fields on its members. One of the managers of a firm once commented, "the positive aspect of the team system is that it results in a great deal of multiskilling and operational flexibility" (Tremblay, 2003:11). It is evident that as teams work close to one another, this results in increased multiskilling, and as multiskilling increases, the teams are brought closer to one another. The closer the teams are to one another, the more blurred the boundaries become between specializations and this leads to a reduction in the exclusive fields of skilled workers.

The observation that has been made by Management Action Guides (1993:63) is that teamwork results in the following :

- "People working together for clearly shared goals in an atmosphere of mutual trust and confidence and concern for performance.
- An acceptance of differences and of the contributions and roles of each individual.
- The resolution of differences positively without personal animosities.
- The ready sharing of knowledge, information, skills and abilities, rather than their use as personal power bases.
- Individuals not feeling threatened by problems in their work but able to state them openly and use the team as a resource and support.

- The sharing and delegation of responsibility with people working independently but cooperatively.

- Individuals not feeling threatened by others' suggestions as to how performance in their work area might be improved.

- Individuals not afraid to take initiatives and actions as needed, not being constrained by fear of disapproval."

2.3.7 Increased Labour Productivity

According to Stevenson (1999:38), productivity is an index that measures the outputs (goods and services) relative to the inputs (labour, energy, materials and other resources). It combines the concept of effectiveness and efficiency, where effectiveness is the degree to which end results are achieved and efficiency is associated with the amount of input resources used (Slack, 1999:149). High productivity is assumed to be a good thing inasmuch as a productive operation is more likely, other things kept constant, to have lower cost.

One of the advantages of multiskilling is that it increases labour productivity. Based on the flexible application of skills that the employees already possesses or is willing to acquire, workers can contribute significantly to the output of several work processes. Ki Seong Park (2004:1), of the Department of Economics at Sungshin Women's University, argues, "the increase in the ratio of multiskilled workers in the firm has a positive impact on the growth of the firm's labour productivity. The analyses show that labour productivity increases by 1 percent with 10 percent increase in multiskilling ratio." She

further states that as the workers accumulate human capital, primarily through multiskilling, the productivity of the firm improves. On his part Connock (1985:360) maintains, "flexibility of task by removing unnecessary boundaries between jobs can improve productivity by reducing much of the over manning traditionally associated with demarcation." As far as he is concerned, multiskilling can also reduce the loss of output due to absenteeism, since trained, flexible employees can provide better cover for absence.

2.3.8 Cost Reduction

Multiskilling is also seen as having benefits to both employers and professionals. It is thought to be more cost effective, a partial solution to recruitment problems, an approach which supports flexible use of staff and a method for reducing the number of staff needed to deliver a service (Cross, 1986:26). With the increase in the manufacturing industries' overall competitive strategy, maintenance will be increasingly under pressure to find ways to improve cost effectiveness and quality of service (Cordery, 1989:16). Multiskilling offers one important route both to reduce costs and improve performance, which is currently reshaping an increasing number of engineering and production departments (Cross, 1986:27).

As Horbury and Wright (2001:10) observe, "one of the tangible benefits from multiskilling is that companies can reduce headcount. By equipping personnel with the skills to carry out a greater variety of tasks, multiskilling means that employment levels can be reduced." Cross, (1986:27) found that the direct labour costs were reduced by between 20 and 25 percent following the organisation's implementation of multiskilling.

A further benefit of multiskilling and reduced labour costs is the widely cited reduction in overtime (Horbury and Wright, 2001:11). Multiskilling therefore provides for increased labour flexibility and thus reduces labour costs and increases productivity.

Cordery (1989:18) maintains that with the absence of tight functional specialisation in skills possessed by employees, as a consequence of multiskilling, fewer "spares" need to be employed to cope with absence, leave, and turnover and therefore an organisation's fixed costs owing to labour are reduced. He continues to state that as people at the lower levels in the organisation become more skilled, this may effectively lead to a reduction in the number of supervisory and support staff required, and thus a reduction in indirect labour costs. This implies that an organisation could save a lot of money which it would have otherwise spent on supervision, as the multiskilled workforce would operate with a high degree of efficiency (Carmichael and Macleed, 1993:144).

Cordery (1989:18) further argues that whilst multiskilled workers potentially have a claim to higher wages than their traditionally narrowed skilled counterparts by virtue of their job's increased value, it is likely that these costs would be offset by reductions in the number of people it is necessary to employ, and the associated costs. He then arrives at a conclusion that an organisation with multiskilled employees can reduce costs, because instead of having many specialised employees at high costs, it can instead have a few multiskilled employees performing a variety of tasks.

2.3.9 Reduced Downtime

As a way of illustrating how multiskilling contributes to reduced downtime, Cross (1986:26) refers to the multiskilling of operators. He states, " multiskilling of operators in

simple maintenance activities is frequently carried out as a proactive way of reducing downtime." Process staff may be taught how to inspect their equipment at the start of the shift as well as basic fault detection, lubrication and troubleshooting. In this way process operators are reducing the likelihood of downtime, as well as actually reducing downtime by assisting maintenance tasks (Horbury and Wright, 2001:11).

Furthermore, a multiskilled craftsman can carry out the isolation, disconnection, repair, reconnection and recommissioning of motors and pumps. Previously this might have involved the attendance at some stage, of both electrical and a mechanical craftsman. A multiskilled craftsman, whatever their original core trade, is able to undertake the task, again limiting waiting time (Horbury and Wright, 2001:11). Cross (1986:27) reports that multiskilling improved the application of a correct response to frequent, short duration faults, which added between 5-17% more production time.

2.3.10 Reduction in Industrial Conflict

One of the arguments in favour of developing a multiskilled workforce suggests that a higher level of functional flexibility will result in reduced industrial conflict (Cordery, 1989:17). The rationale underlying this argument is the fact that multiskilling is bound to result in a more contented and satisfied workforce, which will be less likely to engage in industrial action. Another rationale advanced by McKenzie (2004:9) is the notion that the introduction of multiskilling, with its potential reduction in the number of distinct job classification and the general erosion of the "one-person-one job" concept, will result in more flexible employee attitudes towards job demarcation. He puts it in short that multiskilling results in "minimum to no conflict".

McKenzie (2004:9) cites the following as benefits associated with multiskilling:

- "All staff members have valued input into staff meetings.
- Understanding of other staff members' abilities and respect for them.
- Appreciation for other team members work load.
- Increased productivity
- Minimum to no conflict
- No stress for the manager
- Friendly work environment
- Less time loss due to illness"

2.4 Disadvantages of Multiskilling

Much as multiskilling has advantages for an organisation, it does, however, have disadvantages, although in the vast majority of cases these disadvantages are less significant compared to the advantages. National Food Service Management Institute (2004:9), as an example of an institute that has done extensive research on multiskilling, summarises the disadvantages of multiskilling thus:

- "Possible reduction in productivity during the training period.
- Increased supervisory time is required until the employee is up to speed.

- Competence assessments may be more detailed than in traditional systems.
- Frustration in peak times and balancing priorities.
- Increases in training costs."

There are some disadvantages associated with multiskilling which are not cited by the institute, but which other authors do reflect on.

2.4.1 Cost

Van Harm (1987:29) is of the opinion that if multiskilling is used for jobs for which it is possible to recruit at short notice straight from the external market, it will prove a very expensive option. He further states that to come up with a multiskilled workforce can cost a firm a lot over a short term, as it has to spend a lot of money in training programmes. The firm also loses a lot because the whole operation processes get disturbed during the training process. If the firm trains its workforce for miltiskilling, it runs a risk of losing some of its members. This is due to the fact that the more flexible a worker is, the more confident be becomes in order to find an alternative employment elsewhere.

2.4.2 De-specialisation

According to Cordery (1989:20), multiskilled employees are a valuable, yet expensive, commodity for the organisation. He further concurs that much as these employees fulfil critical, firm-specific functions, and their training and development necessitates major financial investment, there are problems for these individuals in adjusting to this multiskilled status. These individuals may, for example, complain of only being able to

form superficial social contacts due to the regular job rotation involved and might also perceive that they have little freedom in being able to choose the job or task they carry out. The same employee could also feel insecurity and loss of status due to their de-specialisation.

The argument by Horbury and Wright (2001:10) is that "if cost reduction is the main motivator for multiskilling, there is a danger that the necessary planning and investment will not be made. Furthermore, training and retraining could be inadequate and inappropriate for individuals to safely and effectively carry out their jobs."

2.4.3 Loss of Self-esteem

Multiskilling results in blurred boundaries between specialisations, and this leads to a reduction in the exclusive fields of skilled workers. Thus, workers with the most experience and seniority see this process as having the potential to downgrade qualifications (Tremblay, 2003:8). The observation made by Klein (1994:152), regarding studies that she conducted with certain firms that had introduced multiskilling, is that many skilled employees felt as if their status and self-esteem had been lowered. Some operators that she interviewed responded thus: "we lose our self-esteem. We lose our sense of specialisation, which is what gives us our self-esteem. We become generalists, which is demeaning and frustrating. We lose our expertise, they get diluted. The situation gives us more synergy, but it is more by default than by choice."

2.4.4 Loss of Competitive Edge

The detractors of multiskilling view the practice as a recipe for the loss of the employees' competitive edge. There is also a feeling amongst certain labour unions that employees who are specialists in their areas would tend to lose their edge over a period of time when they are multiskilled. Furthermore, multiskilled workers find themselves having to undergo a tremendous amount of pressure on the job and consequently, ailment caused by such pressure would become increasingly evident (Connock, 1985:37).

2.5. The Key Factors for Successful Implementation of Multiskilling

There are a number of key factors an organisation has to take cognisance of for the successful implementation of multiskilling. These factors are very essential if the success of a multiskilling programme is to be realised. They can be regarded as the pillars of multiskilling, without which the programme cannot succeed. The steps that an organisation can follow are the following:

2.5.1 Mission for All Staff

Mission refers to the business in which the organisation is involved and represents a general plan of how the organisation aims to achieve its objectives. If an organisation intends to introduce multiskilling, it must accommodate this in its general plan of operation. All the stakeholders within the organisation should endorse the inclusion of the practise in the overall plan of the organisation.

2.5.2 Goal Setting

According to Gerber *et al.* (1998:274), goal-setting theory is based on the premise that people's goals or intentions play an important part in determining behaviour. According to this theory, it is the anticipation of the achievement of goals that motivates people and this motivation is reinforced by the feeling of satisfaction which they get when they do achieve the goals. Wexley and Baldwin (1986:504) define goal setting as "a motivational strategy, which is effective for inducing behavioural change in various settings." Participation in goal setting by all the relevant stakeholders is very important as a means of getting agreement to the setting of higher goals.

Gerber *et al.*, (1998:275) argue that difficult goals must be agreed upon and their achievement reinforced by guidance and advice. They further maintain that the combination of goal difficulty and the extent of the person's commitment to achieving the goal regulate the level of effort expended. Finally, feedback is vital in maintaining motivation, particularly towards the achievement of even higher goals. Performance feedback also allows the individual to track how well he/she has been doing in relation to the goal, so that, if necessary, adjustments in effort, direction or possibly task strategies can be made (Robertson *et al.* (1992:). It is therefore important for any manufacturing organisation to come up with clear goals for the introduction of multiskilling. The goals for the introduction of multiskilling should be challenging, specific, understandable, meaningful, acceptable and simple.

2.5.3 Benchmarking

According to Warner (1996:7), benchmarking refers to a continuous process of measuring products, services and practices against the toughest competitors or those companies recognised as industry leaders. On their part Coopers and Lybrand (1994:3) define benchmarking as "the process of comparing business practices and performance levels between companies or divisions in order to gain new insights and to identify opportunities for making improvements." Before any organisation can implement multiskilling, it is imperative that it checks with other organisations that have already implemented it, so that it could avoid the errors those organisations have made in the implementation process.

On their part Adendorff and De Wit (1997:16) argue that both the continuous improvement approach and business process re-engineering require measures of performance to establish whether improvement has in fact taken place. They further state that although the measures of performance will often represent internal comparison, in other words the extent to which the company has improved its own operations, external comparison is also possible and essential. They continue then define benchmarking as a process that compares a business's own practices to similar practices of firms recognised as the most effective at a particular task, the aim being to identify the gaps in the process currently in use.

2.5.4 Open Discussion

Before multiskilling could be introduced, it is imperative that management within an organisation should hold open discussion with trade unions and staff. The discussion will surely address all the concerns from various stakeholders. Once everybody is clear about what multiskilling entails, they will own the practise and ensure that it succeeds.

2.5.5 Job Design

It is imperative that jobs be designed in such a way that the workforce could be accorded relevant skills to cope with the new jobs which are varied. Rollinson *et al.* (1998:240) define job design as, "the procedure of designing in advance all the features of a task or job, specifying the way the operator will work, how he/she will relate to his/her workplace, the physical and social environment, and all other relevant aspects". It is an essential mechanism that enables management in an organisation to decide on the content and performance and competency requirements of jobs or roles in order to provide a basis for selection, performance management, development and reward, and to maximise intrinsic motivation and job satisfaction.

Armstrong (2003:341) makes mention of five principles of job design:

- "To influence skill variety, provide opportunities for people to do several tasks and combine tasks.

- To influence task identity, combine tasks and form natural work units.
- To influence task significance, form natural work units and inform people of the importance of their work.
- To influence autonomy, give people responsibility for determining their own working systems.
- To influence feedback, establish good relationships and open feedback channels."

The core elements of job design are: job simplification, job rotation job enlargement and job enrichment.

2.5.5.1 Job Simplification

Job simplification entails the breaking down of tasks into their simplest elements, that is, those that are complete in themselves but are still part of the overall task. The simpler the tasks are, the clearer it becomes as to what skills are needed for the execution of those tasks. Job simplification provides for the predetermination of tools and techniques, that is, the precise instructions for the worker on how to do the tasks and what tools and equipment to use. Simplified tasks lead to job satisfaction on the part of the worker, which in turn lead to improved productivity.

Vecchio (1995:54) argues that job satisfaction, as a result of job simplification, can only improve productivity up to a certain point, beyond which worker dissatisfaction can set in. he continues to state that there is a point of diminishing return after which, no matter

how much more the tasks are simplified, no further improvement in productivity is obtained, and that to simplify the task beyond this point can result in industrial relations problem and conflict which can defeat the original objective of improving productivity.

2.5.5.2 Job Rotation

Job rotation involves moving a person from one job to another. It is used more as a training and development technique, applied at lower organisational levels and has, as its advantages, the reduction of boredom, greater work variety, acquisition of additional skills, reduced absenteeism and turnover and greater identification with the organisation.

Connock (1985:34) is of the opinion that a system of job rotation encourages the actual utilisation of the range of skills acquired and to facilitate the training or skilling process. On his part Cordery (1989:14) maintains that initially job rotation is introduced as a means of backing up classroom-type of training with on-the-job training. A formal system is often thus needed to ensure that all employees have the opportunity to gain the necessary practical experience in the different skill areas. He further states that once skills are acquired, job rotation serves the purpose of maintaining skills at an organisationally acceptable level and of ensuring that employees experience variety in day-to-day work performance.

One operator in a certain firm once commented, "Since we rotate jobs, everybody does everybody else's job. If somebody in missing, it's easy to replace him because there is

always somebody else who can do the job. We can ask anyone. The guys are not restricted by their chairs and desks. It's everybody's desk or chair" (Temblay, 2003:15).

2.5.5.3 Job Enlargement

Job enlargement involves increasing the number and variety of the tasks that each individual performs and can be viewed as horizontal expansion of the job. It is advantageous to the workers if the additional tasks require new skills to be learned as this can boost their morale and give them a grater sense of security because they know that if one skill area becomes unwanted, they can be redeployed elsewhere. Job enlargement is much in line with miltiskilling as it provides an opportunity for the multiskilled workforce to have a variety of tasks at their disposal.

2.5.5.4 Job Enrichment

Job enrichment is a form of vertical job expansion, which is a more radical form of job redesign that allows some discretion over how and when a person performs a range of tasks. It also provides the worker with greater autonomy, increased delegated authority, a greater say in the planning and execution of tasks and control of work. Work, therefore, needs to be more meaningful and challenging and allow for development and personal growth. According to Rollinson *et al.* (1998:244), job enrichment provides for "a shift from standardised work processes to standardised outputs...and also involves a heightened emphasis on personal goals to try to balance them with those of the organisation."

Effective job design therefore helps both management and workers by promoting efficiency and performance within the organisation and by providing opportunities for learning new skills and improving career opportunities and job satisfaction. According to Gibbs (2000:2) job design also provides for the needs of the organisation within allocated resources in such a way that tasks are allocated to particular work groups and individuals within those groups on a basis that is seen to be fair and efficient. He further states that effective job design results is satisfying jobs characterised by challenge, authority and control by individuals over complete pieces of work rather than being given a bit of something to do and then never seeing it to completion or reach fruition. It encourages the development of an individual's competencies, a multiskilled individual, while contributing to the aims of the organisation.

2.5.6 Job Analysis

Job analysis is a process that investigates and analyses a job to give systematic information about all its aspects. It is a checklist of some sort, which is completed by gathering information from a number of sources, such as existing job descriptions, existing role occupants, colleagues and direct observation. By analysing this information, a job description can be compiled, which is a document giving the details and requirements of a particular role (Beardwell and Holden, 1994).

According to Armstrong (2003:174), job analysis produces the following information about the job:

- "Overall purpose – why the job exists and, in essence, what the job holder is expected to contribute.

- Content – the nature and scope of the job in terms of the tasks and operations to be performed and the activities to be carried out, i.e. the process of converting inputs (knowledge, skills and abilities) into outputs (results).

- Performance criteria – the criteria, measures or indicators that enable an assessment to be carried out to ascertain the degree to which the job is being performed satisfactorily.

- Responsibilities – the level of responsibility the job holder has to exercise by reference to the scope and input of the job; the amount of discretion allowed to make decisions; the difficulty, scale, variety and complexity of the problems to be solved, the quality and value of the resources controlled, and the type and importance of interpersonal relations.

- Organisational factors – the reporting relationships of the job holder, i.e. to whom he or she reports either directly or indirectly to the job holder, and the extent to which the job holder is involved in teamwork.

- Motivating factors – the particular features of the job that are likely to motivate or demotivate job holders if, in the latter case, nothing is done about them.

- Development factors – promotion and career prospects and the opportunity to acquire new skills or expertise.

- Environmental factors – working conditions, physical, mental and emotional demands, health and safety considerations, unsocial hours, mobility and ergonomic factors relating to the design and use of equipment or work stations."

Job analysis therefore provides the foundation for good selection by identifying the knowledge, skills, abilities and other requirements necessary before selection could be done. It helps in identifying exactly what the purpose, duties and responsibilities of the task are and its position within the organisational structure. With a thorough job analysis an organisation can decide as to how its workforce can be utilised to ensure that it is multiskilled.

2.5.7 Training

According to Yee (1994:17), in order for multiskilling to be effective a proper training system must be in place, to equip employees with relevant skills identified to meet both individual and organisational needs. He further maintains that training must be planned, evaluated, documented and monitored. This implies that it is very important for management to be committed to training for multiskilling, so that the necessary resources may be allocated – namely time, materials, adequate staff and a budget for training. Training responsibilities need to be clearly defined. As Yee (1994:17) puts it, "training and development and multiskilling require a great deal of organisation and co-ordination where a designated training co-ordinator may be necessary, especially in larger organisations."

Training can be defined as a systematic and planned process that is aimed at improving the knowledge, skills and behaviour of employees in such a way that organisational objectives are achieved (Van Dyk *et al*, 2001:147). According to him, training is not only about giving people the knowledge and skills they need to do their job; it also seeks to impart a relatively permanent change in an individual, thus improving their ability to

carry out their job. Since training is task-and-result-oriented, it must focus on enhancing those specific skills and abilities needed to perform the job. Training therefore plays a pivotal role in multiskilling as it ensures that the workforce acquires skills and abilities that will help them to perform tasks effectively.

Cordery (1989:14) is of the opinion that training schemes should exist within an organisation as these provide the opportunity for employees to acquire a range of distinct and organisationally relevant skills within each broad band of classification. Where multiskilling has been adopted, there are also training schemes which provide the opportunity for employees to acquire a range of distinct and organisationally relevant skills within each broad band classification (Cordery, 1989:14). These training programmes are offered internally or externally, with skills generally oriented towards that organisation's operating requirements (Curtain, 1987:10).

The training schemes are often modularised, so that they enable the employee to build over a period of time a coherent set of skills of increasing complexity and diversity.(Akhlaghi and Mahony, 1997:70). Over a period of time this would potentially enable the employee to perform tasks associated with several of what are now current functional areas as and when required. This means the erosion of the notion of one person-one-job, where job is defined in terms of a fairly narrow and uniform set of tasks (Cordery, 1989:14).

Any organisation that aims at having effective multiskilling needs to take training seriously. Marshall (2005:5) says, "The only thing worse than training your people and losing them is not training them and keeping them." For effective multiskilling, she

continues to maintain, many companies implement a training curriculum for new employees where the multiskilling programme is mapped and planned for. Employees can spend time in other departments and these departments report back to the facilitator as to the progress of the employee. The argument by Marshall therefore adds weight to the indispensability of training if ever justice has to be done to the successful embracing of multiskilling.

According to West (1999:117), training should include a range of awareness raising activities with the aim of raising all staff to the same level of competence after a set period of time. This should be followed up by ongoing refresher training and should be underpinned by a comprehensive staff manual containing procedural and training notes relating to every aspect of the department's operations. He further states that this manual should be updated regularly after consultation with staff. This, as far as he is concerned, will result in staff feeling confident in implementing agreed upon procedures. This view is in line with that of Tucker (2002:1) who maintains that employees should be trained to think that they are the organisation they represent. The emphasis on competence, in an environment of shared objectives and team working, could be further encouraged by weekly meetings, which would be key opportunities both to keep staff informed and also for all employees to take part in shared decision – making (West, 1999:117).

2.5.8 Ongoing Management

It is important for management, in an organisation that has embraced multiskilling, to have monitoring tools to evaluate the application of multiskilling and effect improvements where necessary. Following training and the determination of competence,

it is important that skills are used and maintained to avoid stagnation and deskilling (Horbury and Wright, 2001: 17). This involves ensuring that individuals carry out tasks which they are trained to perform. An element of this is ensuring that supervisors and first line managers are fully aware of the new skills acquired by the workforce and make sure that staff uses them.

- To the managers of organisations, Horbury and Wright (2001:17) suggest the following mix of subjective and objective performance measures as a way of assessing the effectiveness of multiskilling: job satisfaction, motivation, organisational commitment, performance, turnover, financial performance, skill variety, mental health and health and safety.

2.5.9 Reward Systems

For multiskilling to be effective there should be a compensation or reward system which is closely linked to the acquisition of additional skills (Akhlaghi and Mahony, 1997:70). For employees to welcome multiskilling, thereby broadening their range of skills, it is essential that there be some form of incentives. The incentives, in terms of extrinsic rewards at least, are frequently provided by a financial reward system which is centred on skill acquisition (Lawler and Ledford, 1985:33). Some organisations arrange their reward system in points form. If an employee satisfactorily completes each skills-training programme, he/she is awarded a number of points (Akhlaghi and Mahony, 1997:70). The number of points awarded on demonstrated skill acquisition is dependent on an assessment of the overall worth of that particular skill to the organisation or on assessment of skill complexity (Cordery, 1989:15).

2.5.10 Other Steps to be taken

According to Akhlaghi and Mahony (1997:72), other steps an organisation can take to ensure that a suitable ground for the implementation of multiskilling prevails are the following:

- Do not let rumours or misinformation spread – This implies that managers should provide the whole personnel with first hand information on multiskilling.
- Be honest with staff – Honesty involves transparency and tabling out both the advantages and disadvantages of multiskilling.
- Stress the positive aspects to the staff – After having tabled out the advantages and disadvantages of multiskilling, management should then stress the positive aspects of the programme.
- Analyse and qualify the tasks to be considered – Management need to identify the tasks to be considered during the application of multiskilling
- Update or buy new equipment – For multiskilling to be effectively implemented, equipment needs to be updated, so that the workforce could be trained in its utilisation.
- Depersonalise the changes – Management should ensure that multiskilling achieves its purpose of despecialisation.
- Carefully select staff, especially supervisors, for correct skills and aptitude – The supervisors need to be multiskilled first because they are the ones to monitor the multiskilling process for the shop floor employees.

- Get the public relations right – The information on multiskilling that should circulate is the one that is in keeping with the goals of the entire organisation about the programme. It is therefore imperative that management should ensure that the public relations would be the one to communicate positive information about the programme.

2.6. Summary

From the above literature exposition a number of important issues around multiskilling have surfaced. Of importance are the issues raised by Akhlaghi and Mahony (1997), pertaining to the practical steps that need to be taken for the successful implementation of multiskilling in an organisation. These steps indicate clearly that before a multiskilling programme could be embarked on, an organisation needs to have a clear objective or goal and form this generates a mission for all the employees. After this it needs to draw a full business plan and hold discussions with various stakeholders, including trade unions and different staff categories. Furthermore, an organisation needs to analyse and qualify the tasks to be considered for multiskilling. A careful selection of staff for correct skills and aptitude is necessary. Of-the-job and on-the-job training is also raised as a necessity.

What has also emerged from literature is the fact that multiskilling cannot exist as an isolated entity, but rather needs to be backed by other programmes such as training and compensation or reward systems. It has also transpired that job rotation is an indispensable practice whenever multiskilling has been adopted. It has therefore become clear that multiskilling needs to be accompanied by programmes of work design that take account of both technical requirements for functional flexibility and the socio-

psychological requirements of the employees at work. All in all it has transpired from the literature that multiskilling alone cannot be a successful activity without other programmes accompanying it.

Literature study has also shown that multiskilling has a number of advantages and disadvantages for an organisation.

CHAPTER 3

THE DESCRIPTION OF A MANUFACTURING INDUSTRY IN SOUTH AFRICA: HULETT ALUMINIUM (Pty) Ltd.

3.1 Introduction

This chapter focuses on the description of Hulett Aluminium (Pty) Ltd, in which the field of study was conducted. . It is a description of the company's profile, the organisational structure, the aluminium supply chain and the company's core business. It also reflects on the company's attempts to implement multiskilling. The chapter indicates why, when and how multiskilling was embraced by the company, the extent to which it has successfully implemented the programme and the costs and benefits associated with its implementation.

3.2 The Company's History

Hulett Aluminium (Pty) Ltd is South Africa's largest aluminium producer. The company was founded in 1946 as a subsidiary of the international Alcan Aluminium Group. It is South Africa's largest manufacturer of semi-fabricated and finished aluminium products. The first time semi-fabricated products were produced in South Africa on a significant scale was in 1949 when a small plant was opened in Pietermaritzburg in the Edendale site, to make sheet and foil products. In that year production was 60 tons, less than a

morning's production in today's manufacturing facility at Hulett Aluminium. This Edendale site has expanded to include a new cold mill as well as an additional coil coating facility (Hulett Aluminium General Quality Systems Requirements, 2005:5)

According to Timmerman (2005:5), Tongaat-Hulett has been a guiding force behind Hulett Aluminium since acquiring it in 1973. In November 2000 the R2, 4 billion rolled products expansion was officially opened by President Thabo Mbeki. This major investment for Tongaat-Hulett was a significant milestone in its vision of creating an export-orientated aluminium rolling business.

Hulett Aluminium is challenging the industry paradigm of the three large multinationals that dominate the aluminium rolling industry and that control more than 70% of the world's capacity. These multinationals are located close to customers in high cost parts of the world in an industry that has more than 40% excess capacity (Hulett Aluminium Manual, 2005:2).

Timmerman (2005:5) describes Hulett Aluminium as an independent low cost manufacturer of sophisticated high semi-fabricated aluminium products and, as a result of its small worldwide market share, is able to optimise its capacity utilisation and maximise the profitability of its product mix. He further states that the company received the top accolade in the prestigious State President's Award for Export Achievement in 2001, testimony to its phenomenal growth and increasing prominence. Today (2006), it has

over 250 customers in more than 60 countries around the world. The company has approximately 2300 employees altogether.

According to Timmerman (2005:5), the market for the company's products has grown significantly and many different products are produced for all types of industry. Although some automotive products were produced on a small scale over the last decade, it was of no real significance. He goes further to say that in 2001/2002 a market drive was introduced to explore this sector with pleasing results. Furthermore, he states that approximately 10% of Hulett Aluminium total sales is for automotive products and will possibly be second largest market in the sale of aluminium by the end of 2005.

3.3 Organisational Structure of Hulett Aluminium

Hulett Aluminium's organisational structure is arranged in a traditional hierarchic manner, although there are elements of a more modern matrix form, whereby shop floor workers, for instance, have to report across departments (Refer to Annexure B). The divisions that exist within the company are called business units. Outside the core-business, which the business units constitute, there are departments of finance and marketing.

Right at the top of the organisational structure is a managing director. Below the managing director are the directors of various business units of the core business and those of finance and marketing. Within the core business units there are directors of

coated products, sheet, plate and coil products, foil products, operations, human resources and technology.

3.3.1 Director of Coated Products

Reporting to the Director of Coated Products is an area manager: coating line. Below the coating manager are two coating line coordinators. There are also two maintenance engineers reporting to the Area Manager. The maintenance engineers have approximately ten technicians serving under them. The coating line coordinators have six shift leaders reporting to them, who in turn have approximately thirty crew members serving under them.

3.3.2 Director of Sheets, Plate and Coil Products

Serving under the director of sheet, plates and coil products are two manufacturing area managers. Reporting to the manufacturing area managers are technicians, engineers, process controllers, slitting process specialists, artisans, shift leaders and team leaders. Under this category are crew members or shop floor personnel.

3.3.3 Director of Operations

Reporting to the Director of Operations are four area managers. Below these area managers are maintenance, electrical, process and control engineers. Serving under these

engineers are technicians, fitters, shift leaders, electricians and mill coordinators. At the bottom of the hierarchy are crew members and maintenance helpers.

3.3.4 Director of Foil Products

Reporting to the Director of Foil Products are a general manager, manufacturing and maintenance manager and Hulett Aluminium Fabricated Products (Hulafab) managers. Serving under the Hulafab manager are production managers. Reporting to the manufacturing and maintenance managers are production coordinators, maintenance technicians, artisans, shift leaders and foremen. Below this category are crew members or shop floor personnel.

3.3.5 Director of Human Resources

Reporting to the Director of Human Resources are a human resources manager-administration, an industrial relations specialist, a skills development specialist and a training specialist. Serving under these managers and specialists are a human resources officer, an engineering and training officer and clerks.

3.3.6 Director of Technology

Reporting to the Director of Technology are technical and Zero to Production (ZTP) managers. There are five production specialists serving under the ZTP manager. Under

the technical manager are the laboratory and quality assurance managers. Reporting to the laboratory manager are physical testing laboratory supervisor, metallurgical laboratory supervisor and chemical laboratory supervisor. Under each of these supervisors are approximately five laboratory technicians.

3.4 Aluminium Supply Chain (See Annexure C)

The information on the aluminium supply chain for Hulett Aluminium was provided by Mr. L. Makhanya who is a process engineer in the company.

The aluminium that ends up at Hulett Aluminium is mined in Australia as aluminium ore or Bauxite. Mined Bauxite then gets exported to various countries around the world, including South Africa. In South Africa Bauxite is taken to Alusaf in Richard's Bay for processing. At Alusaf a process called electrolytic reduction is used to separate aluminium from ore. The end product of this process is an aluminium block or ingot, which Alusaf either exports or sells locally to Hulett Aluminium for further processing.

Hulett Aluminium has various operations and finishing departments as indicated on Annexure C. when ingots arrive at Hulett Aluminium they are hot-rolled until they are in a coil form. The resultant coil is then processed at various cold mills which all form part of the core business of the company. From here the coil is taken to various finishing departments. The major end-products of the coil are plates, foil stock, can end and tread

bright. These products are then supplied to the customer in different tempers and alloys, depending on the nature of the order by the customer.

3.5 Scope of Services

Hulett Aluminium manufactures aluminium of various alloys and tempers in the configurations general sheet, clad sheet, coil, plate, circles, coil and foil products into a range for both local and international markets.

3.5.1 Product Range

Hulett Aluminium manufactures various aluminium products for local and international customers. These products are manufactured in accordance with the requirements of the customer and as such are supplied in different tempers and alloys. The following are some of the products the company manufactures:

- Foils for industry and commercial products – the company produces a range of downstream products, including rigid foil containers, aluminium composite panels, roll formed building sheet and high pressure cylinders.
- Sheet, plate, sheets for ship building material and automotive sector – Hulett products are made to internationally recognised standards such as AA, EN and JIS. The flat rolled sheet and plate products are manufactured to suit the requirements of distributors, stockists and selected end users.

- Aluminium foil – Hulett's foil meets the special packaging needs of various markets such as converter, electrical, fin stock, domestic foil, industrial foil and rigid foil containers. Hulett also produces aluminium paste pigment from which a variety of paints and printing ink are made.
- Can Stock – Hulett has supplied coated and uncoated can end and tab stock products. Coated Can End Stock Coil is available in a variety of alloy and colour range, depending on the requirements by the end user. Coated Tab Stock is made as one or both sides coated products and can be provided with coatings.
- Building and Painted Products – Hulett supplies a wide range of superior flat building and painted products for the manufacture of roofs, gutters, fascias, panels, components, cladding, ceiling and many more.

3.5.2. Safety, Health and Environment Policy

Hulett Aluminium is committed to operating its plants safely, protecting the health of its employees and wider community and the prevention of pollution or minimizing the impacts on the environment. Every employee is responsible and accountable for safety, health and environmental issues.

The Safety, Health and Environment (SHE) management system encompasses identifying, evaluating and controlling SHE related aspects and risks associated with all the activities at Hulett Aluminium. It also entails ensuring that all non-conformances or incidents are effectively addressed in order to prevent a similar recurrence. The

company's SHE rules have been developed in order to encourage all employees to participate in the safety, health and environmental management system. They have also been developed to improve safety, health and environmental awareness and competence through effective training and development (http://www.hulamin.co.za). The SHE is directly linked to multiskilling as the employees at Hulett Aluminium need to undergo training for the purposes of improving their awareness about safety, health and environmental issues.

3.5.3. Quality Policy

Hulett Aluminium is committed to the operation of a Quality Management System, complying with the requirements of ISO/TS16949:2002, and other statutory and regulatory requirements, as well as complementary system standards. The purpose is to ensure those customers' requirements and expectations with regard to product quality levels and service are consistently met with the focus of continual improvement (Hulett Aluminium General Quality Systems Requirements, 2005:13).

In order to achieve this objective Hulett Aluminium applies an Integrated Quality System (IQS) which provides for the systematic control and verification of all identified processes and measurements to ensure the effectiveness of the quality management system. The Director: Remelt, Rolling Operations and Manufacturing, the Director: Sheet and Plate products and the Director: Coated Products are responsible for the overall implementation of the Quality Management System and for specifying and directing the

objectives, goals and standards of the company. However, for the purpose of ensuring the requirements of the Quality Management Systems are met, the Quality Management Rolled Products has been appointed as the management representative for quality to advise on and monitor the implementation of the quality management system on behalf of the directors (Hulett Aluminium General Quality Systems Requirements, 2005:13).

In keeping with quality policy, Hulett Aluminium introduced multiskilling. One of the advantages of multiskilling for the company is that it encourages teamwork. The rationale behind having a multiskilled team is to have a team that is competent in all the skills required to complete a job. According to Harris (1999:8) one of the advantages of a team-based production system is "...the improvement in efficiency, production and quality." So, the implementation of multiskilling at Hulett Aluminium enhanced the company's quest for quality products.

3.6. Multiskilling at Hulett Aluminium

(All the information on multiskilling at Hulett Aluminium is based on the company's Skills Based System Manual of 2000 and an interview with one of the company's managers – Mr Shoba (Training Specialist) and one of its directors – Mr. K. Mshengu (Director: Human Recourses)

Hulett Aluminium decided to embrace multiskilling in the year 2000. It was introduced alongside broad banding, which is the amalgamation of small separate units into larger

units. An appropriate communication strategy was devised prior to implementation. Management and trade unions undertook to use their best endeavours to make crew members or shop floor workers aware of multiskilling and all its implications. Multiskilling was to be implemented within the framework of the new skill based system. Although the target was all the departments, priority was given to the operations division of the company. The phasing in of multiskilling was going to start with New Equipment, Rolled Products, Hulett-Hydro Extrusions departments over a period of three to five years.

3.6.1 Agreement between Management and Trade Unions

Management and trade unions agreed that all elements of multiskilling would apply at Hulett Aluminium, and that neither party would adopt one element of this agreement without adopting all the others; namely :

- Appropriate skills definition
- Training modules
- Multiskilling
- Multitasking

Furthermore, the parties agreed to recognise practical job-related skills within specific bands and skills acquired over and above these bands, where these skills fall within the Skills Based System.

Parties also agreed that assessment and testing would take place at the workplace areas. The purpose of assessment would be to determine the competency level of employees against specific criteria required to perform the tasks as well as other relevant training modules. Area managers or their nominees and qualified assessors would be responsible for competency testing. Assessors would come from the ranks of operators and artisans and would be competent in carrying out their tasks.

3.6.2 Employment Security

Hulett Aluminium has undertaken not to retrench any employee as a direct consequence of any arrangements implemented in terms of the agreement during the phasing in of the Skills Based System, unless such retrenchment is on a voluntary basis or unless external circumstances beyond either party's control impact upon the company.

The company has also undertaken at all times to use its best endeavours to avoid retrenchments by considering the following initial options:

- Re-deployment to other positions
- Voluntary retrenchment
- Voluntary early retirement

3.6.3 Training

After having implemented multiskilling and broad banding, Hulett Aluminium committed itself to applying the following principles with regard to training:

- "The training needs of individuals will be determined and be aligned to specific tasks, knowledge and skills requirements of a particular department and work area.
- The company is committed to providing an opportunity for the appropriate training to all employees in their respective work areas.
- The company subscribes to the concept of recognising prior learning of practical job related skills and knowledge, which is a process to give recognition to workers for the skills and knowledge that they already have.
- Training will be provided on grounds of departmental needs, demonstrated ability to learn and apply skills, recognising the development of full potential, where practical.
- Employees have agreed and will be willing to undergo training to acquire those skills necessary to perform all tasks falling within the multiskilled system as may be required from time to time.
- Training will as far as possible be conducted on the job.
- Workshop training will be conducted for theoretical and practical training programmes.

- Training modules will include details of the necessary experience and a theoretical knowledge and practical tests which may be required as proof of competency."

3.6.4 Payment of Wages

Hulett Aluminium pays wages at a rate applicable to the particular band in which an employee actually works and in accordance with pay scales both vertical and horizontal, subject to the acquisition of defined skills. Payment for acquiring skills is done as follows:

a) Skills Acquired Vertically

Once an employee is fully competent at the next skill level higher, he/she qualifies for 15% of the wage gap between the rate for the band he/she currently occupies and the rate for the band at the next level higher. Once an employee has acquired skills for the next level higher he/she will earn 15% of the gap. An employee will be paid at the next higher band rate in full when he/she is required to perform at the next higher band for a period not less than one shift. If it does happen that an employee is fully competent to function in a position that is more than his/her current grade, the employee will be paid 15% of the gap between that position and the next level lower.

b) Skills Acquired Horizontally

Once an employee is fully competent on the agreed modules he/she will qualify for 20% and 25% of the wage gap between the rate for the band he/she currently occupies and the rate for the band the next level higher.

3.7 Summary

This chapter has focused on the South African manufacturing company of the researcher's choice: Hulett Aluminium. It has reflected on the company's profile, the organisational structure and the company's core business. It has also touched on the adoption multiskilling by the company. The reasons behind the introduction of multiskilling, the manner in which the programme was introduced and accommodated, the problems experienced in its adoption, the costs and benefits associated with the introduction of multiskilling, the current position of multiskilling and the future considerations of the programme were also addressed.

CHAPTER 4

RESEARCH DESIGN : FIELD STUDY

4.1 Introduction

According to Haralambos and Holborn (2004:864), research methodology is concerned with both the detailed research methods through which data are collected, and the more general philosophies upon which the collection and analysis of data are based. As far as they are concerned, any academic subject requires a methodology to reach its conclusions: it must have ways of producing and analysing data so that theories can be tested, accepted or rejected.

This chapter focuses on a brief description of the research study site, the research method, research pattern, questionnaire design and distribution, questionnaire collection and data analysis and interpretation. The manner in which hypotheses were approved or disapproved is also indicated clearly in this chapter.

4.2 Purpose of the Study

Programmes of multiskilling generally involve workers in a particular occupation, craft or skill category progressively picking up the capacity to perform additional distinct tasks, usually performed by workers in another functional or occupational area within

that organisation. According to Cordery (1989:13), multiskilling is "the process of increasing the skill repertoire of workers in such a way as to improve the ability of an employee to work in more than one narrowly defined occupational speciality." The purpose of this study therefore was to investigate the extent of the adoption of multiskilling by the South African manufacturing industry. It was also the purpose of this study to establish the benefits associated with multiskilling and the role it could play in filling the gap in cases of advanced technology, absenteeism, employee demotivation, labour turnover, costs etc.

4.3 Problem Statements

The study was therefore carried out using Hulett Aluminium as an example of a South African manufacturing company. The purpose of the study was to investigate the following problems concerning multiskilling at Hulett Aluminium:

- Preparation of a suitable environment for the application of multiskilling
- Effects of new, advanced technology on multiskilling – how new, advanced technology requires that employees be trained to be able to cope with it.
- Effects of absenteeism due to workshops and training programmes on multiskilling in determining the application of multiskilling.
- Productivity levels – the application of multiskilling as a way of raising the company's productivity levels.
- Labour turnover – the introduction of multiskilling as a way of dealing with the problem of labour turnover.

- Labour costs – the contribution of multiskilling to reducing labour costs.
- Trends towards self-managed groups – the implementation of multiskilling to encourage team work.
- Boredom and job dissatisfaction – the application of multiskilling to deal with problems associated with boredom and job satisfaction.
- Employee demotivation – the application of multiskilling to bring about worker motivation.
- Industrial conflicts – the introduction of multiskilling as a way of reducing industrial conflicts.

4.4 Research Objectives

The overall objective of the research was to find out whether the theoretical issues raised by various authors about miltiskilling do actually apply in reality to Hulett Aluminium. The specific objectives were:

1. To establish the extent to which Hulett Aluminium prepares a suitable environment for the application of multiskilling.

2. To establish the effects of new, advanced technology in determining the application of multiskilling.

3. To establish the ways by which organisations maintain a multiskilled workforce.

4. To establish the activities within organisations that back up multiskilling

5. To find out the impact of multiskilling on productivity.

6. To establish the extent to which multiskilling contributes to

6. 1 alleviation of the problem caused by absenteeism due to workshop attendance and training programmes.

6.2 reduced labour costs

6.3 reduced industrial conflicts

6.4 reduced labour turnover

6.5 increased job satisfaction

6.6 increased level of motivation

7. To establish the overall costs and benefits associated with the implementation of multiskilling

8. To establish if there are any differing opinions between management and shop floor employees regarding issues around multiskilling.

4.5 Research Hypotheses

Research hypotheses are the assumptions a researcher has arrived at which predict the outcome of his research. These assumptions are as follows:

1. Hulett Aluminium does not first prepare a suitable environment for multiskilling before implementing it. The company does not consult with various stakeholders so that everybody within the organisation could accept and own the practice.
2. Hulett Aluminium ensures that there are motivational programmes, incentive schemes, training as a means of entrenching multiskilling.
3. Multiskilling alleviates the problem of absenteeism at Hulett Aluminium.

4. Labour turnover has increased at Hulett Aluminium as a result of multiskilling
5. By embracing multiskilling Hulett Aluminium is sure to witness increased productivity. Productivity levels are lower at Hulett Aluminium compared to other aluminium-producing companies abroad.
6. Multiskilling ensures the reduction of labour costs.
7. Multiskilling empowers the workers to easily cope with the ever changing and advancing technology and is a viable option for dealing with the problems the industry is facing.
8. Multiskilling is expensive in the short run, but it is a good investment for an organisation in the long run.
9. There is no difference between management and employees with respect to their perceptions about multiskilling.

4.6 Research Method

A survey method was used as a form of research in this study. Zikmund (1997:202) describes a survey as "a research technique in which information is gathered from a sample of people by use of a questionnaire; a method of data collection based on communication with a representative sample of individuals."

A survey method was chosen because of its advantages. According to Zikmund (1997:203), surveys provide quick, inexpensive, efficient and accurate means of

assessing information about the population. On their part, McCormack and Hill (1997:26) give the following as advantages of a survey research method:

- "It is a versatile method, which can be applied to almost all types of research
- It enables the analysis of data to be based on the laws of mathematics and statistics, arguably reducing the likelihood that all considered conclusions will be drawn by the researcher.
- It is a cost-effective method for finding out about large populations
- It can be administered in a variety of different ways, enabling geographically scattered respondents to answer the same questions
- It can be constrained in scope, to meet budgetary constraints sacrificing the value of the findings."

Much as there are advantages of a survey method, it is worth noting that there are also disadvantages. Zikmund (1997:206) cites the following as disadvantages of a survey method of research :

- "Non-response error – few surveys have 100 percent response rate
- Response bias – whereby respondents tend to answer in a certain direction, i.e. when they consciously or unconsciously misrepresent the truth.
- Deliberate falsification – whereby respondents deliberately give false information or answers
- Unconscious misrepresentation – whereby even when a respondent is consciously trying to be truthful and cooperative, response bias can arise from the question format, question content or some other stimulus."

Despite the disadvantages associated with a survey research method, the researcher pursued a descriptive survey as a research method. By descriptive survey or normative survey is meant a form of research designed to describe the characteristics of a population being studied (Wimmer and Dominick, 1994:108). The characteristics of a population being studied usually include enquiring about the respondents' knowledge, attitudes, practices, current conditions, opinions, perceptions or attitudes concerning a given situation. The ultimate goal is to learn about a large population by surveying a sample of that population; hence this approach is called a descriptive survey or normative survey (Leedy and Ormrod, 2005:183). The researcher therefore opted for this survey method as a way of using a sample of the population to learn more about the entire population.

All research requires a design of some type – form very simple surveys of only a few people to nationwide studies covering complex issues. All procedure, including variables, samples and measurement instruments, must be selected or designed in light of their appropriateness to the research questions (Wimmer and Dominick, 1994:26). Durrheim, in TerreBlanche and Durrheim, (1999:29) describes a research design as a plan that serves as a bridge between the research questions and the execution or implementation of the research. Putting it in the words of Bless and Higson-Smith (1995:63), a research design is "a specification of the most adequate operations that should be performed in order to test a specific hypothesis, under given conditions."

The importance of research design is in facilitating the smooth execution of the various research operations, thereby making research as efficient as possible and yielding maximum information with minimum expenditure of time, effort and money (Kothari, 1990, 40). It should include the following:

- "The study design per se
- The logical arrangements that the researcher proposes to undertake
- The measurements procedures
- The sampling strategy
- The frame analysis
- The time frame" (Kumar, 1996:16)

The research took the form of qualitative and quantitative methods. Qualitative research aims at the development of theories and understanding, with the sole objective of promoting better self-understanding and increasing insight into the human condition (Garbers, 1996:283). On its part, quantitative research is aimed at testing theories, determining facts, statistical analysis, demonstrating relationships between variables and prediction (Garbers, 1996:282). There is an on-going debate about the differences between and the relative advantages of qualitative and quantitative methods of research.

Trochim (2005:8) argues, "to say that one or the other [research methodology] is better is simply a trivializing of what is a far more complex topic than a dichotomous choice can settle." He further states that both qualitative and quantitative research rests on rich and varied traditions that come from multiple disciplines and both have been employed to

address almost any research topic. There is therefore value in consciously combining both qualitative and quantitative methods of research, in what is referred to as a mixed approach (Jackson and Niblo, 1999:2).

This research was carried out on the premise that qualitative and quantitative research methods are complementary and that when these methods are used in conjunction they may provide complementary data sets which together give a more complete picture than can be obtained using either method singly. The researcher first used qualitative research by conducting interviews with two managers at Hulett Aluminium. This was done in order to assist the researcher to generate important questions to be included in the questionnaire for distribution to the respondents.

So, the initial qualitative research helped in the design of the quantitative research which took the form of a questionnaire. As Nau (1995:3) maintains, "...qualitative research, when used first in what might be termed a bimodal process, could help to facilitate serendipitous findings, raise unexpected questions, and identify topics the investigator might not have otherwise considered."

4.7 Study Site

The researcher focused on one big South African manufacturing company, Hulett Aluminium, based in Pietermaritzburg in KwaZulu-Natal, and used it as a case study. According to Garbers (1996:288), a case study is an example of an in-depth description

and explanation of the specific phenomenon, group or event within the context of a specific reality, environment or meaning. Hulett Aluminium was chosen as a case study because, firstly, it is one of the biggest manufacturing companies in South Africa. Secondly, the company was chosen for reasons of easy accessibility, cost effectiveness and time saving on the part of the researcher. Thirdly, and lastly, the company was chosen because it tried to implement multiskilling in the year 2000, and ever since it has been struggling to find footing with this programme. The recommendations the researcher advances at the end could help this company and other manufacturing companies in their quest for the adoption and successful implementation of multiskilling.

4.8 Interviews

The researcher made an arrangement with one top-level manager and one middle-level manager, both from the skills development section of the Human Resources Department. The interviews took place during the October of 2005. The interviews were arranged such that the researcher could get as much information for the questionnaire design as possible. Through these interviews the researcher intended to get in-depth information about the company's operations in relation to the subject under research and used the information later, to understand the assumptions that underlie the responses from the respondents.

4.9 Sampling

According to Parasuraman (1991:474), sampling is the selection of a fraction of the total number of units of interest to decision-makers, for the ultimate purpose of being able to draw general conclusions about the entire body of units. McDaniel and Gates (1998:301) take the sampling issue further by stating that the process of designing a sample involves seven steps, namely: the defining of the population of interest; the choosing of data collection method; the choosing of the sampling frame; the selection of the sampling method; the determining of the sample size; the developing of operational procedures for selecting sampling elements; and the execution of operational sampling plan.

4.9.1 Defining the Population of Interest

Bless and Higson-Smith (2000:84) maintain that the term "population" refers to a set of objects, whether animate or inanimate, which the researcher is focused on, and about which the researcher wants to determine particular characteristics. It can also be viewed simply as a large pool of cases or elements from which a researcher draws a sample (Neuman, 1997:202). The population of interest for this research were the employees of Hulett Aluminium (Pty) Ltd, based in Pietermaritzburg.

4.9.2 Data Collection Method

According to McDaniel and Gates (1998:305), the selection of a data collection method has a considerable impact on the subsequent steps in the sampling process. For this study, data collection was done through a questionnaire. The researcher requested two managers, who had assisted him during the preparations for the questionnaire design, to help with the distribution of the questionnaires to the managers and shop floor employees at Hulett Aluminium.

4.9.3 Sampling Frame

The sampling frame can be defined as "a list the population elements or members from which we select units to be sampled" (McDaniel and Gates, 1998:306). This research focused on the managers and shop floor employees at Hulett Aluminium.

4.9.4 Sampling Method

According to McDaniel and Gates (1998:307), the selection of a sampling method depends on the objectives of the study, the financial resources available, time limitations and the nature of the problem under investigation. They further state that there are two types of sampling methods: the probability sampling method and the non-probability sampling method. Probability sampling is based on random selection: a controlled procedure that ensures that each population element is given a known, nonzero

probability of selection (Cooper and Schindler, 2001:166). Non-probability sampling is based on the inclusion of elements from the population selected in a non-random manner (McDaniel and Gates, 1998:308).

For the purpose of this research, non-probability sampling was chosen, because of the nature of the study and the advantages associated with the method. In particular, convenience sampling was used by the researcher. According to Kalton (1983:90), convenience sampling is one of the most common types of non-probability sampling, not because such sampling makes it easy to recruit, but because the researcher uses whatever individuals are available, rather than selecting from the entire population. The researcher opted for convenience sampling because he was dealing with a population that was difficult to access. As Kalton (1983:90) puts it, "[Convenience sampling]...can be extremely valuable for hard-to-reach populations." For the researcher to succeed with his sampling he was assisted by some managers from Hulett Aluminium. The same managers were instrumental in collecting the questions from those managers and shop floor employees who had completed the questionnaires.

4.9.5 Determining Sample Size

The researcher distributed the questionnaires, 2 to top-level managers, who are five in total, 4 to middle-level managers, who are nine in all and 100 to shop floor employees, with a total population of four hundred and sixty five. The two managers who had assisted during the preparations for the questionnaire design were very helpful in the

distribution of questionnaires to the Hulett Aluminium personnel. They volunteered to talk to the managers and shop floor employees about the questionnaires and then request them to complete the questionnaires. The reason why the researcher distributed the questionnaires to both managers and shop floor employees was that he wanted to establish if these two parties were sharing the same understanding of the issues around multiskilling. The response rate by the top-level managers was 100%, 100% also by the middle-managers and 52% by the shop floor employees. This means that out of a total sample size of one hundred and six, fifty eight responded which accounted for an overall percentage of fifty five (55%).

4.9.6 Developing Operational Procedures for Selecting Sample Elements

The sample selection procedures for the data collection phase of the research should specify whether a probability or non-probability sample is being used (McDaniel & Gates, 1998:311). For this study, probability sampling was used and every manager and shop floor employees had a chance of being selected.

4.9.7 Executing the Sampling Plan

According to McDaniel and Gates (1998:311), the execution of the sampling plan should include adequate checking to make sure that data collectors are following specified procedures. The managers that had assisted the researcher with the distribution of the questionnaire were the ones who helped with the collection. The advantage the researcher

had was that these managers were in a better position to get cooperation from the respondents in terms of the completion of the questionnaires. The managers randomly distributed the questionnaires to whichever manager or shop floor employee they could get hold of. All the six questionnaires that were meant for the managers were successfully and randomly distributed, so also were the one hundred questionnaires that were meant for the shop floor employees

4.10 Questionnaire Design

A questionnaire is a standard method for collecting data. It generates information in a systematic manner, by giving all respondents questions in a similar manner and recording their responses methodologically (Hall and Hall, 1996:97). In the words of Parasuraman (1991:220), "a questionnaire is an instrument used for eliciting and recording responses in many, but not all, research projects employing the questioning approach." He further states that the use of a questionnaire has an advantage in that it provides for the reliability of responses and reduction and elimination of differences in the manner in which questions are phrased, asked and presented.

The first step in designing a questionnaire is to define the problem to be tackled by the survey and hence to decide on what questions to ask (Seale, 2004:73). The piece of advice that Seal gives is that the researcher should avoid the temptation of trying to cover too much, asking everything that might turn out to be interesting. He maintains that lengthy, rambling questionnaires are demoralising for the respondents and should not be

longer than is absolutely necessary for the purpose (Seal, 2004:73). Leedy and Ormrod (2005:190) have provided guidelines for developing a questionnaire that encourages people to be cooperative and yields responses, as follows:

- "Keep it short
- Use simple, clear, unambiguous language
- Check for unwarranted assumptions implicit in your questions
- Word your questions in ways that do not give clues about preferred or more desirable responses.
- Check for consistency
- Determine in advance how you will code the responses
- Keep the respondents' task simple
- Provide clear instructions
- Give a rationale for any items whose purpose may be unclear
- Make the questionnaire as attractive and professional as possible
- Conduct a pilot test
- Scrutinise the almost-final product carefully to make sure it addresses your needs."

As a way of collecting answers to the research questions, a questionnaire was designed. A questionnaire design is a structured sequence of questions designed to draw out facts and opinions and which provides a vehicle for recording the data (Hague and Jackson, 1999:14). McDaniel and Gates (2001:289) define a questionnaire as, "a set of questions designed to generate the data necessary for accomplishing the objectives of the research

project. Some of the advantages of questionnaires are that they are cheap, relatively flexible and can be used to reach a very large number of people (Moore, 1987:19-20). They can be designed to provide a degree of anonymity or to enable the researcher to follow up certain points at another time.

Parasuraman (1991:220) mentions two different types of questionnaires, namely the non-structured questionnaires and the structured questionnaires. Non-structured questionnaires are made up of open-ended questions or free-answer questions. Zikmund (1997:381) states that open-ended response questions are the most beneficial when the researcher is conducting exploratory research, especially if the range of responses is not known. As far as he is concerned, these questions can be used to learn what words and phrases people spontaneously give to the free-response questions. He further maintains that open-ended questions are advantageous in that respondents are free to answer with whatever is uppermost in their thinking, and by gaining free and uninhibited responses, the researcher may find some unanticipated reaction towards the topic.

With regard to this research, the questionnaire was designed to gather quantitative data. Closed-ended statements or fixed-alternative statements were used for this purpose. These are the commonest types of structured statements whereby the respondent is given a statement and required to respond by choosing between a number of alternatives, hence the name sometimes given to these questionnaires is multiple-choice questionnaires (Moore, 1987:17).

Closed-ended statements were chosen over open-ended ones because they take less time and are easier for the respondents to answer. Moreover, they provide a range of answers and thus reduce the chances of the respondent overlooking something (Zikmund, 1997:381). They also reduce the possibility of obtaining ambiguous answers.

A Likert scale was used, whereby respondents were asked to agree or disagree with a series of statements. Thirty statements were reflected on the questionnaire and these covered all the areas the researcher wanted to explore in relation to the research objectives. Five possible responses were provided to the respondents and the respondents were asked to choose one from the five. The five ways of responding were: **Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree**. Numbers 1 to 5 respectively were allocated for these responses. After the questionnaire had been designed, copies were distributed to the employees at Hulett Aluminium.

4.11 The Questionnaire Used in this Study (See Annuxure A)

The statements that were included in the questionnaire were designed with the sole purpose of ensuring that research objectives were met. Before these statements could be phrased, interviews were conducted with two managers at Hulett Aluminium, from the skills development section of the Human Resources Department. After this exercise, statements were formulated in consultation with the supervisor. The statements took the form of close-ended statements and required the respondents to choose from five possible responses.

Statement 1

All relevant stakeholders were part of the adoption of multiskilling

The statement was made with the sole aim of establishing whether or not various relevant stakeholders were made part of the adoption of multiskilling by Hulett Aluminium in the year 2000, when this programme was being adopted. For any new programme that an organisation intends to introduce, it is imperative that all stakeholders be made part and parcel of the preparations for its introduction. This will enable those involved in the adoption of the programme to own it and defend its existence within the organisation.

Craig and Hussey (1982:3) are of the opinion that companies need to be open with their employees because good relationship between management and employees would be improved if communication could only be made effective. They continue to argue that while companies are secretive, employees will be suspicious and there will be no substantial element of trust or cooperation in the workplace. On its part, the Management Action Guides (1993:74) maintains that all relevant stakeholders in an organisation need to be involved in the discussions and negotiations on matters affecting the organisations, and these will include "... how changes in the working practices are to be agreed on and implemented, local rewards systems and so on."

These viewpoints therefore indicate that it is essential that all the relevant stakeholders be involved in the decision-making processes within a particular organisation. Their

participation is the mental and emotional engagement that encourages them to contribute to group goals and share responsibility for them (Davis and Newstrom, 1989:232).

Statement 2

Everybody within the organisation became aware of what multiskilling entails

The reason behind this statement was to establish whether or not all the employees at Hulett Aluminium were aware of what multiskilling was all about. This would surely emanate from the company's goal setting strategy for multiskilling. Wexley and Baldwin (1986:504) argue that participation in goal setting by all relevant stakeholders in an organisation is very critical as a means of getting agreement to the setting of even higher goals. It is important therefore for any organisation intending to introduce multiskilling to explain to the satisfaction of everybody in that organisation what this programme is all about. This will make it clear to everybody what they need to achieve to meet the company's objectives.

Horbury and Wright (2001:69) have designed what they call "a checklist for implementing multiskilling." They maintain that the checklist is directed at those decisions and responsibilities that are likely to reside with management and the implementation team and in particular those responsible for planning and implementing organisational change. In their checklist, point number four reads, "Has the staff been consulted by management on multiskilling proposal?" All Horbury and Wright are trying

to emphasise here is the importance, on the part of management and multiskilling implementation team, of ensuring that everybody within the organisation is fully involved in the implementation of multiskilling and is fully aware of what this programme entails.

Statement 3

Everybody within the organisation warmly welcomed the adoption of multiskilling

The aim behind this statement was to establish whether or not the various stakeholders within Hulett Aluminium cooperated positively in the adoption of multiskilling. Usually when a new programme is being introduced in an organisation it gets greeted with mixed feelings. Some welcome it as they see that it is going to add value to the organisation and also advantage them insofar as increased productivity, improve skills and better salary. Some, however, get threatened by the new programme as they view it as something that will put their job security into jeopardy.

Horbury and Wright (2001:14) argue that enrolling support is basically about convincing individuals within the organisation to cooperate and participate in the proposed changes. For them, enrolling support will be more effective if the consultation process has meant that the decisions made are perceived as adequate and appropriate. They further maintain that three strategies are required to persuade employees and unions to accept multiskilling, these being:

- "Full consultation – which helps with organisational awareness, encouragement of participation and empowering of the workforce
- Incentive schemes
- An understanding of the economic climate."

Statement 4

It became easy for the organisation to apply multiskilling

The purpose of this statement was to find out the extent to which the challenges which the company found itself confronted with in the process of multiskilling introduction were easy or difficult to overcome. Any new programme that gets introduced to the organisation is bound to have challenges. Some workers feel threatened as they become unsure the effects of the new programme on their permanent jobs. Sometimes trade unions find themselves acting against the very agreement they were part of at the inception of a programme.

Statement 5

Top-level management was the main target for multiskilling

The purpose of this statement was to find out whether or not top-level management at Hulett Aluminium was the sole target as multiskilling was being introduced.

Statement 6

Middle-level management was the main target for multiskilling

This statement was generated with the sole purpose of finding out whether or not middle management was the main target as multiskilling was being introduced.

Statement 7

Shop floor employee were the main target for multiskilling

This statement was aimed at establishing whether or not the shop floor employees were the main target as multiskilling was being introduced.

Statement 8

The organisation is still grappling with some problems pertaining to multiskilling

The purpose of this statement was to find out the Hulett Aluminium personnel in general if they feel that there are still problems that the company still needs to address with regard to multiskilling. If there are problems that the company still needs to address the statement sought to establish the seriousness of these problems.

Statement 9

Training is an essential tool for multiskilling to be effective

The argument by Yee (1994:17) is that for multiskilling to be effective a proper training system must be in place to equip employees with relevant skills identified to meet both individual and organisational needs. It was therefore the purpose of this statement to find out whether the Hulett Aluminium personnel in general viewed training as an essential tool for effective multiskilling.

Statement 10

Multiskilling alleviates the problem of absenteeism

According to Cordery (1989:15), multiskilling "gives room for such important components of theoretical perspectives on the humanisation of work as job enrichment and socio-technical systems and might therefore be expected to contribute to such desirable individual and or organisational outcomes as increased job satisfaction, motivation and lowered absenteeism and turnover. On his part, Hendry (1988:36) argues that employee flexibility is one of the key benefits of multiskilling, in that individuals become competent in several tasks, and therefore can move from one job to the other to provide cover for absence and training. Generating this statement on absenteeism therefore was to find out the extent of the contribution of multiskilling to alleviate this problem within the organisation.

Statement 11

A multiskilled workforce easily copes with new, advanced technology

Carmichael and Macleed (1993:143) argue that if workers are skilled at more than one task before technical change occurs, and if the change increases demand for workers in other jobs at the firm, it is in the firm's interest to transfer these workers to other jobs. It was the purpose of this statement to find out how the Hulett Aluminium personnel view

the importance of multiskilling in providing a solution to the workers to cope with the new, advanced technology.

Statement 12

Multiskilled employees need appropriate resources (e.g. proper equipment) for the application of their skills.

Rouiller and Goldstein (1993:377) are of the opinion that organisations need to create a supportive climate for their workers, to make sure that those that have been trained are accorded an opportunity to apply their learned skills. They further state that after training employees should be encouraged to try new skills and that managers should make sure that the appropriate tools, materials and resources needed are available when the trainees return to work. It was against this background that this statement was made, to ascertain whether the Hulett Aluminium personnel felt that appropriate physical resources were essential in order for the multiskilled workforce to apply their skills.

Statement 13

A multiskilled workforce has a broad knowledge of the whole work of the organisation

The assertion by Morita (2002:2) is that if employees are multiskilled they become equipped with a broad knowledge of the whole work of the organisation, which enables them to make better decisions concerning the ways to cope with irregular and emergent events. The purpose of this statement then was to verify the assertion that a multiskilled workforce has a broad knowledge of the whole work of the organisation. In other words, the statement sought to find out from the Hulett Aluminium personnel whether they knew the multiskilled workforce as having a broad knowledge of the whole work of the organisation or not.

Statement 14

Multiskilling enhances employee flexibility, enabling individuals to be competent in several tasks

This statement was made against the claim made by Cordery (1989:13) that one of the methods of enhancing labour flexibility is the introduction of multiskilling, which so

equip employees that they become competent in a variety of tasks within the organisation. It was raised to ascertain the extent to which the claim is true with regards to Hulett Aluminium.

Statement 15

Multiskilling improves worker efficiency

According to Akhlaghi and Mahony (1997:66), the whole organisation benefits from multiskilling in the sense that the flexible and efficient workforce provides cover, quicker response to meet customer needs, and that the more multiskilled the workforce is, the more efficient it becomes. The purpose of this statement therefore was to establish the extent to which multiskilling improves worker efficiency and the extent to which this has been true with Hulett Aluminium.

Statement 16

Multiskilling removes departmental or unit barriers

The argument by Cordery (1989:14) is that multiskilling results in job classifications and pay structures becoming unified across different functional or skill areas and this making it potentially easier for employees to move across different work areas or

aggregations of tasks in the course of their employment. What this implies, according to him, is that when workers are multiskilled they become free of departmental or unit confinement and can easily and freely move across departments or units. This statement was generated with the sole aim of establishing the extent to which multiskilling removes departmental or unit barriers at Hulett Aluminium.

Statement 17

Multiskilling encourages teamwork

Tremblay (2003:11) claims that as teams work close to one another, this results in increased multiskilling and as multiskilling increases, the teams are brought closer to one another. The closer the teams are to one another, the more blurred the boundaries become between specializations and this leads to a reduction in the exclusive fields of the skilled workers. This statement was raised to find out how multiskilling has contributed to the encouragement of teamwork at Hulett Aluminium.

Statement 18

Multiskilling contributes positively to Total Quality Management

Thompson and Strickland (2003:395) define Total Quality Management (TQM) as a philosophy of managing a set of business practices that emphasise continuous

improvement in all phases of operations, 100 percent accuracy in performing activities, involvement and empowerment of employees at all levels, team-based work design, benchmarking and fully satisfying customer expectations. They maintain, "while TQM concentrates on the production of quality goods and the delivery of excellent customer service, it is more successful when it is extended to employee efforts in all departments. If multiskilling contributes to teamwork, worker efficiency, labour flexibility, it goes without saying that it does contribute positively to TM. This statement on multiskilling in relation to TQM was raised to establish the extent to which multiskilling has positively contributed to TQM at Hulett Aluminium.

Statement 19

Multiskilling contributes to increased organisational labour productivity

The purpose of this statement was to establish whether or not multiskilling does contribute to increased organisational labour productivity. The statement was made against the claim that the increase in the ratio of multiskiled workers in the firm has a positive impact on the growth of the firm's labour productivity, and that the analyses show that labour productivity increases by one percent with ten percent increase in multiskilling ratio (Ki Seong Park, 2004:1)

Statement 20

Multiskilling reduces organisational overall costs

The argument by Cross (1986:27) is that multiskilling offers one important route both to reduce costs and improve performance, which is currently reshaping an increasing number of engineering and production departments. The purpose of this statement was to establish the extent to which multiskiling contributes to the reduction of the organisation's overall costs.

Statement 21

Multiskilling reduces industrial conflicts

There is a claim in favour of developing a multiskilled workforce that suggests that a higher level of functional flexibility will result in reduced industrial conflict (Cordery, 1989:17). It is against this claim that this statement was made, to find out the extent to which multiskilling leads to the reduction of industrial conflicts.

Statement 22

Multiskilling is very expensive and costly for the organisation

The purpose of this statement was to find out the truth behind the claim that multiskilling is very expensive and costly for the organisation, at least in a short term. This claim has been made by Van Harm (1987:29) who maintains, "to come up with a multiskilled workforce can cost a firm a lot over a short term, as it has to spend a lot of money in training programmes. The firm also loses a lot because the whole operation process gets disturbed during the training process."

Statement 23

Multiskilling makes workers to lose a sense of specialisation

Cordery (1989:20) argues that a multiskilled workforce may complain of only being able to perform superficial social contacts due to the regular job rotation involved and might also perceive that they have little freedom in being able to choose the job or task they carry out. The same employees, Cordery claims, could feel a sense of insecurity and loss of status due to their de-specialisation. It is against this argument that this statement was made, to find out whether the multiskilled workforce do really complain about de-specialisation or not.

Statement 24

Multiskilling makes the workforce to lose self-esteem

The purpose of this statement was to verify the accuracy of the claim made by Klein (1994:152) that many multiskilled employees feel as if their status has been lowered and along with it, their self-esteem.

Statement 25

Multiskilling reduces boredom

The claim made by the National Food Service Institute (2004:5) is that multiskilling reduces boredom in the workplace, and that tedious tasks can be spread around, thereby decreasing turnover. The purpose of this statement therefore was to find out the extent to which multiskilling contributes to the reduction of boredom in the workplace.

Statement 26

Multiskilling increases job satisfaction

The argument by Cordery (1989:15) is that multiskilling gives room to such important components of theoretical perspectives on the humanisation of work as job enrichment

and socio-technical systems and might therefore be expected to contribute to such desirable individual and organisational outcomes as increased job satisfaction, motivation and lowered absenteeism and turnover. In support of this argument, Horbury and Wright (2001:11) state, "when multiskilling is introduced with the intent being a positive step to improve individuals' quality life, there is some evidence that suggest that...increased job satisfaction among employees will result." The purpose of this statement then was to establish whether indeed multiskilling does contribute to job satisfaction.

Statement 27

Multiskilling contributes to reduced labour turnover

Many sources claim that multiskilling contributes significantly to reduced labour turnover. For instance, the argument by Cordery (1989:15) is that multiskilling contributes to such desirable individual and organisational outcomes as lowered absenteeism and labour turnover. The reason behind asking this statement was to establish the extent to which multiskilling contributes to reduced labour turnover at Hulett Aluminium.

Statement 28

Multiskilling increases the level of worker motivation

Morita (2002:2) is of the view that multiskilled employees have a better knowledge of the company's policies, objectives and reasons behind the decisions affecting them and that they tend to be more loyal, motivated and committed in giving their maximum contribution to the organisation. In this regard therefore the statement was generated for the purpose of establishing the extent to which multiskilling contributes to worker motivation.

Statement 29

Rewards for a multiskilled workforce are a motivating factor in the workplace

The argument advanced by Lawler and Ledford (1985:33) is that in order for the employees to welcome multiskilling, thereby broadening their range of skills, it is essential that there be some form of incentives, for example extrinsic rewards, provided by a financial reward system which is centred on skill acquisition. Mol (2005:181) maintains that there are three characteristics of a reward that motivates:

- "Something that is given without obligation
- Something that is given as recognition of good performance
- Something that is not given as a matter of routine."

The purpose of this statement was to find out if rewards do motivate the workforce or not.

Statement 30

The effectiveness of multiskilling needs to be evaluated by the organisational management.

According to Marshall (2005:3), "Tracking of skills learned is essential to the process [of multiskilling] and, most importantly, the employee must be willing and keen to multiskill." This implies that management should evaluate multiskilling to see to it that the skills learned by employees are being applied and to effect improvements where necessary. The statement was therefore made to establish whether or not the management at Hulett Aluminium do make an evaluation of multiskilling from time to time, effecting improvements where necessary.

4.12 Distribution of the Questionnaire

The researcher distributed the questionnaires, 2 to top-level managers, who are five in total, 4 to middle-level managers, who are nine in all and 100 to shop floor employees, with a total population of four hundred and sixty five. The two managers who had assisted during the preparations for the questionnaire design were very helpful in the distribution of questionnaires to the Hulett Aluminium personnel. They volunteered to

talk to the managers and shop floor employees about the questionnaires and then request them to complete the questionnaires. The reason why the researcher distributed the questionnaires to both managers and shop floor employees was that he wanted to establish if these two parties were sharing the same understanding of the issues around multiskilling. The response rate by the top-level managers was 100%, 100% also by the middle-managers and 52% by the shop floor employees.

4.13 Questionnaire Collection

The researcher had made arrangements with two managers from the skills development section of the Human Resources Department to assist with the collection of questionnaires from both the managers and shop floor employees. The managers were very helpful in that they collected the entire questionnaire that had been filled by Hulett Aluminium and the managers. One top-level manager requested to complete the questionnaire telephonically, as he did not have time to complete the hard copy, due to his very busy schedule. One middle manager had requested an e-mailed questionnaire, which she completed and e-mailed back to the researcher.

4.14 Data Analysis

According to Hedderson (1987:6), data can be defined as any kind of information. However, the term is often used to refer particularly to information that is organised for

computer processing. He further states that for data analysis to be executed effectively, five-step procedure should be followed by researchers, namely:

- Validation and editing (quality control)
- Coding
- Data entry
- Machine cleaning
- Tabulation and statistical analysis (McDaniel and Gates, 1998:350)

4.14.1 Validation and Editing

The purpose of validation and editing is to make sure that the questionnaires have been filled out properly and completely (McDaniel and Gates, 1998:351). Whilst validation on its part aims at determining the extent to which questionnaires have been properly completed, editing detects errors and omissions, corrects them whenever possible, and certifies that minimum data quality standards are achieved (Cooper and Schindler 1998:411). It is therefore incumbent on the researcher to edit for the purposes of guaranteeing that data are:

- "Accurate
- Consistent with other information
- Uniformly entered
- Complete
- Arranged to simplify coding and tabulation" (Cooper and Schindler, 1998:411).

The researcher made a thorough check-up of the entire questionnaire to make sure that they were accurately filled and he satisfied himself that minimum data quality standards were achieved.

4.14.2 Coding

Coding involves assigning numbers or other symbols to answers so that the responses can be grouped into a limited number of classes or categories (Cooper and Schindler, 1998:413). Since the researcher used closed-ended questions in his surveys, these had been pre-coded, as numeric codes had been assigned to the various responses on the questionnaires themselves. This was in keeping with McDaniel and Gates's view that most questions on surveys are closed-ended, and all close-ended questions should be per-coded (McDaniel and Gates, 1998: 358).

4.14.3 Data Entry

According to McDaniel and Gates (1998:358), the term data entry is used to refer to the process of converting information from a form that cannot be read by a computer to a form that can. In the distant past data entry used to be a cumbersome, time-consuming and tedious exercise. Fortunately the advent of computers has made the process much simpler and more efficient (Leedy and Ormrod, 2005 :249).

For data entry the researcher made use of an electronic spreadsheet, a software programme that allows a researcher to manipulate data displayed in a table. The main advantage with an electronic spreadsheet is that once you enter data into them, the software can quickly and easily make desired calculations (Leedy and Ormrod, 2005:249). An electronic spreadsheet became a very useful tool to the researcher as it helped him with the following:

- "Sorting – once the data had been organised into rows and columns, it became possible to reorganise them in anyway the researcher wished
- Searching – the spreadsheet made it easy for the researcher to search for the desired information
- Graphing – graphic presentation involves the use of pictures rather than tables to present research results. Since the spreadsheet has graphing capabilities, it automatically produced a graph from those appropriate parts of the data that were highlighted. Bar charts, particularly plain bar charts and clustered bar charts were used by the researcher to demonstrate his data findings.
- Formulas – an electronic spreadsheet has a capability of calculating many complex mathematical and statistical formulas. Once the data was organised into rows and columns, the researcher could specify the formulas that describe and analyse one or more groups of data."

4.14.4 Machine Cleaning Data

According to McDaniel and Gates (1998:361), it is imperative for any researcher to do the final error checking or what is sometimes referred to as machine cleaning of data. The researcher made the final error checking to ensure that the data fire was clean and ready for tabulation and statistical analysis.

4.14.5 Tabulation and Analysis of Survey Results

For the tabulation and analysis of data, the Statistical Package for the Social Science (SPSS) was used to generate charts, graphs and tables for the highlighted parts of the data. Hedderson (1987:6) defines SPSS as a set of computer programmes that enable researchers to do many types of statistical analyses. He further states that it is a tool that can analyse all sorts of data about a countless variety of topics. One of the great advantages of using a package like SPSS is that it enables the researcher to score and analyse quantitative data quickly and in many different ways once they have learnt how (Bryman and Cramer, 1990:16). Bryman and Cramer further maintain that SPSS provides the researcher with the opportunity for using more complicated and often more appropriate statistical techniques which they would not have otherwise dreamt of attempting.

The other statistical tools that were used to analyse the data were the following:

- "Descriptive statistics – the tool was used to determine the point of central tendency, amount of variability and the extent to which different variables are related to one another.
- Inferential statistics – this tool was used to assess the extent to which the results were valid, using Cronbachs Alpha."

4.15 Summary

This chapter on research methodology has highlighted a number of important factors around data collection and analysis. The methods used to collect data; the interpretative qualitative research method and the descriptive quantitative research method, were explained in details. It has been indicated, however, that qualitative research was only used as a means of gathering information that would enable the researcher to design a structured questionnaire appropriately. Otherwise a descriptive quantitative method was the main method used. In every case, the descriptive research examines a situation as it is (Leedy and Ormrod, 2005:179).

This chapter also focused on how a questionnaire was designed. In keeping with the descriptive quantitative research method, the researcher designed statements that took the form of close-ended questions. These statements made up the structured interviews between the researcher seeking information and the respondent supplying the relevant information in response to a researcher. The fact that the statements required the respondent to agree or disagree or remain neutral, was away of establishing specific facts.

The statements put the researcher in a better position to have firm control over the respondent's responses. This in turn eliminated the chances of the respondent getting carried away and providing irrelevant information.

The chapter also gave clarity to the reasons why each of the thirty statements were made, how questionnaires were collected and analysed. The steps in the analysis of data are clearly explained and all the statistical tools used are clearly reflected on. This then leads to the main findings out of the analysis of data that are dealt with in the next chapter.

CHAPTER 5

RESEARCH RESULTS

5.1 Introduction

This chapter focuses on the statistical results generated from the responses given by the shop floor employees and managers at Hulett Aluminium. This is done in line with the overall purpose of this study: to investigate the adoption of multiskilling by Hulett Aluminium, specific research objectives, and hypotheses.

The chapter is divided into five parts. The first part focuses on the statistical results generated from the responses by the shop floor employees. This part is followed by the hypotheses testing based on the results generated. The second part focuses on the statistical results generated from the responses by managers. This part is also followed by the relevant hypotheses testing. The third part is concerned with the analysis of the combined responses, that is, the responses from the shop floor employees in relation to those by managers. Each of the statistical results generated is explained fully so that its meaning could be understood in relation to the objective of the statement.

5.2 Statistical Output of Research Findings – shop floor employees

Figure 5.2.1 All the relevant stakeholders were part of the adoption of multiskilling.

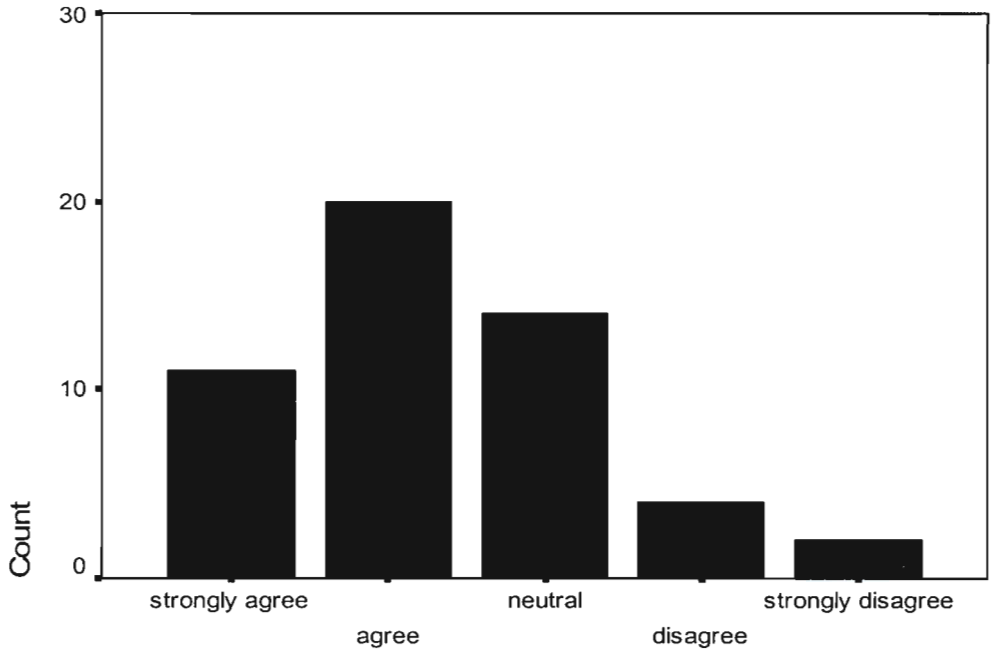

Table 5.2.1 Responses to Statement 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	11	21.6	21.6	21.6
	agree	20	39.2	39.2	60.8
	neutral	14	27.5	27.5	88.2
	disagree	4	7.8	7.8	96.1
	strongly disagree	2	3.9	3.9	100.0
	Total	51	100.0	100.0	

It does happen with some organisations that key relevant stakeholders are left out in critical decision making processes. Errors like these are usually a good recipe for resistance, as the affected stakeholders end up interpreting such behaviour as a dictatorial imposition of something they do not go along with. In the case of Hulett Aluminium, as indicated in figure 5.2.1 and table 5.2.1, 60,8% of the shop floor respondents agree, whilst 27,5 % are neutral and 11,7% disagree that all relevant stakeholders were part of the adoption of multiskilling. Whilst 60,8% is a reasonably good percentage, the other

27,5 % of neutrality and 11,7% of those who disagree is a worrying factor and calls for some more consultation on the part of the company

Figure 5.2.2 Everybody within the organization became aware of what multiskilling entails

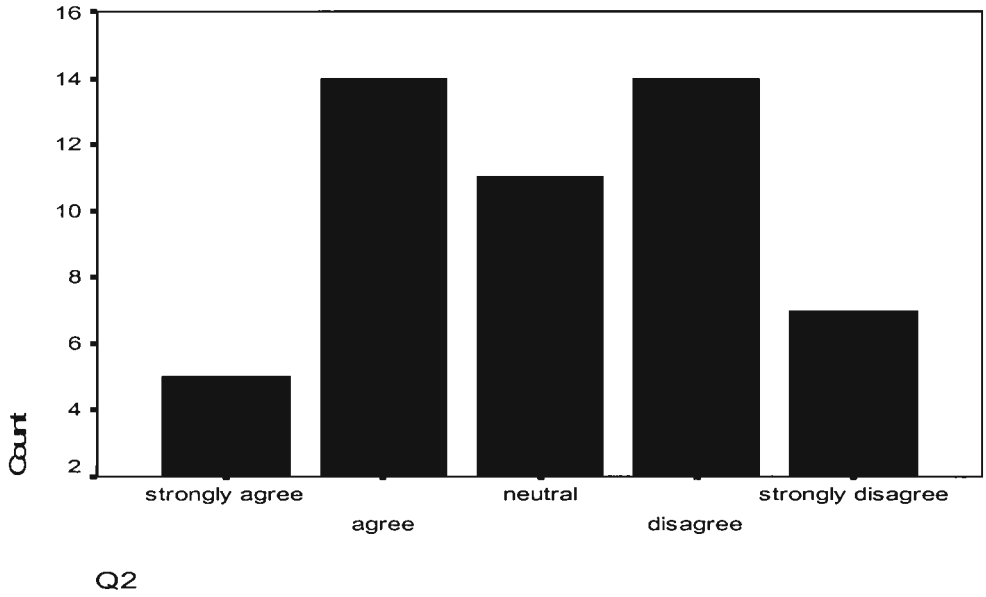

Table 5.2.2 Responses to Statement 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	5	9.8	9.8	9.8
	agree	14	27.5	27.5	37.3
	neutral	11	21.6	21.6	58.8
	disagree	14	27.5	27.5	86.3
	strongly disagree	7	13.7	13.7	100.0
	Total	51	100.0	100.0	

Figure 5.2.2 and table 5.2.2 show that only 37,3% of the shop floor respondents agree that everybody within the organisation became aware of what multiskilling entails. 41,2% of them disagree, whilst 21,6% are neutral. This is an indicator to the fact that the majority are not well informed about multiskilling.

Figure 5.2.3 Everybody within the organization warmly welcomed the adoption of multiskilling.

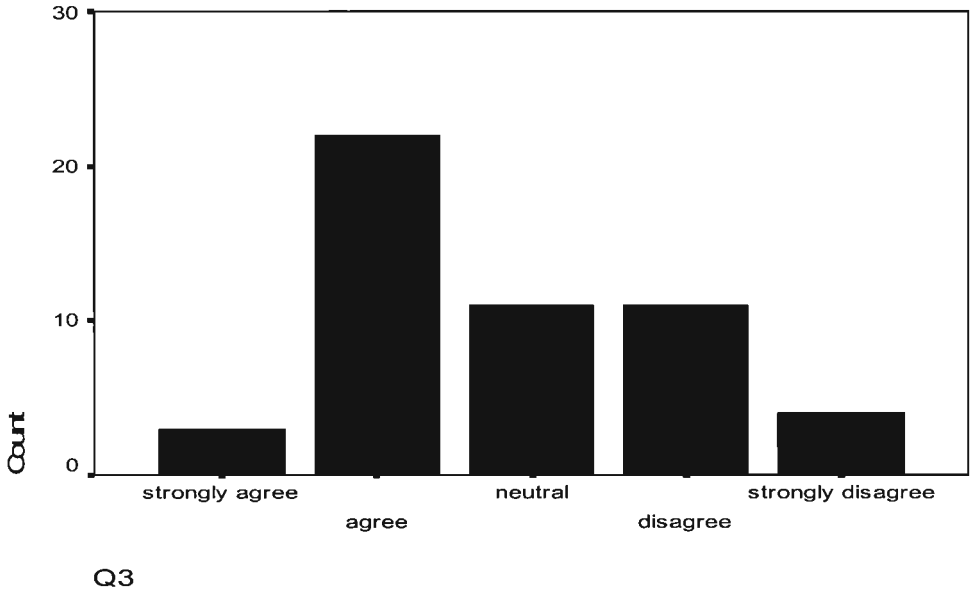

Table 5.2.3 Responses to Statement 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	3	5.9	5.9	5.9
	agree	22	43.1	43.1	49.0
	neutral	11	21.6	21.6	70.6
	disagree	11	21.6	21.6	92.2
	strongly disagree	4	7.8	7.8	100.0
	Total	51	100.0	100.0	

From figure 5.2.3 and table 5.2.3 it does appear that the majority of shop floor respondents feel that everybody at Hulett Aluminium warmly welcomed the adoption of multiskilling. 49% of them agree, whilst only 29, 4% disagree, with 21,6% taking a neutral position.

Figure 5.2.4 It became easy for the organization to apply multiskilling.

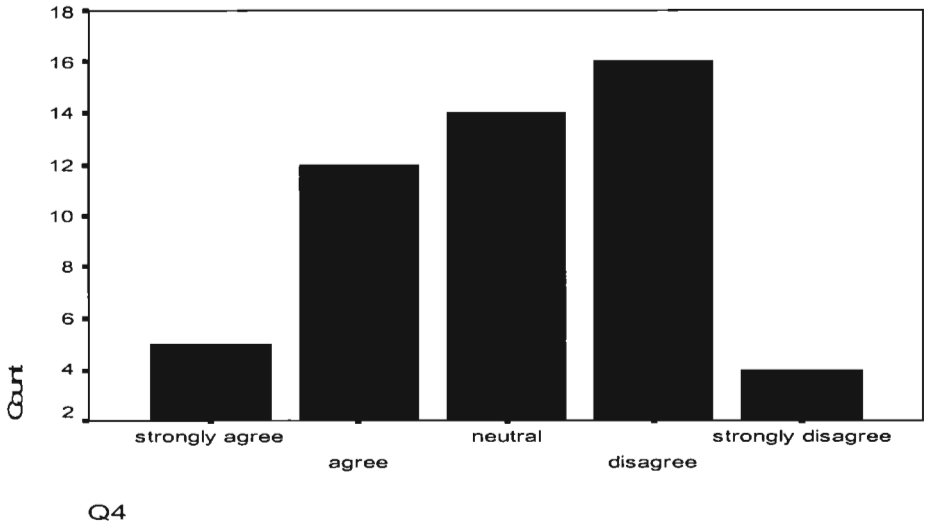

Table 5.2.4 Responses to Statement 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	5	9.8	9.8	9.8
	agree	12	23.5	23.5	33.3
	neutral	14	27.5	27.5	60.8
	disagree	16	31.4	31.4	92.2
	strongly disagree	4	7.8	7.8	100.0
	Total	51	100.0	100.0	

Only 33,3% of the shop floor respondents agree that it became easy for the organisation to adopt multiskilling. 39,2% of them disagree, whilst 27,5 % are neutral. This indicates that the organisation experienced hardships in trying to implement multiskilling.

Figure 5.2.5 Top-level management was the main target for multiskilling.

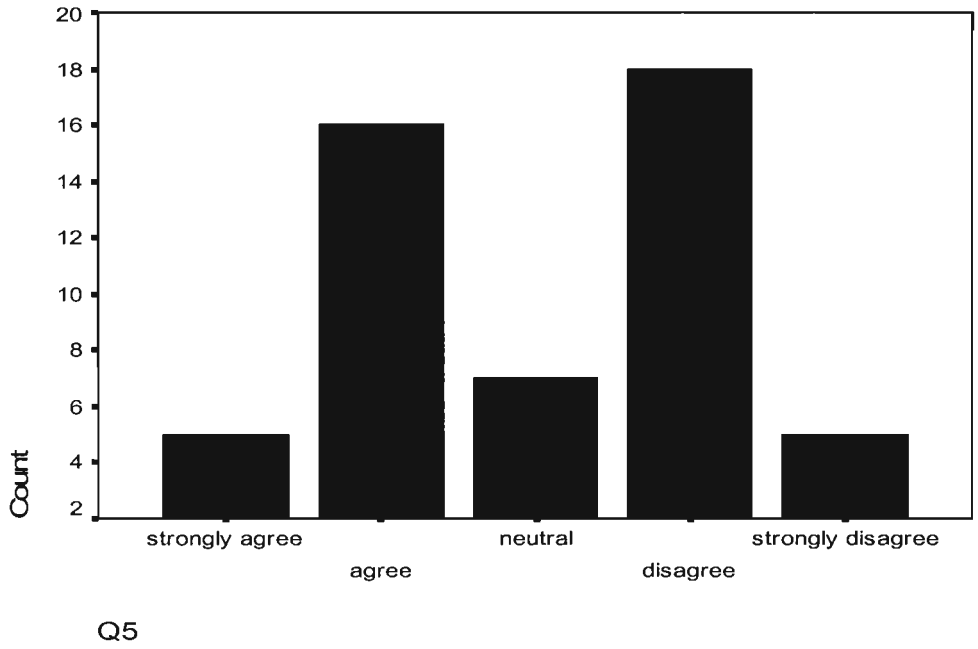

Table 5.2.5 Responses to Statement 5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	5	9.8	9.8	9.8
	agree	16	31.4	31.4	41.2
	neutral	7	13.7	13.7	54.9
	disagree	18	35.3	35.3	90.2
	strongly disagree	5	9.8	9.8	100.0
	Total	51	100.0	100.0	

The above figure 5.2.5 and table 5.2.5 indicate that 41,2% of the respondents agree that top-level management was the main target for multiskilling, with 45,1% disagreeing and 13,7% taking a neutral position. It does appear that the shop floor employees are not very sure as to what group was the main target when multiskilling was introduced at Hulett Aluminium

Figure 5.2.6 Middle management was the main target for multiskilling.

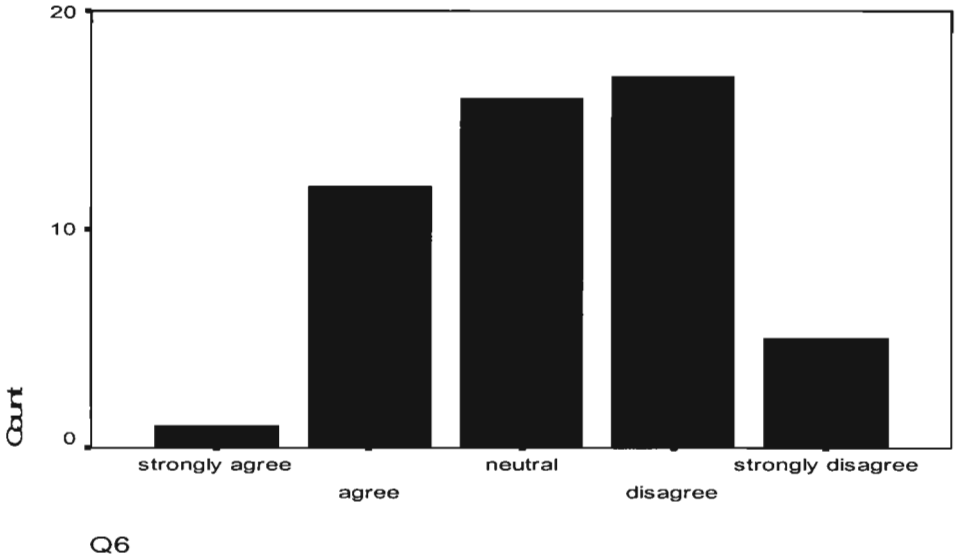

Table 5.2.6 Responses to Statement 6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	1	2.0	2.0	2.0
	agree	12	23.5	23.5	25.5
	neutral	16	31.4	31.4	56.9
	disagree	17	33.3	33.3	90.2
	strongly disagree	5	9.8	9.8	100.0
	Total	51	100.0	100.0	

From figure 5.2.6 and table 5.2.6 it appears that 25,5% of the respondents are of the view that multiskilling at Hulett Aluminium targeted middle management. 43,1% of them disagree, whilst 31,4% are neutral.

Figure 5.2.7 Shop floor employees were the main target for multiskilling.

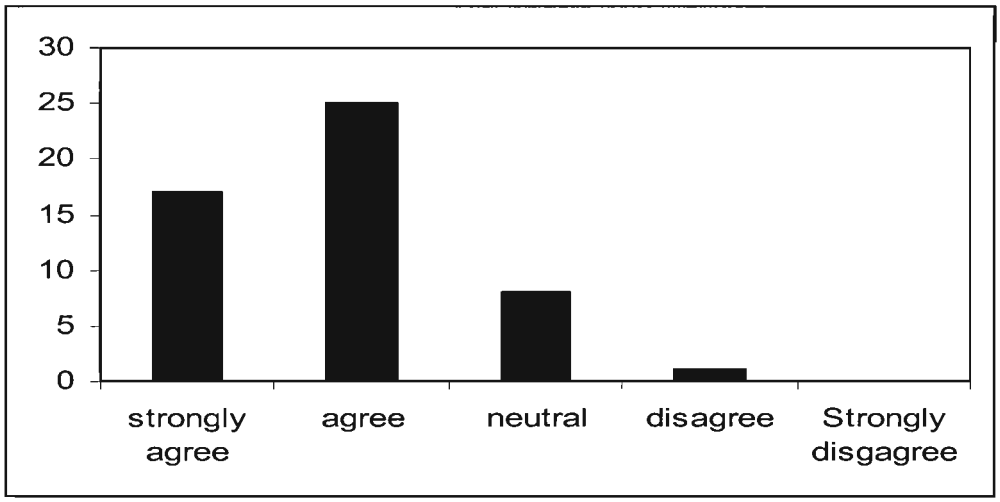

Table 5.2.7 Responses to Statement 7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	17	33.3	33.3	33.3
	agree	25	49.0	49.0	82.4
	neutral	8	15.7	15.7	98.0
	disagree	1	2.0	2.0	100.0
	Total	51	100.0	100.0	

An overwhelming majority of the respondents, 82,3% of them, agree that shop floor employees were the main target for multiskilling, with only 2% disagreeing and 15,7% remaining neutral. The researcher is of the opinion that those respondents who agreed that top-level management and middle management were the target for multiskilling were actually not certain. They could have otherwise fallen within the neutral position. But with multiskilling having been meant for the shop floor employees, they are quite certain that this was the position.

Figure 5.2.8The organization is still grappling with some problems pertaining to multiskilling.

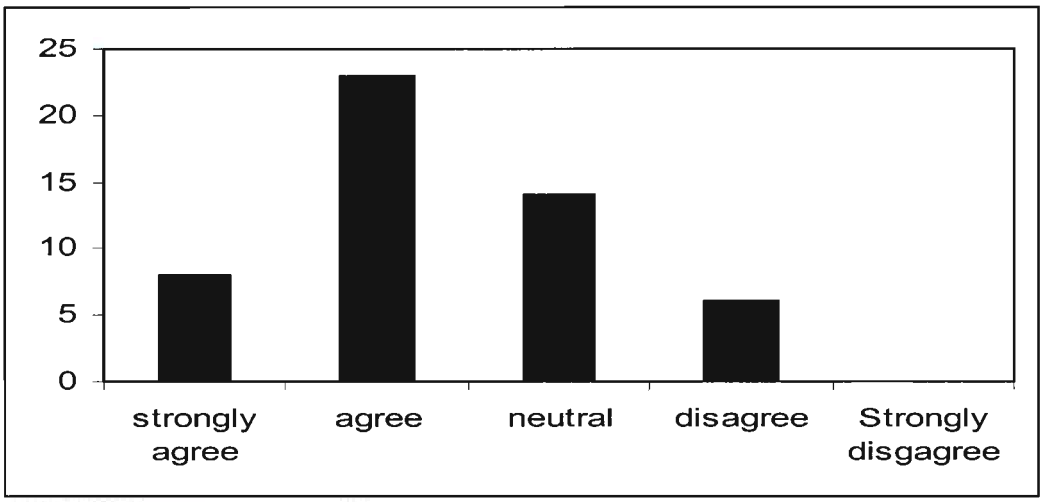

Table 5.2.8 Responses to Statement 8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	8	15.7	15.7	15.7
	agree	23	45.1	45.1	60.8
	neutral	14	27.5	27.5	88.2
	disagree	6	11.8	11.8	100.0
	Total	51	100.0	100.0	

The view that Hulett Aluminium is stall grappling with some problems pertaining to multiskilling is shared by the majority of the respondents. The above figure 5.2.8 and table 5.2.8 indicate that 60,8% of them agree, 11,8% disagree, whilst 27,5% are neutral.

Figure 5.2.9 Training is an essential tool for multiskilling to be effective.

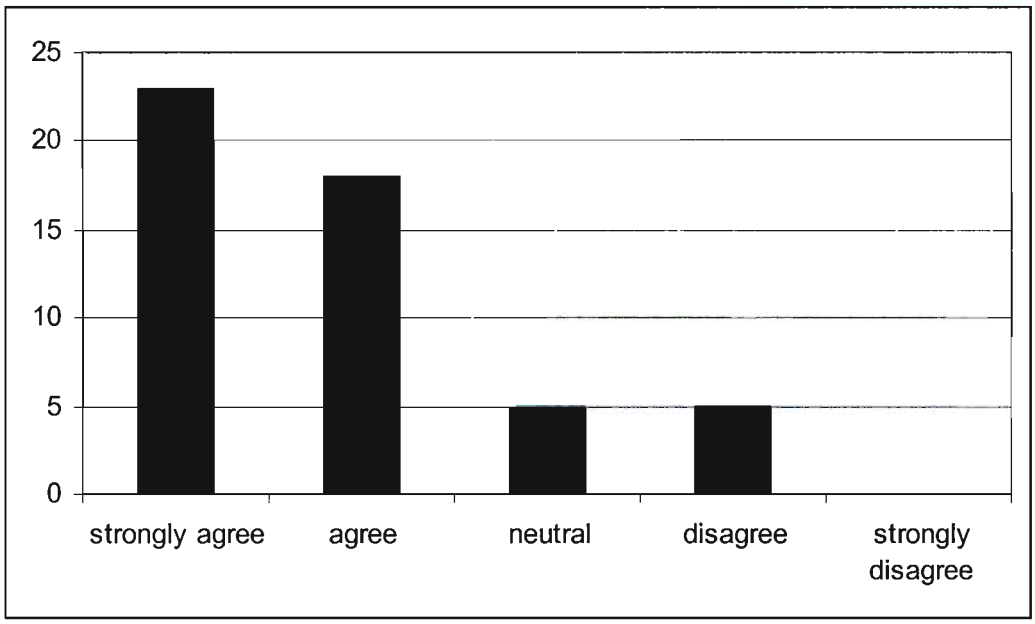

Table 5.2.9 Responses to Statement 9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	23	45.1	45.1	45.1
	agree	18	35.3	35.3	80.4
	neutral	5	9.8	9.8	90.2
	disagree	5	9.8	9.8	100.0
	Total	51	100.0	100.0	

The above figure 5.2.9 and table 5.2.9 show that 45,1% of the respondents strongly agree that training is an essential tool for multiskilling. 35,3% of them agree, 9,8% disagree, whilst 9,8% are neutral. A good percentage, 80,4% overall, agree that training is essential for multiskilling.

Figure 5.2.10 Multiskilling alleviates the problem of absenteeism.

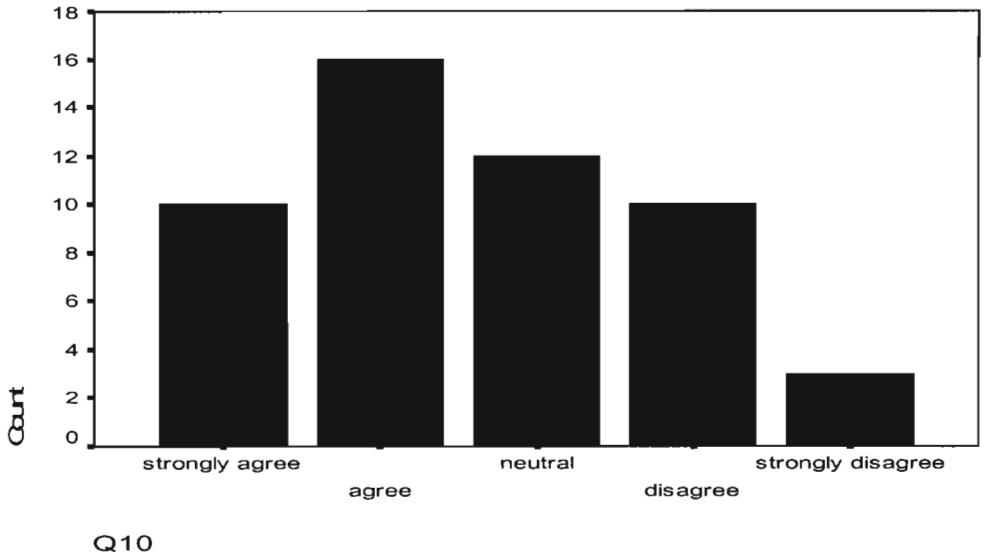

Table 5.2.10 Responses to Statement 10

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	10	19.6	19.6	19.6
	agree	16	31.4	31.4	51.0
	neutral	12	23.5	23.5	74.5
	disagree	10	19.6	19.6	94.1
	strongly disagree	3	5.9	5.9	100.0
	Total	51	100.0	100.0	

51% of the respondents agree that multiskilling alleviates the problem of absenteeism. 25,5% of them disagree with the statement, whilst 23,5% are neutral. These statistics demonstrate some degree of uncertainty about whether or not multiskilling alleviates the problem of absenteeism.

Figure 5.2.11 A multiskilled workforce easily copes with the new, advanced technology.

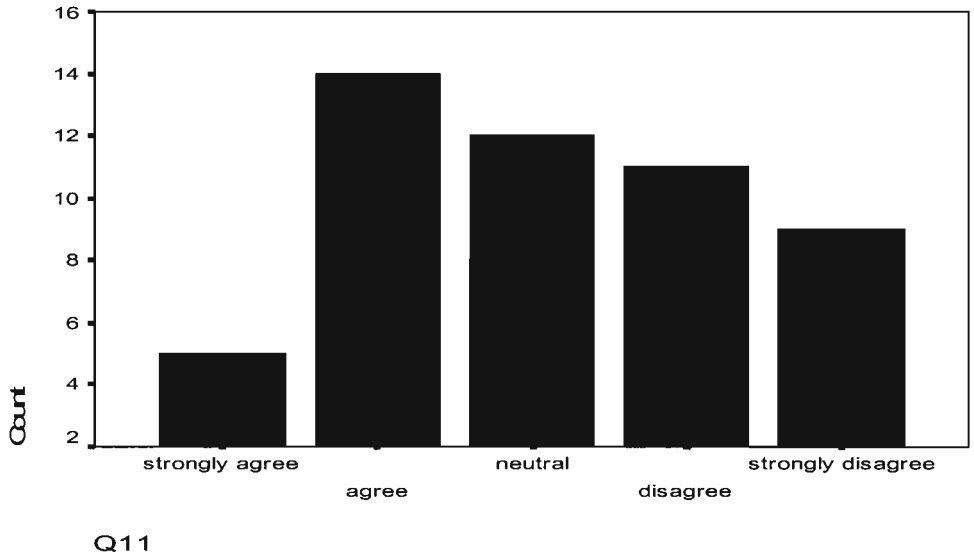

Table 5.2.11 Responses to Statement 11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	5	9.8	9.8	9.8
	agree	14	27.5	27.5	37.3
	neutral	12	23.5	23.5	60.8
	disagree	11	21.6	21.6	82.4
	strongly disagree	9	17.6	17.6	100.0
	Total	51	100.0	100.0	

Only 37,3% of the respondents agree that a multiskilled workforce easily copes with new, advanced technology. 39,2% disagree, whilst 23,5% are neutral. These statistics indicate that the difference between the positive and negative responses is not significant.

Figure 5.2.12 Multiskilled employees need appropriate resources (e.g. proper equipment) for the application of their skills.

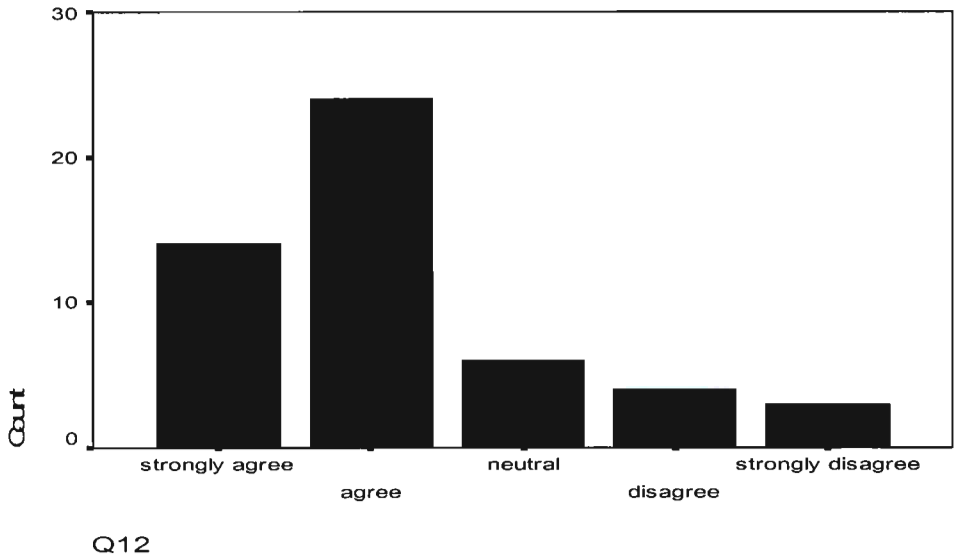

Table 5.2.12 Responses to Statement 12

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	14	27.5	27.5	27.5
	agree	24	47.1	47.1	74.5
	neutral	6	11.8	11.8	86.3
	disagree	4	7.8	7.8	94.1
	strongly disagree	3	5.9	5.9	100.0
	Total	51	100.0	100.0	

The above figure 5.2.12 and table 5.2.12 show that 27,5% of the respondents strongly agree that multiskilled employees need appropriate resources (e.g. proper equipment) for the application of their skills. 47,1% of them agree, 7,8% disagree, 5,9% strongly disagree, whilst 11,8% of them are neutral. The overall 74,6% of respondents agree with the statement, which indicates that shop floor employees do see the need for the availability of sufficient and appropriate resources for the application of their skills.

Figure 5.2.13 A multiskilled workforce has a broad knowledge of the whole work of the organization.

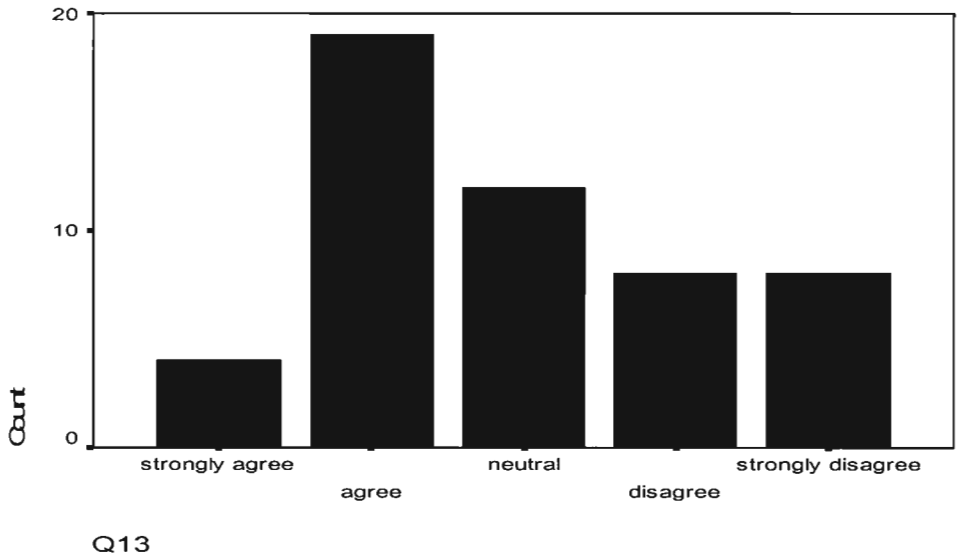

Table 5.2.13 Responses to Statement 13

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	4	7.8	7.8	7.8
	agree	19	37.3	37.3	45.1
	neutral	12	23.5	23.5	68.6
	disagree	8	15.7	15.7	84.3
	strongly disagree	8	15.7	15.7	100.0
	Total	51	100.0	100.0	

There seems to be a split amongst employees at Hulett Aluminium about whether or not a multiskilled workforce has a broad knowledge of the whole work of the organisation. Figure 5.2.13 and table 5.2.13 indicate that only 7,8% strongly agree with the statement, 37,3% agree, 15,7% disagree, 15,7% strongly disagree, while 23,5% are neutral.

Figure 5.2.14 Multiskilling enhances employee flexibility, enabling individuals to be competent in several tasks.

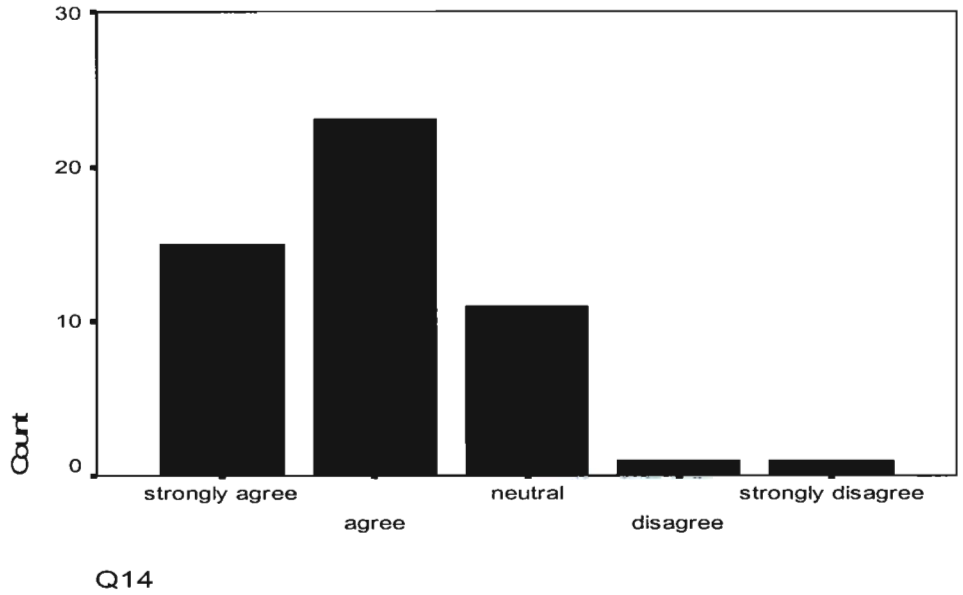

Table 5.2.14 Responses to Statement 14

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	15	29.4	29.4	29.4
	agree	23	45.1	45.1	74.5
	neutral	11	21.6	21.6	96.1
	disagree	1	2.0	2.0	98.0
	strongly disagree	1	2.0	2.0	100.0
	Total	51	100.0	100.0	

Altogether 74,5% (29,4% strongly agree, 45,1% agree) agree that multiskilling enhances employee flexibility, enabling individuals to be competent in several tasks. Surely the shop floor employees are of this opinion because many of them have personal experiences about the advantages of multiskilling. Only 4% disagree with the statemcnt, whilst 21,6 are neutral.

Figure 5.2.15 Multiskilling improves worker efficiency.

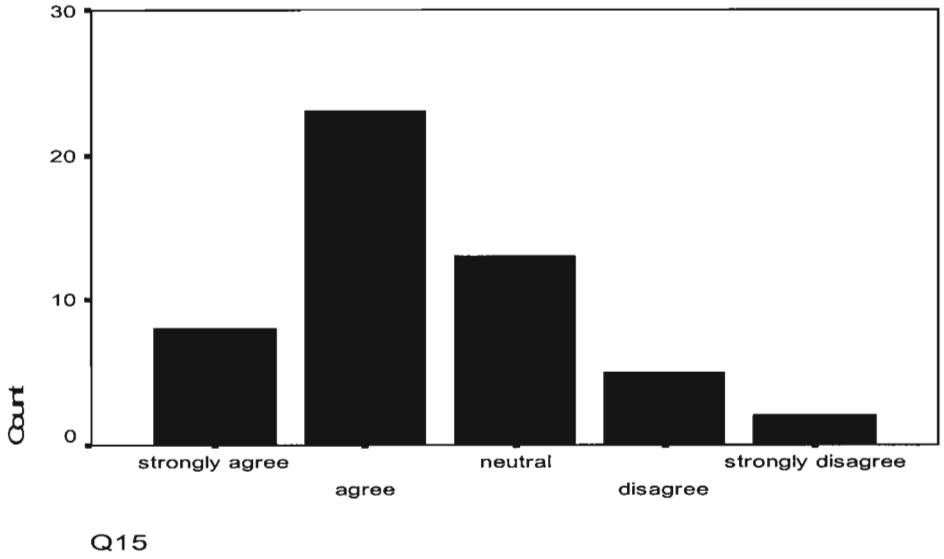

Table 5.2.15 Responses to Statement 15

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	8	15.7	15.7	15.7
	agree	23	45.1	45.1	60.8
	neutral	13	25.5	25.5	86.3
	disagree	5	9.8	9.8	96.1
	strongly disagree	2	3.9	3.9	100.0
	Total	51	100.0	100.0	

One of the directors at Hulett Aluminium was very quick to state that being multiskilled does not necessarily guarantee efficiency. From figure 5.2.15 and table 5.2.15 we observe that 60,8% of the respondents agree that multiskilling improves worker efficiency. Only 3,7% disagree, whilst 25,5% are neutral.

Figure 5.2.16 Multiskilling removes departmental or unit barriers.

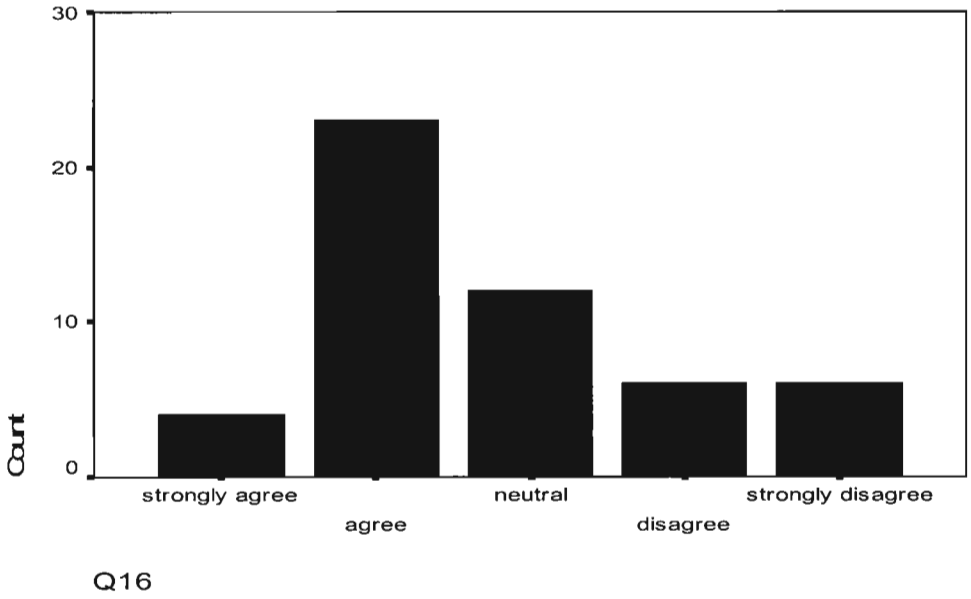

Table 5.2.16 Responses to Statement 16

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	4	7.8	7.8	7.8
	agree	23	45.1	45.1	52.9
	neutral	12	23.5	23.5	76.5
	disagree	6	11.8	11.8	88.2
	strongly disagree	6	11.8	11.8	100.0
	Total	51	100.0	100.0	

Of the total number of respondents, 7,85 strongly agree and 45,1 agree that multiskilling removes departmental or unit barriers, whereas 11,8% disagree, whilst 23,6% are neutral.

Figure 5.2.17 Multiskilling encourages teamwork.

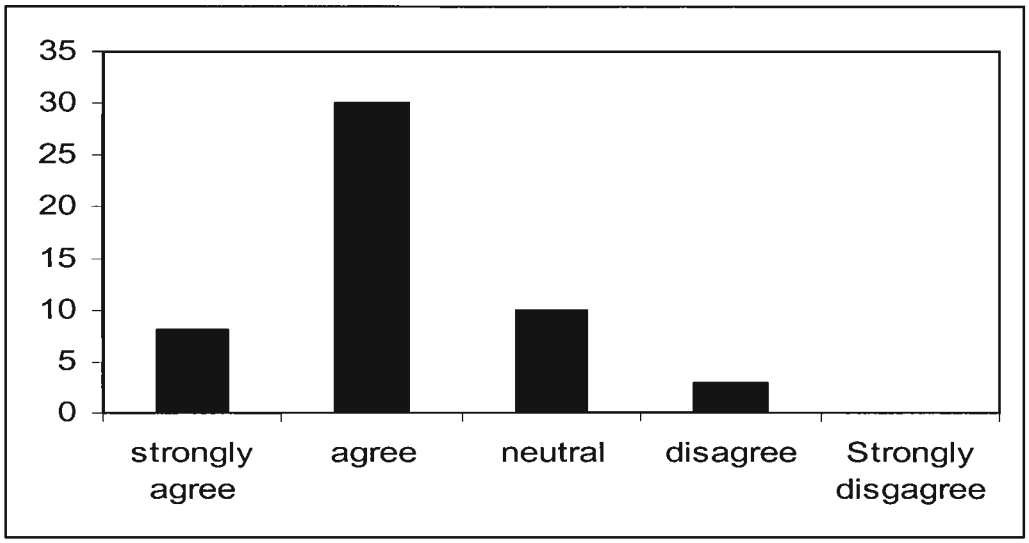

Table 5.2.17 Responses to Statement 17

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	8	15.7	15.7	15.7
	agree	30	58.8	58.8	74.5
	neutral	10	19.6	19.6	94.1
	disagree	3	5.9	5.9	100.0
	Total	51	100.0	100.0	

Figure 5.2.17 and table 5.2.17 show that an overwhelming majority of the respondents, 74,5% overall, agree that multiskilling encourages teamwork. Only 5,9% disagree, whilst 19,6% are neutral. This indicates that the introduction of multiskilling at Hulett Aluminium has brought about the encouragement of teamwork.

Figure 5.2.18 Multiskilling contributes positively to Total Quality Management.

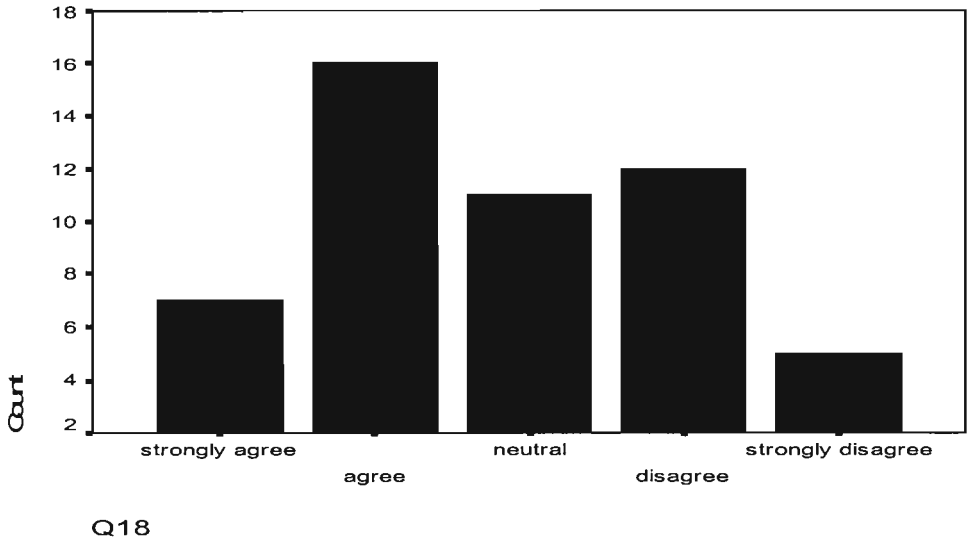

Table 5.2.18 Responses to Statement 18

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	7	13.7	13.7	13.7
	agree	16	31.4	31.4	45.1
	neutral	11	21.6	21.6	66.7
	disagree	12	23.5	23.5	90.2
	strongly disagree	5	9.8	9.8	100.0
	Total	51	100.0	100.0	

With regards to whether or not multiskilling contributes positively to Total Quality Management, there seems to be a split of opinion. Figure 5.2.18 and table 5.2.18 show that 13,7% of the respondents strongly agree with the statement, 31,4% of them agree, 23,5% disagree, 9,8% strongly disagree, whilst 21,6% are neutral. It is possible that the shop floor employees are unable to establish a link between multiskilling and Total Quality Management.

Figure 5.2.19 Multiskilling contributes to increased organizational labour productivity.

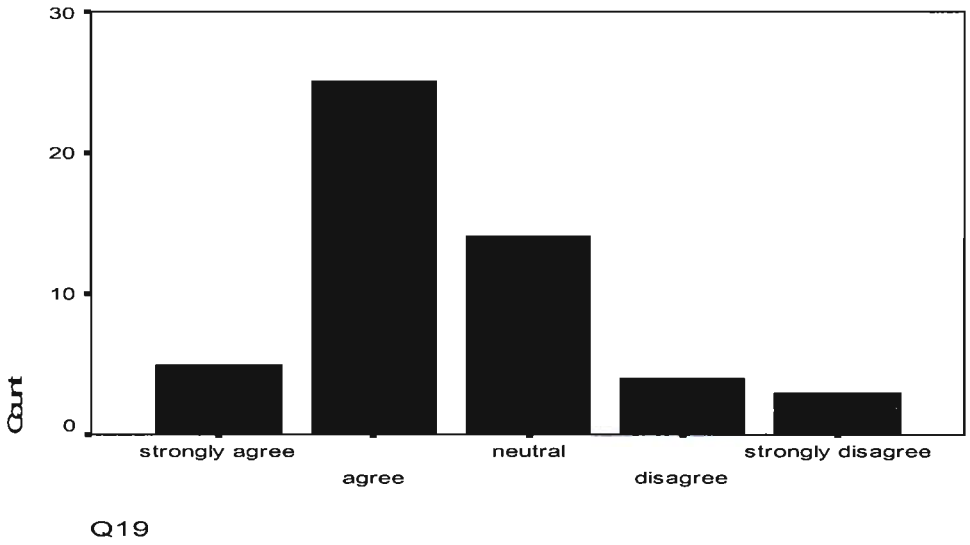

Table 5.2.19 Responses to Statement 19

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	5	9.8	9.8	9.8
	agree	25	49.0	49.0	58.8
	neutral	14	27.5	27.5	86.3
	disagree	4	7.8	7.8	94.1
	strongly disagree	3	5.9	5.9	100.0
	Total	51	100.0	100.0	

Figure 5.2.19 and table 5.2.19 indicate that 9,8% of the respondents strongly agree that multiskilling contributes positively to increased organisational labour productivity. 49% agree, 7,8% disagree, 5,9% disagree, whilst 27,5% remain neutral. This scenario is a positive sign on the part of the organisation, as a multiskilled shop floor workforce is aware that it has a significant contribution to increased organisational labour productivity.

Figure 5.2.20 Multiskilling reduces organizational overall costs.

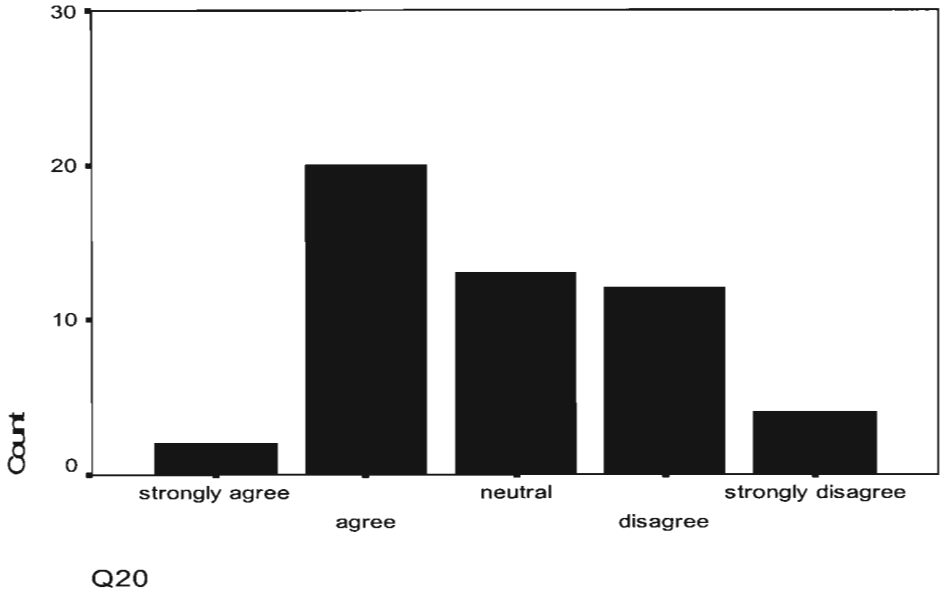

Table 5.2.20 Responses to Statement 20

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	2	3.9	3.9	3.9
	agree	20	39.2	39.2	43.1
	neutral	13	25.5	25.5	68.6
	disagree	12	23.5	23.5	92.2
	strongly disagree	4	7.8	7.8	100.0
	Total	51	100.0	100.0	

Only 3,9% of the respondents agree that multiskilling reduces the organisational overall costs. 39,2% agree, 23,5% disagree, 7,8% strongly disagree, whilst 25,5% remain neutral. These statistical results could be expected from the shop floor employees, as productivity could be attributed to a number of factors and it is mainly management that is hands-on with its monitoring.

Figure 5.2.21 Multiskilling reduces industrial conflicts.

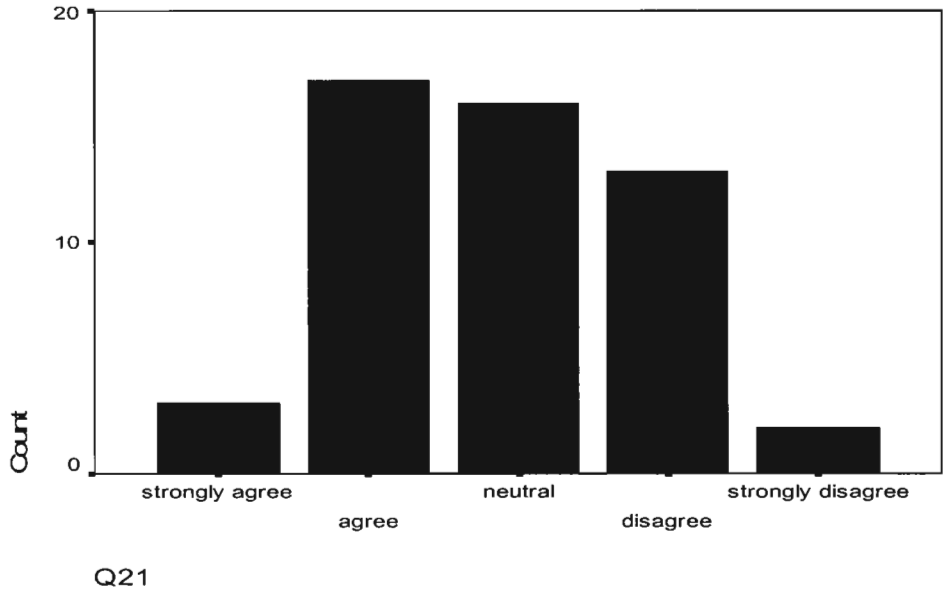

Table 5.2.21 Responses to Statement 21

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	3	5.9	5.9	5.9
	agree	17	33.3	33.3	39.2
	neutral	16	31.4	31.4	70.6
	disagree	13	25.5	25.5	96.1
	strongly disagree	2	3.9	3.9	100.0
	Total	51	100.0	100.0	

The respondents have differing opinions with regards to whether or not multiskilling reduces industrial conflicts. Figure 5.2.21 and table 5.2.21 above show that only 5,9% of the respondents strongly agree, 33,3% agree, 25,5% disagree, 3,9% strongly disagree, whilst 31,4% are neutral. The respondents seem unable to link multiskilling and the reduction of industrial conflicts.

Figure 5.2.22 Multiskilling is a very expensive and costly for the organization.

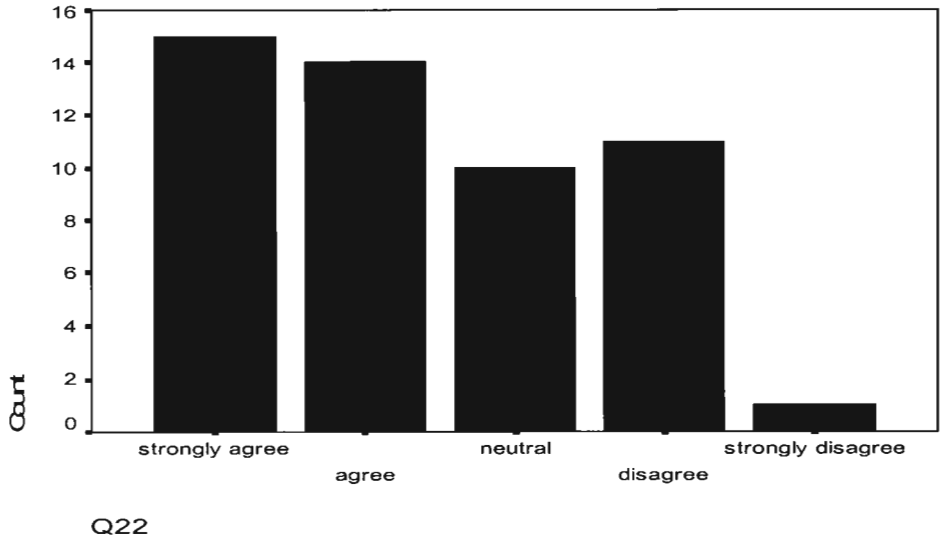

Table 5.2.22 Responses to Statement 22

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	15	29.4	29.4	29.4
	agree	14	27.5	27.5	56.9
	neutral	10	19.6	19.6	76.5
	disagree	11	21.6	21.6	98.0
	strongly disagree	1	2.0	2.0	100.0
	Total	51	100.0	100.0	

A greater percentage of the respondents feel that multiskilling is very expensive and costly for Hulett Aluminium. From figure 5.2.22 and table 5.2.22 above it appears that 29,4% strongly agree with the statement, 27,5% agree, 21,6% disagree, and only 2% strongly disagree, with 19,6% taking a neutral position.

Figure 5.2.23 Multiskilling makes workers to lose a sense of specialization.

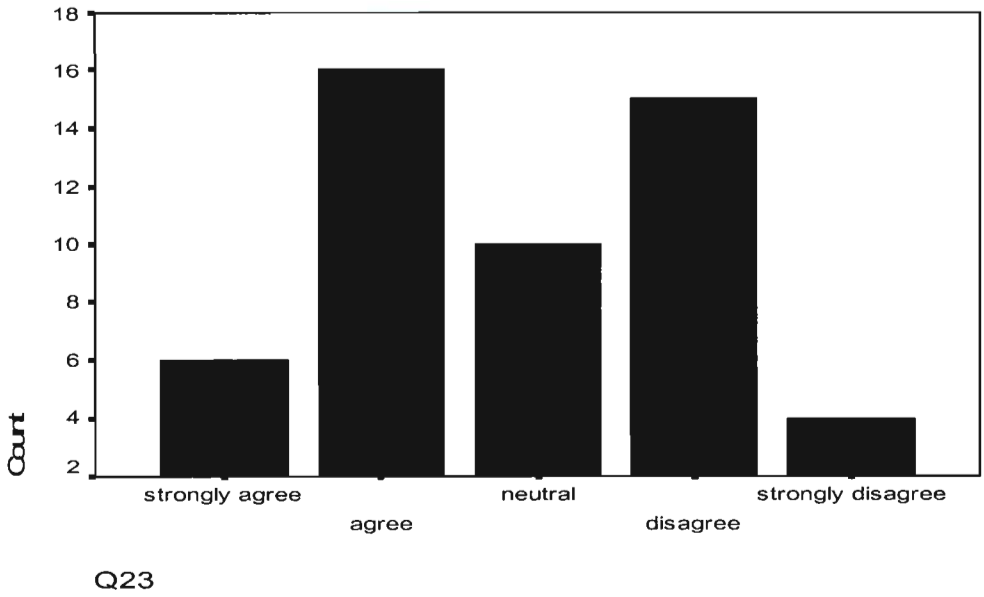

Table 5.2.23 Responses to Statement 23

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	6	11.8	11.8	11.8
	agree	16	31.4	31.4	43.1
	neutral	10	19.6	19.6	62.7
	disagree	15	29.4	29.4	92.2
	strongly disagree	4	7.8	7.8	100.0
	Total	51	100.0	100.0	

A bigger percentage of the respondents are those that agree that multiskilling makes workers to lose a sense of specialisation. Figure 5.2.23 and table 5.2.23 show that 11,8% of the respondents strongly agree, 31,4% of them agree, 29,4% of them disagree, 7,8% strongly disagree, whilst 19,6% are neutral.

Figure 5.2.24 Multiskilling makes the workforce to lose self-esteem.

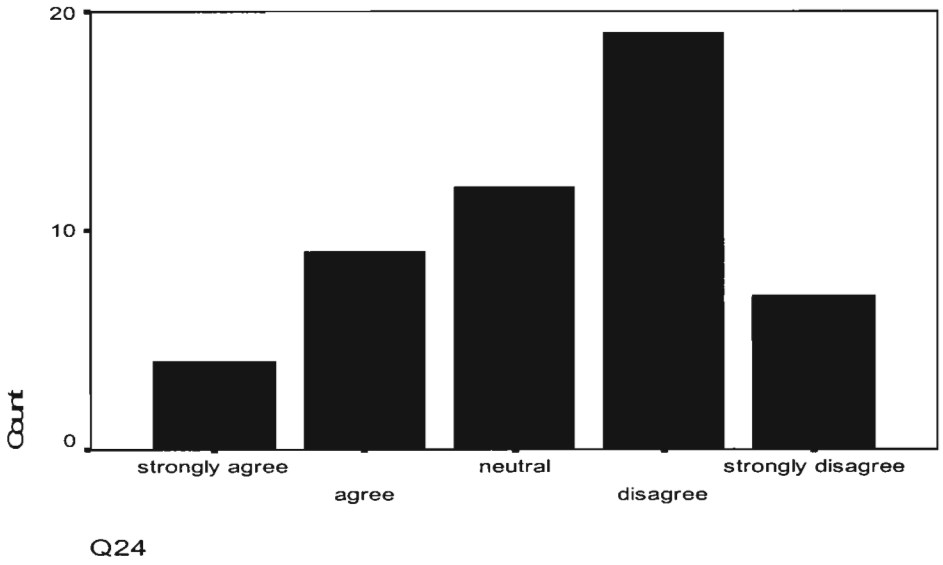

Table 5.2.24 Responses to Statement 24

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	4	7.8	7.8	7.8
	agree	9	17.6	17.6	25.5
	neutral	12	23.5	23.5	49.0
	disagree	19	37.3	37.3	86.3
	strongly disagree	7	13.7	13.7	100.0
	Total	51	100.0	100.0	

A bigger percentage of the respondents disagree that multiskilling makes the workforce to lose self-esteem. 13,7% of them strongly disagree, 37,3% disagree, 17,6% agree and only 7,8% strongly disagree, whilst 23,5% of them are neutral.

Figure 5.2.25 Multiskilling reduces boredom.

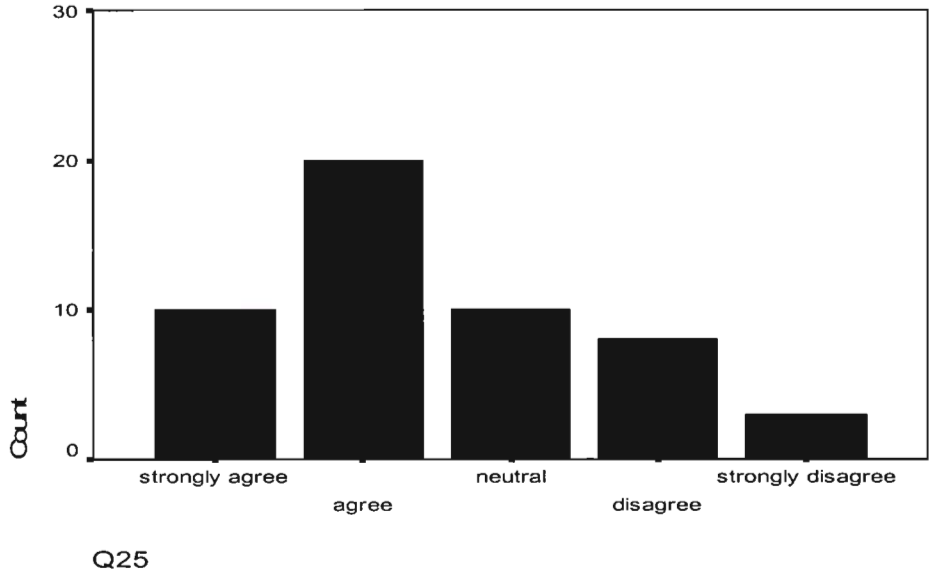

Table 5.2.25 Responses to Statement 25

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	10	19.6	19.6	19.6
	agree	20	39.2	39.2	58.8
	neutral	10	19.6	19.6	78.4
	disagree	8	15.7	15.7	94.1
	strongly disagree	3	5.9	5.9	100.0
	Total	51	100.0	100.0	

Figure 5.2.25 and table 5.2.25 show that a bigger percentage of the respondents agree that multiskilling reduces boredom. 19,6% of them strongly agree, 39,2% of them agree, 15,7% disagree and only 5,9% of them strongly disagree, whilst 19,6% of them are neutral.

Figure 5.2.26 Multiskilling increases job satisfaction.

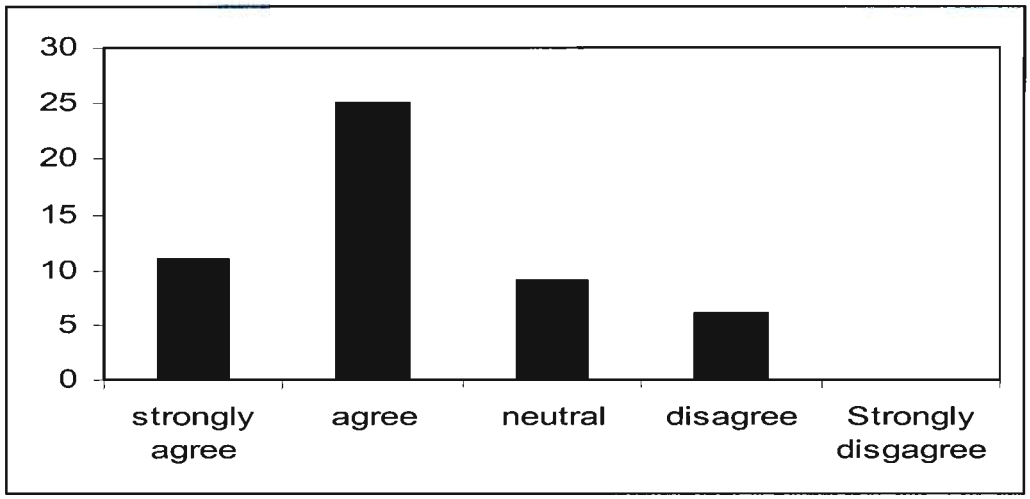

Table 5.2.26 Responses to Statement 26

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	11	21.6	21.6	21.6
	agree	25	49.0	49.0	70.6
	neutral	9	17.6	17.6	88.2
	disagree	6	11.8	11.8	100.0
	Total	51	100.0	100.0	

The majority of the respondents are of the view that multiskilling increases job satisfaction. Figure 5.26 and table 5.26 indicate that 21,6% of them strongly agree, 49% of them agree, and only 11,8% of them disagree, whilst 17,6% of them are neutral.

Figure 5.2.27 Multiskilling contributes to reduced labour turnover.

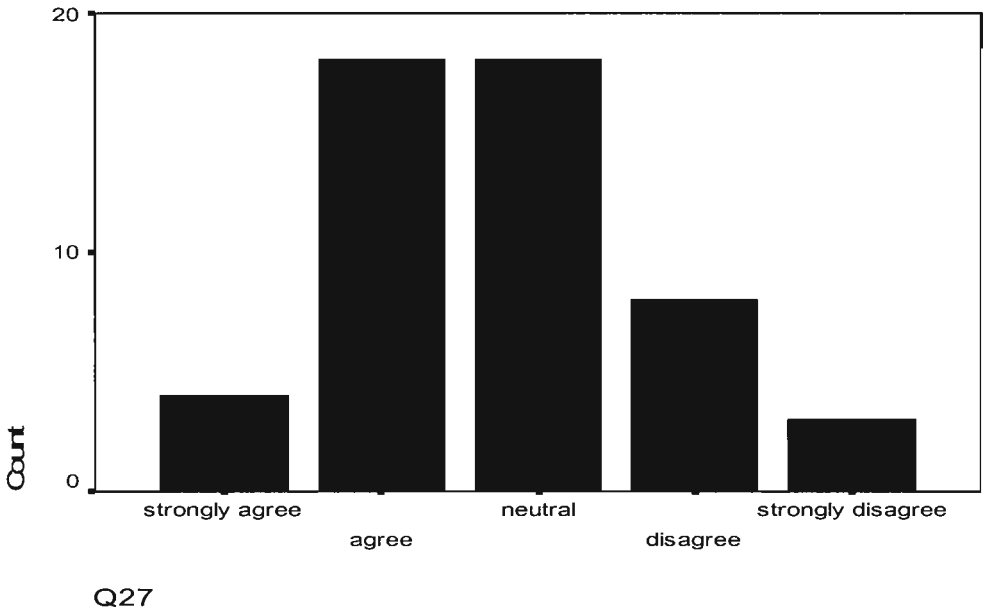

Table 5.2.27 Responses to Statement 27

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	4	7.8	7.8	7.8
	agree	18	35.3	35.3	43.1
	neutral	18	35.3	35.3	78.4
	disagree	8	15.7	15.7	94.1
	strongly disagree	3	5.9	5.9	100.0
	Total	51	100.0	100.0	

There are differing views on the statement that says that multiskilling contributes to reduced labour turnover. Only 7,8% of the respondents strongly agree with the statement, 35,3% agree, 15,7% disagree, and 5,9% of them strongly disagree, whilst 35,3% remain neutral. This suggests that respondents are not very sure as to whether reduced labour turns over does happen, and if it does, whether multiskilling has an impact on that.

Figure 5.2.28 Multiskilling increases the level of worker motivation.

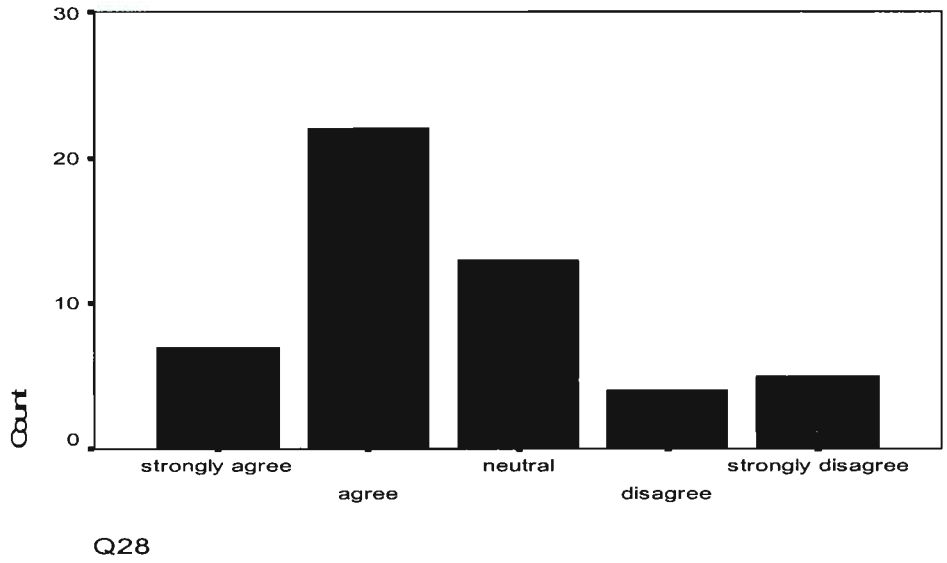

Table 5.2.28 Responses to Statement 28

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	7	13.7	13.7	13.7
	agree	22	43.1	43.1	56.9
	neutral	13	25.5	25.5	82.4
	disagree	4	7.8	7.8	90.2
	strongly disagree	5	9.8	9.8	100.0
	Total	51	100.0	100.0	

A bigger percentage of the respondents agree that multiskilling increases the level of worker motivation. Figure 5.2.28 and table 5.2.28 show that 13,7% of them strongly agree, 43,1% of them agree, 7.8% disagree and 9,8% of them strongly disagree, whilst 25,5% of them are neutral.

Figure 5.2.29 Rewards for a multiskilled workforce are a motivating factor in the workplace.

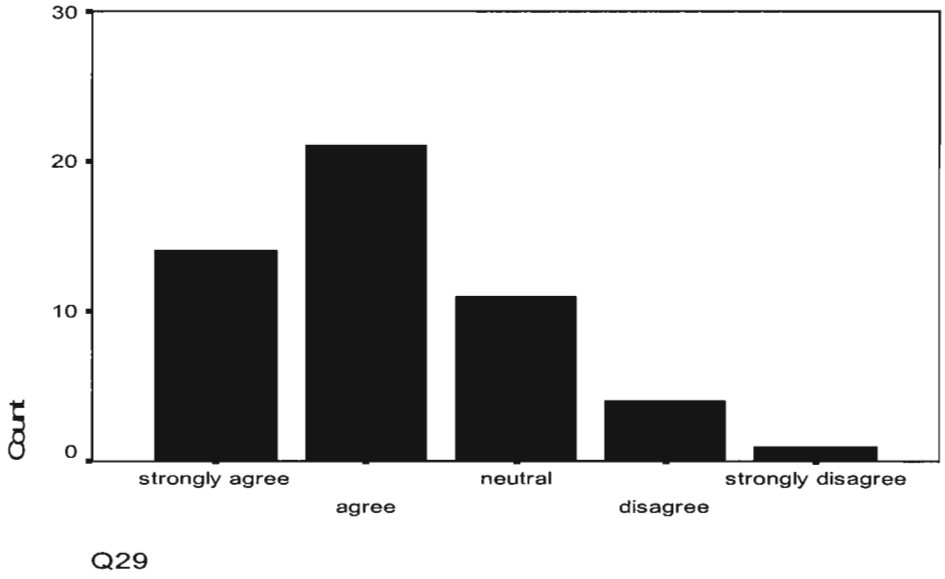

Table 5.2.29 Responses to Statement 29

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	14	27.5	27.5	27.5
	agree	21	41.2	41.2	68.6
	neutral	11	21.6	21.6	90.2
	disagree	4	7.8	7.8	98.0
	strongly disagree	1	2.0	2.0	100.0
	Total	51	100.0	100.0	

The majority of the respondents agree that rewards for a multiskilled workforce are a motivating factor in the workplace. Figure 5.2.29 and table 5.2.29 indicate that altogether 68,7% (27,5% strongly agreeing, 41,2% agreeing) of them agree with the statement whilst only 9,8% of them disagree, with 21,6% remaining neutral.

Figure 5.2.30 The effectiveness of multiskilling needs to be evaluated by the organizational management.

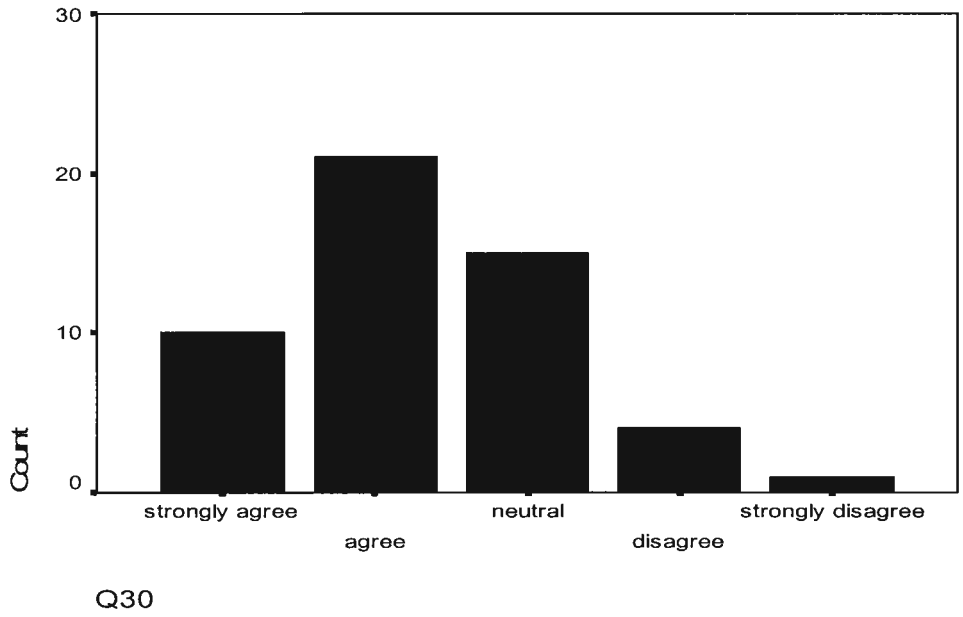

Table 5.2.30 Responses to Statement 30

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	10	19.6	19.6	19.6
	agree	21	41.2	41.2	60.8
	neutral	15	29.4	29.4	90.2
	disagree	4	7.8	7.8	98.0
	strongly disagree	1	2.0	2.0	100.0
	Total	51	100.0	100.0	

A bigger percentage of the respondents agree that the effectiveness of multiskilling needs to be evaluated by the organisational management. Figure 5.2.30 and table 5.2.30 above indicate that 19,6% of them strongly agree, 41,2% of them agree, 7,8% disagree and only 2% of them strongly disagree, whilst 29,4% are neutral.

5.3 Statistical Output of Research Findings - Managers

Figure 5.3.1 All the relevant stakeholders were part of the adoption of multiskilling.

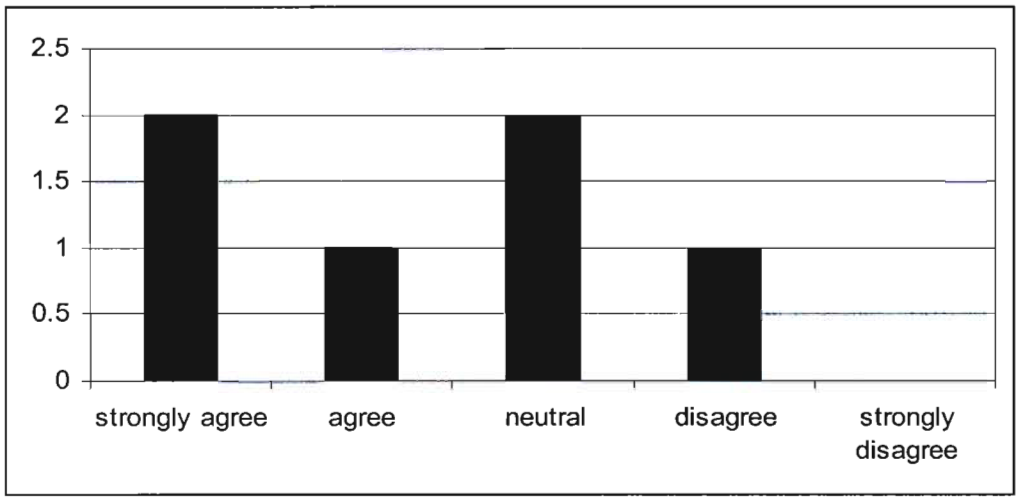

Table 5.3.1 Responses to Statement 1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	2	33.3	33.3	33.3
	agree	1	16.7	16.7	50.0
	neutral	2	33.3	33.3	83.3
	disagree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

From the above figure 5.6.1 and table 5.6.1 it is interesting to note that there is no common response from the managers with regards to whether or not all the relevant stakeholders were part of the adoption of multiskilling at Hulett Aluminium. One would have expected that there be a common response from management in this regard. Of the six managers who were given the questionnaire, 2 (33,3%) strongly agree with the statement, 1(16,7%) agrees, 1 (16,7%) disagrees and 2 (33,3%) are neutral.

Figure 5.3.2 All the relevant stakeholders were part of the adoption of multiskilling.

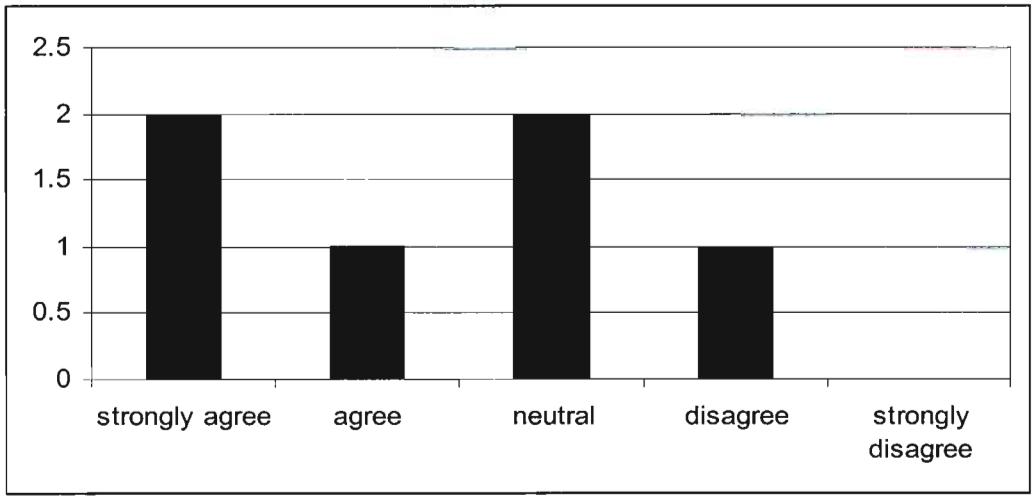

Table 5.3.2 Responses to Statement 2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	2	33.3	33.3	33.3
	agree	1	16.7	16.7	50.0
	neutral	2	33.3	33.3	83.3
	disagree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

It is interesting to note that some managers, two out of six, (33,3%) disagree that everybody within the organisation became aware of what multiskilling entails. One of them (16,7%) strongly agrees and three of them (50%) agree.

Figure 5.3.3 Everybody within the organization warmly welcomed the adoption of multiskilling.

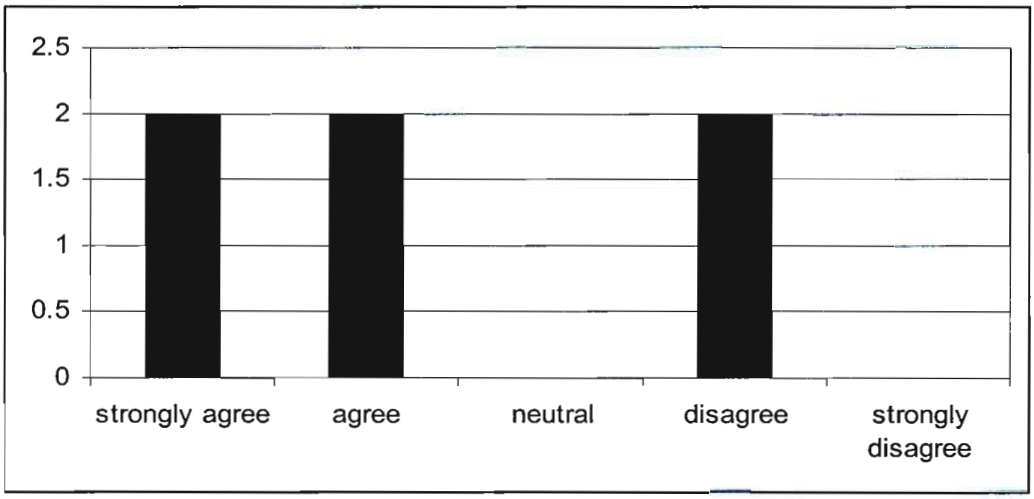

Table 5.3.3 Responses to Statement 3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	2	33.3	33.3	33.3
	agree	2	33.3	33.3	66.7
	disagree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

Managers are divided with regards to whether or not everybody within the organisation warmly welcomed multiskilling. Figure 5.6.3 and table 5.6.3 show that there are differences amongst them. Two of the six respondents (33,3%) strongly agree, another two (33,3%) agree, whilst the other two (33,3%) disagree.

Figure 5.3.4 It became easy for the organization to apply multiskilling.

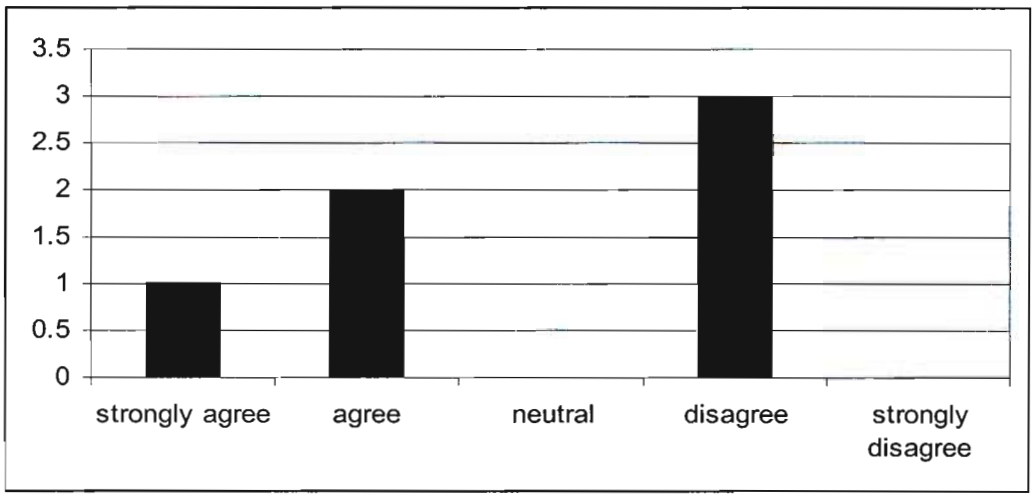

Table 5.3.4 Responses to Statement 4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	1	16.7	16.7	16.7
	agree	2	33.3	33.3	50.0
	disagree	3	50.0	50.0	100.0
	Total	6	100.0	100.0	

Figure 5.6.4 and table 5.6.4 illustrate that only one manager (16,7%) agrees that it became easy for the organisation to apply multiskilling. Two managers (33,3%) agree, whilst three of them (50%) disagree. Here we observe once again that there is a split in responses from the managers.

Figure 5.3.5 Top-level management was the main target for multiskilling.

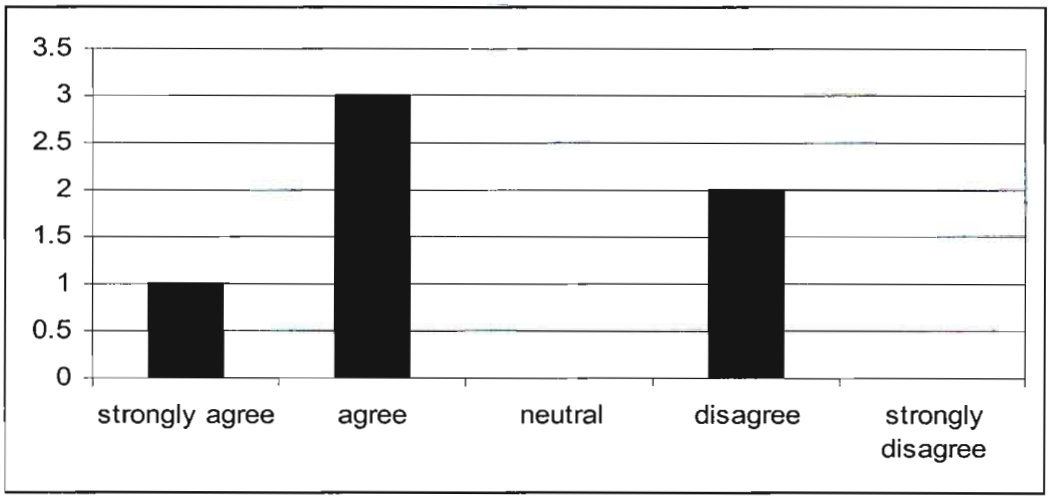

Table 5.3.5 Responses to Statement 5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	1	16.7	16.7	16.7
	disagree	3	50.0	50.0	66.7
	strongly disagree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

Figure 5.6.5 and table 5.6.5 show that five managers (83,3%) disagree that top-level managers were the main target for multiskilling. It is interesting to note that there is one manager who strongly agrees that multiskilling targeted top-level management.

Figure 5.3.6 Middle management was the main target for multiskilling.

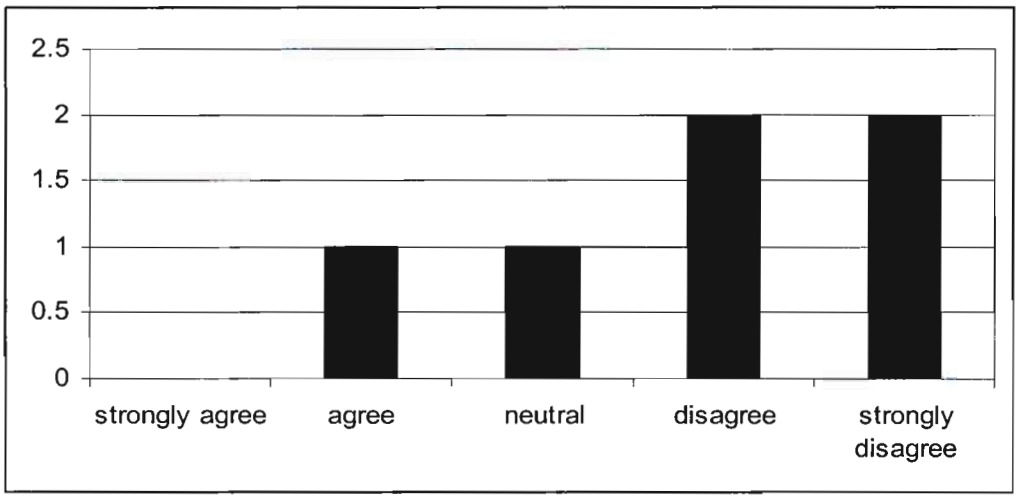

Table 5.3.6 Responses to Statement 6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	agree	1	16.7	16.7	16.7
	neutral	1	16.7	16.7	33.3
	disagree	2	33.3	33.3	66.7
	strongly disagree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

From the above figure 5.6.6 and table 5.6.6 we note that four managers (66,6%) disagree that middle management was the main target for multiskilling. One manager (16,7%) agrees, whilst one (16,7%) remains neutral.

Figure 5.3.7 Shop floor employees were the main target for multiskilling.

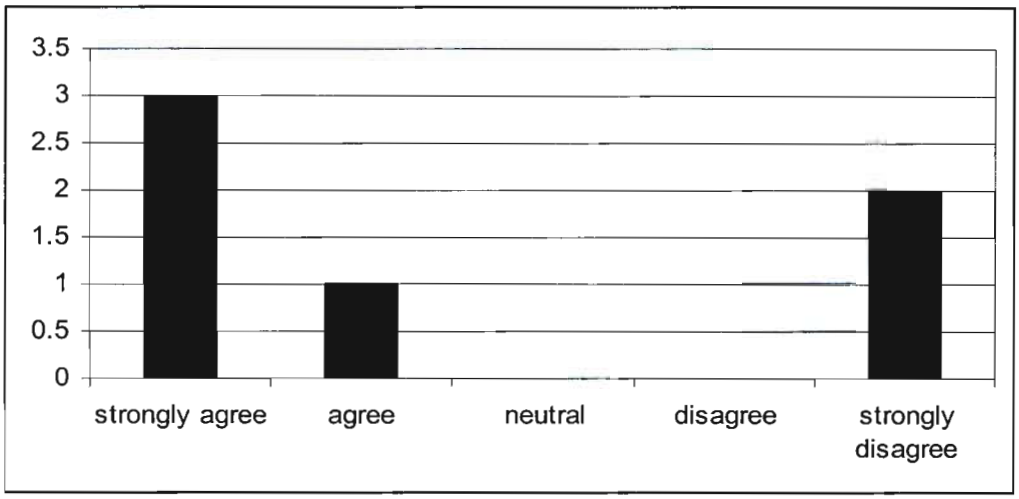

Table 5.3.7 Responses to Statement 7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	3	50.0	50.0	50.0
	agree	1	16.7	16.7	66.7
	strongly disagree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

Figure 5.3.7 and table 5.3.7 show that of the six managers, three (50%) strongly agree that shop floor employees were the main target for multiskilling. One manager (16,7%) agrees and, interestingly, two managers (33,3%) disagree with the statement. In other words, these latter two managers are of the opinion that Hulett Aluminium was targeting other groups other than the shop floor workers, when the organisation introduced multiskilling.

Figure 5.3.8 The organization is still grappling with some problems pertaining to multiskilling.

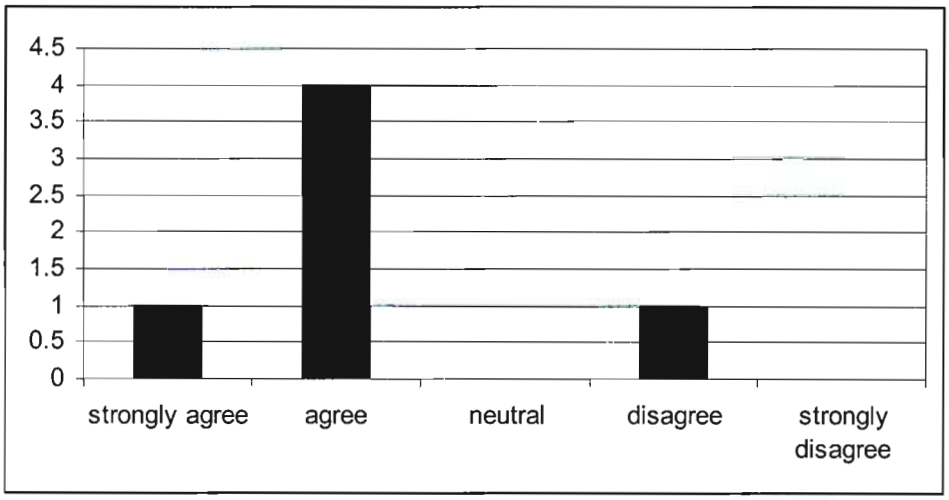

Table 5.3.8 Responses to Statement 8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	1	16.7	16.7	16.7
	agree	4	66.7	66.7	83.3
	disagree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

The above figure 5.3.8 and table 5.3.8 indicate that of the six managers, five (83,3%) agree that the organisation is still grappling with some problems pertaining to the implementation of multiskilling. Only one manager (16,7%) disagrees.

Figure 5.3.9 Training is an essential tool for multiskilling to be effective.

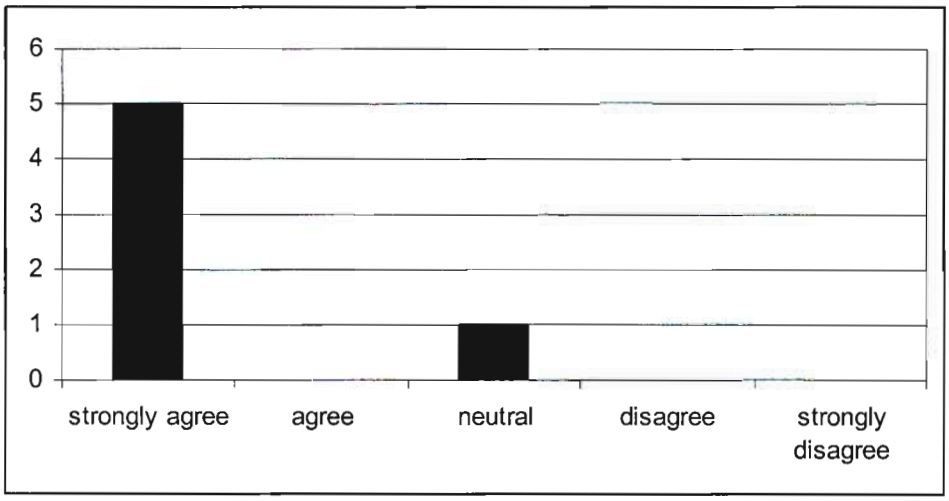

Table 5.3.9 Responses to Statement 9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	5	83.3	83.3	83.3
	neutral	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

With regards to training as an essential tool for multiskilling to be effective, figure 5.3.9 and table 5.3.9 show that five managers (83,3%) agree, with only one manager (16,7%) remaining neutral.

Figure 5.3.10 Multiskilling alleviates the problem of absenteeism.

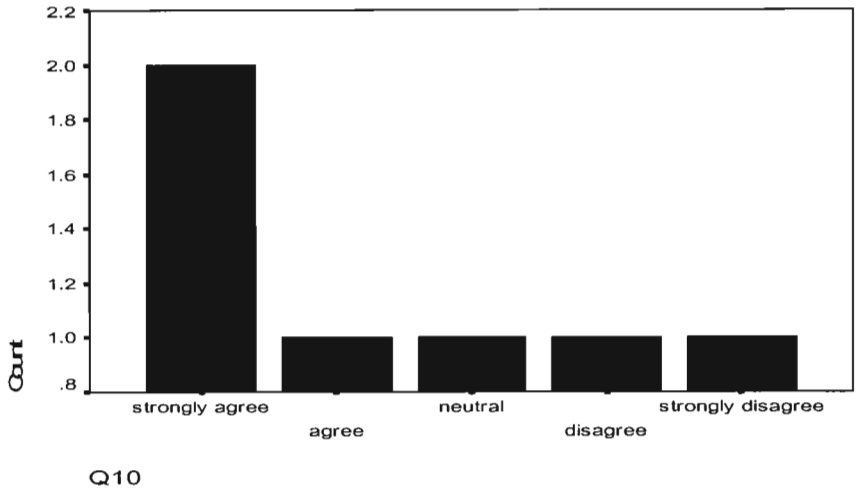

Table 5.3.10 Responses to Statement 10

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	2	33.3	33.3	33.3
	agree	1	16.7	16.7	50.0
	neutral	1	16.7	16.7	66.7
	disagree	1	16.7	16.7	83.3
	strongly disagree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

Figure 5.3.10 and table 5.3.10 show an even distribution of responses by the managers. Two of them (33,3%) strongly agree that multiskilling alleviates the problem of absenteeism. The other four managers are distributed amongst the other four remaining slots, one agreeing, one disagreeing , one strongly disagreeing and one remaining neutral (16,7% each).

Figure 5.3.11 A multiskilled workforce easily copes with the new, advanced technology.

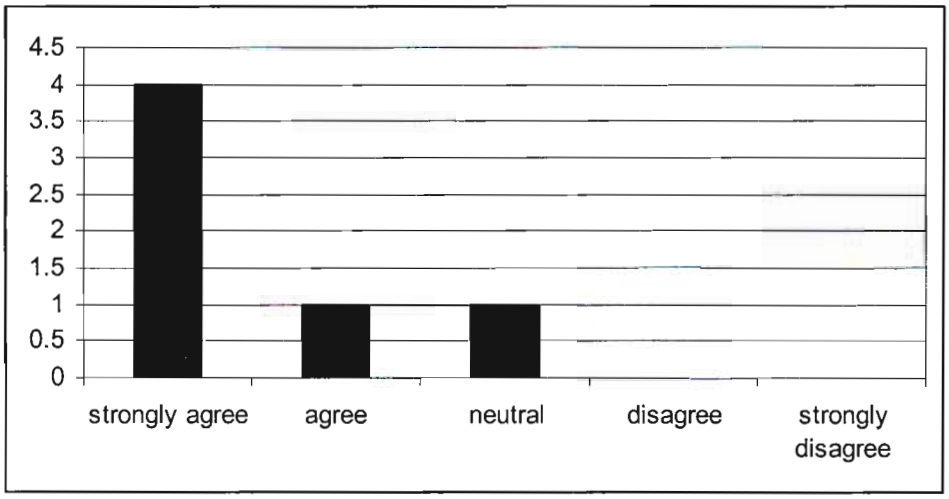

Table 5.3.11 Responses to Statement 11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	4	66.7	66.7	66.7
	agree	1	16.7	16.7	83.3
	neutral	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

There seems to be an agreement amongst managers that a multiskilled workforce easily copes with new, advanced technology. Figure 5.3.11 and table 5.3.11 show four managers (66,6%) strongly agreeing with the statement, one (16,7%) agreeing and one (16,7%) remaining neutral.

Figure 5.3.12 Multiskilled employees need appropriate resources (e.g. proper equipment) for the application of their skills.

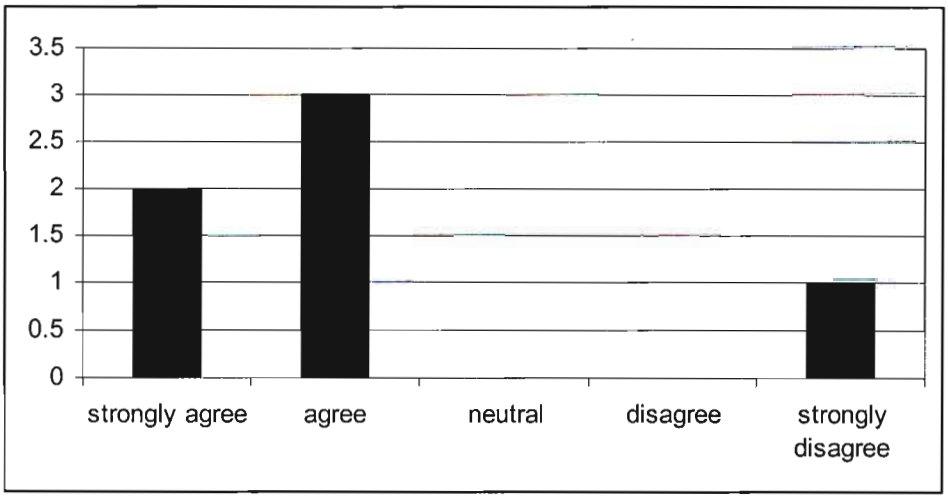

Table 5.3.12 Responses to Statement 12

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	2	33.3	33.3	33.3
	agree	3	50.0	50.0	83.3
	strongly disagree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

Figure 5.3.12 and table 5.3.12 show that of the six managers, two (33,3%) strongly agree that multiskilled employees need appropriate resources (e.g. proper equipment) for the application of their skills. Three of them (60%) agree, whilst one (16,7%) strongly disagrees.

Figure 5.3.13 A multiskilled workforce has a broad knowledge of the whole work of the organization.

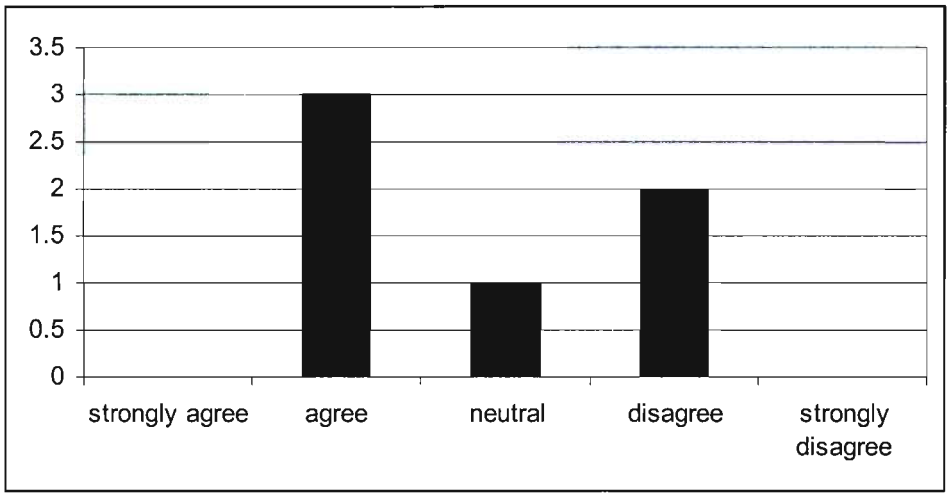

Table 5.3.13 Responses to Statement 13

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	agree	3	50.0	50.0	50.0
	neutral	1	16.7	16.7	66.7
	disagree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

There are differing views from management as to whether or not a multiskilled workforce has a broad knowledge of the whole work of the organisation. Figure 5.3.13 and table 5.3.13 illustrate that three managers (50%) agree, one (16,7%) is neutral, whereas two (33,3%) disagree.

Figure 5.3.14 Multiskilling enhances employee flexibility, enabling individuals to be competent in several tasks.

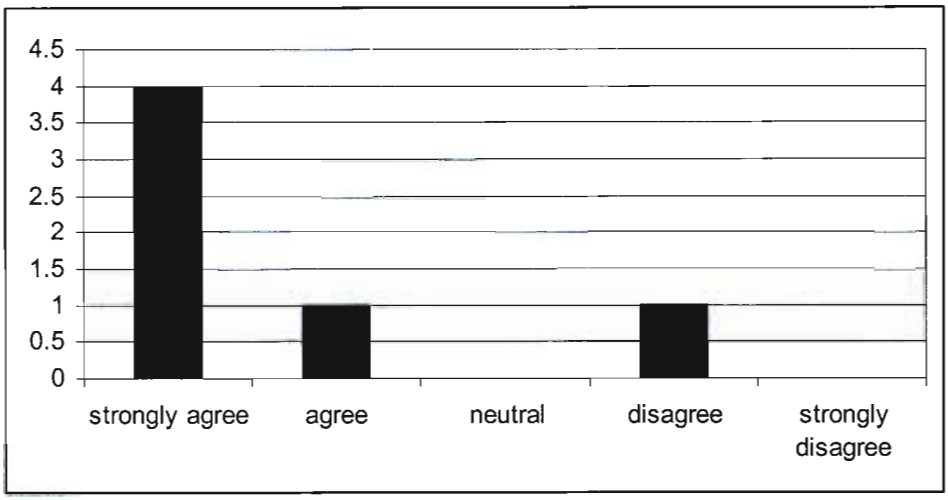

Table 5.3.14 Responses to Statement 14

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	4	66.7	66.7	66.7
	agree	1	16.7	16.7	83.3
	disagree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

Managers seem to share the same view with regards to the fact that multiskilling enhances employee flexibility, enabling individuals to be competent in many skills. Figure 5.3.14 and table 5.3.14 indicate that, of the six managers, four (66,6%) strongly agree with the statement, one (16,7%) agrees and one (16,7%) disagrees

Figure 5.3.15 Multiskilling improves worker efficiency.

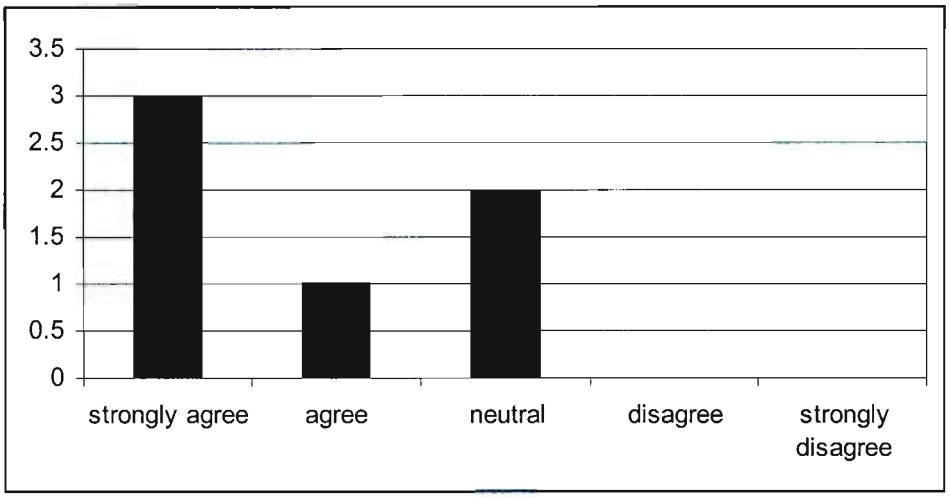

Table 5.3.15 Responses to Statement 15

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	3	50.0	50.0	50.0
	agree	1	16.7	16.7	66.7
	neutral	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

Figure 5.3.15 and table 5.3.15 indicate that three managers out of six (50%) strongly agree that multiskilling improves worker efficiency, one (16,7%) agrees, while two (33,3%) are neutral.

Figure 5.3.16 Multiskilling removes departmental or unit barriers.

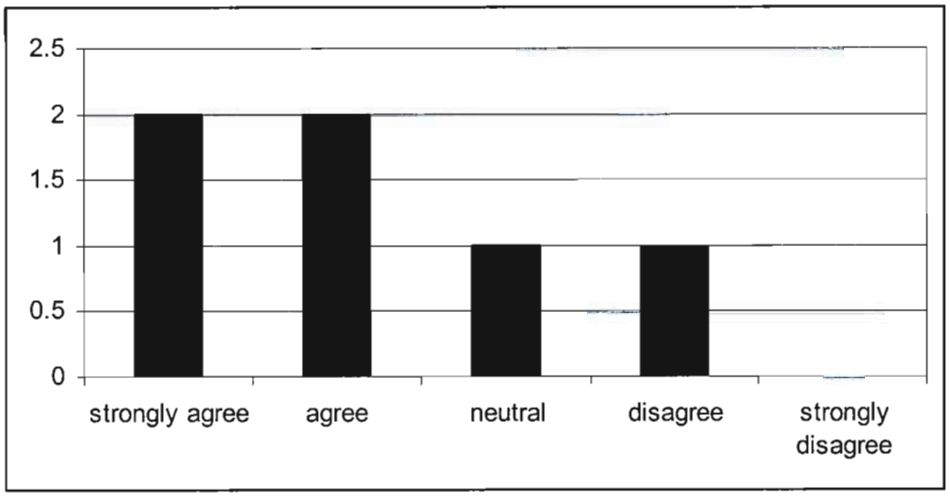

Table 5.3.16 Responses to Statement 16

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	2	33.3	33.3	33.3
	agree	2	33.3	33.3	66.7
	neutral	1	16.7	16.7	83.3
	disagree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

With the exception of one manager, all managers seem to share the same view that multiskilling removes departmental or unit barriers. Figure 5.3.16 and table 5.3.16 indicate that four managers (66,6%) agree with the statement, whilst one (16,7%) is neutral.

Figure 5.3.17 Multiskilling encourages teamwork.

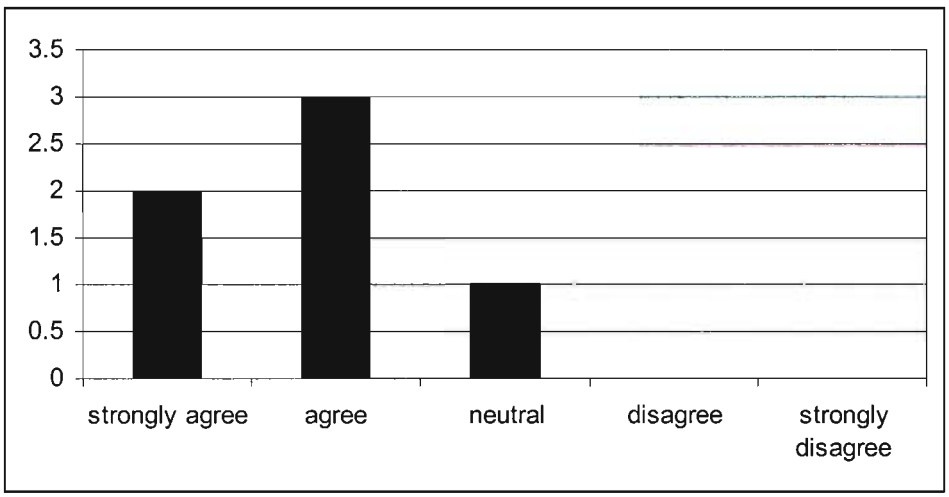

Table 5.3.17 Responses to Statement 17

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	2	33.3	33.3	33.3
	agree	3	50.0	50.0	83.3
	neutral	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

Managers seem to share the same opinion that multiskilling encourages teamwork. From the above statistical results we can observe that five managers (83,3%) agree with the statement, whereas only one (16,7%) is neutral.

Figure 5.3.18 Multiskilling contributes positively to Total Quality Management.

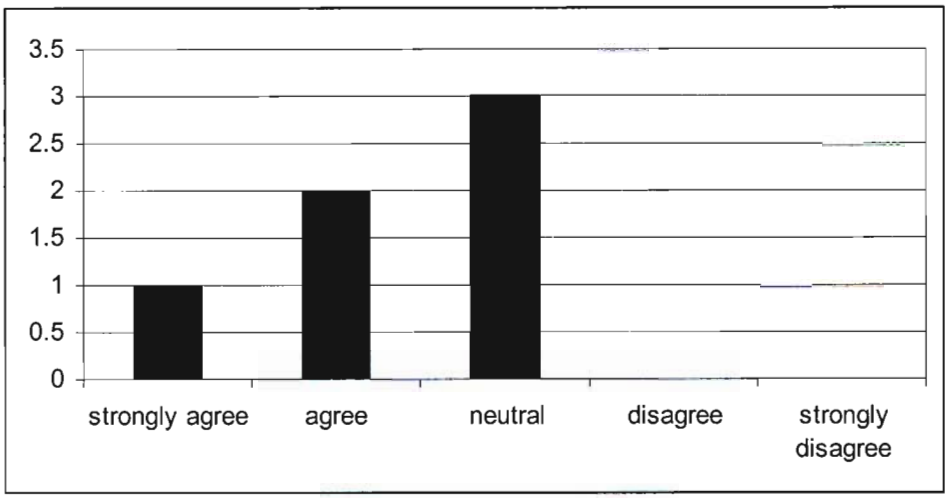

Table 5.3.18 Responses to Statement 18

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	1	16.7	16.7	16.7
	agree	2	33.3	33.3	50.0
	neutral	3	50.0	50.0	100.0
	Total	6	100.0	100.0	

There seems to be uncertainty on the part of management as to whether or not multiskilling contributes positively to Total Quality Management (TQM). Figure 5.3.18 and table 5.3.18 illustrate that only one (16,7%) strongly agrees with the statement, two (33,3%) agree and three (50%) remaining neutral. This situation shows that some managers do not draw correlation between multiskilling and TQM.

Figure 5.3.19 Multiskilling contributes to increased organizational labour productivity.

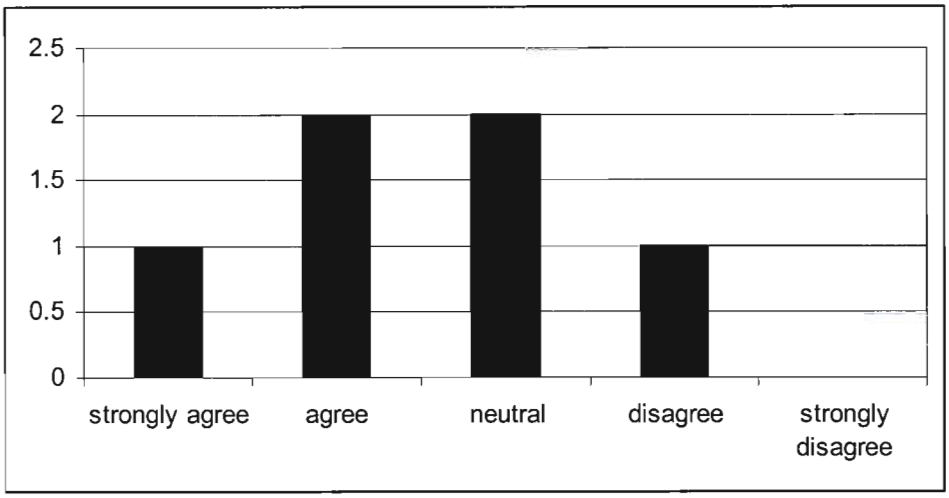

Table 5.3.19 Responses to Statement 19

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	1	16.7	16.7	16.7
	agree	2	33.3	33.3	50.0
	neutral	2	33.3	33.3	83.3
	disagree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

The statistical results shown by figure 5.3.19 and table 5.3.19 are quite interesting. Only one manager strongly agrees that multiskilling contributes to increased organisational labour productivity. Two managers (33,3%) agree, two (33,3%) are neutral and one (16,7%) disagrees. It is interesting to note that there is a manager who feels that multiskilling does not contribute to increased organisational labour productivity.

Figure 5.3.20 Multiskilling reduces organizational overall costs.

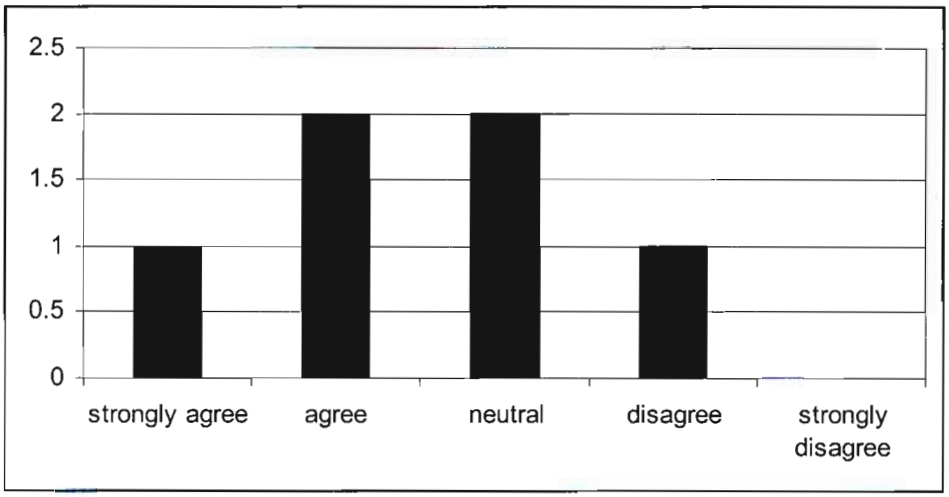

Table 5.3.20 Responses to Statement 20

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	1	16.7	16.7	16.7
	agree	2	33.3	33.3	50.0
	neutral	2	33.3	33.3	83.3
	strongly disagree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

Managers seem not to agree with regards to whether or not multiskilling reduces organisational overall costs. Figure 5.3.20 and table 5.3.20 show that only one manager (16,7%) strongly agree with the statement, two (33,35) agree, one (16,7%) disagrees and two (33,3%) are neutral.

Figure 5.3.21 Multiskilling reduces industrial conflicts.

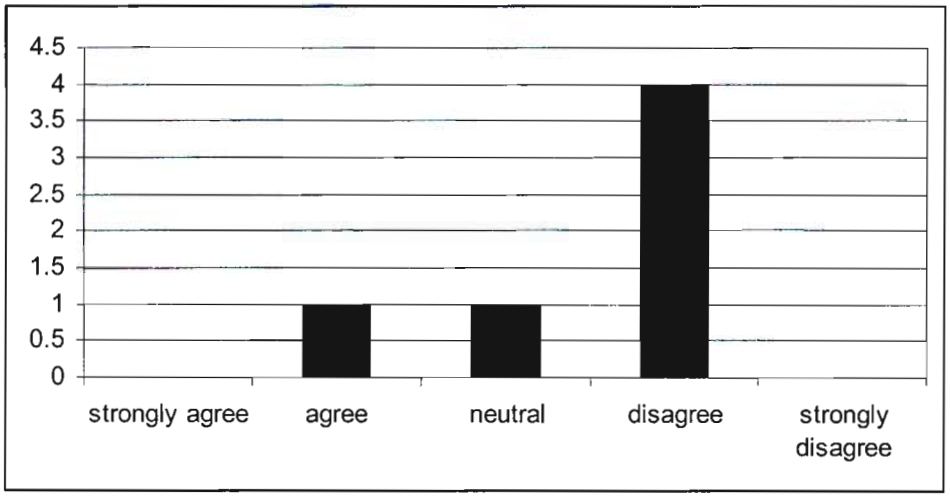

Table 5.3.21 Responses to Statement 21

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	agree	1	16.7	16.7	16.7
	neutral	1	16.7	16.7	33.3
	disagree	4	66.7	66.7	100.0
	Total	6	100.0	100.0	

Figure 5.3.21 and table 5.3.21 show that as many as four managers (66,6%) disagree that multiskilling reduces industrial conflicts. Only one manager (16,7%) agrees and one (16,7%) remains neutral.

Figure 5.3.22 Multiskilling is a very expensive and costly for the organization.

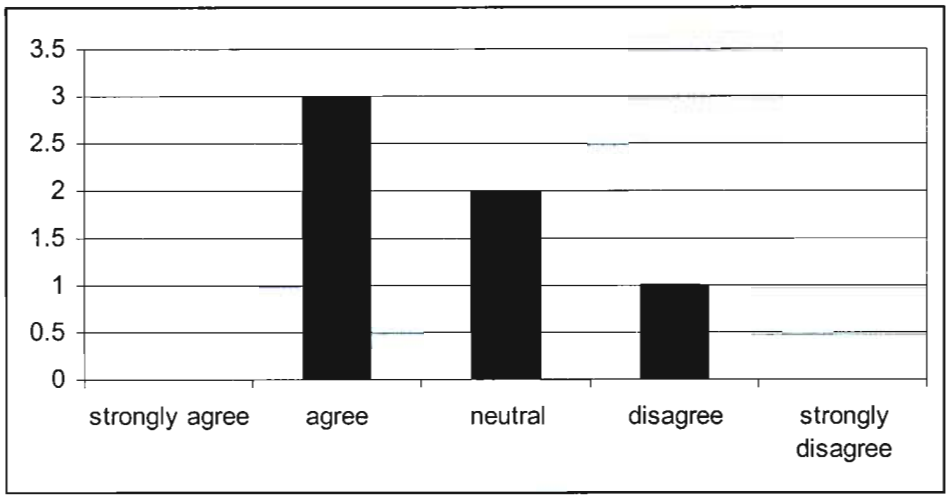

Table 5.3.22 Responses to Statement 22

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	agree	3	50.0	50.0	50.0
	neutral	2	33.3	33.3	83.3
	disagree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

From figure 5.3.22 and table 5.3.22 above, we observe that three managers (50%) agree that multiskilling is very expensive and costly for the organisation. Of the three managers, one qualified his agreeing with the statement by saying that multiskilling is expensive for the organisation over a short period, but that in the long run it is beneficial and cost effective to the company, as it pays back all the costs associated with its initial implementation. Two managers (33,3%) are neutral and one (16,7%) disagrees with the statement.

Figure 5.3.23 Multiskilling makes workers to lose a sense of specialization.

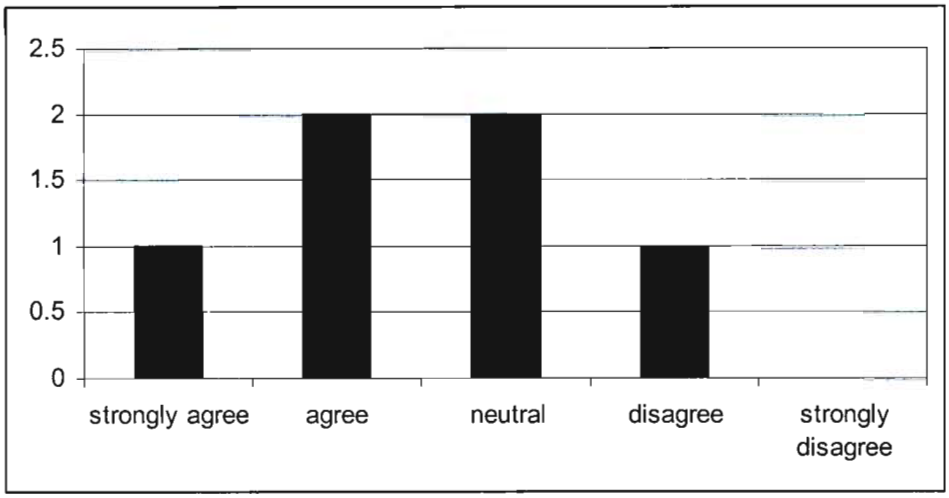

Table 5.3.23 Responses to Statement 23

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	1	16.7	16.7	16.7
	agree	2	33.3	33.3	50.0
	neutral	2	33.3	33.3	83.3
	disagree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

There seems to be differing views amongst managers with regards to whether or not multiskilling makes the workforce to lose a sense of specialisation. Figure 5.3.23 and table 5.3.23 illustrate that only one manager (16,7%) strongly agrees, two (33,3%) agree, two (33,3%) are neutral, whilst one (16,7%) disagrees.

Figure 5.3.24 Multiskilling makes the workforce to lose self-esteem.

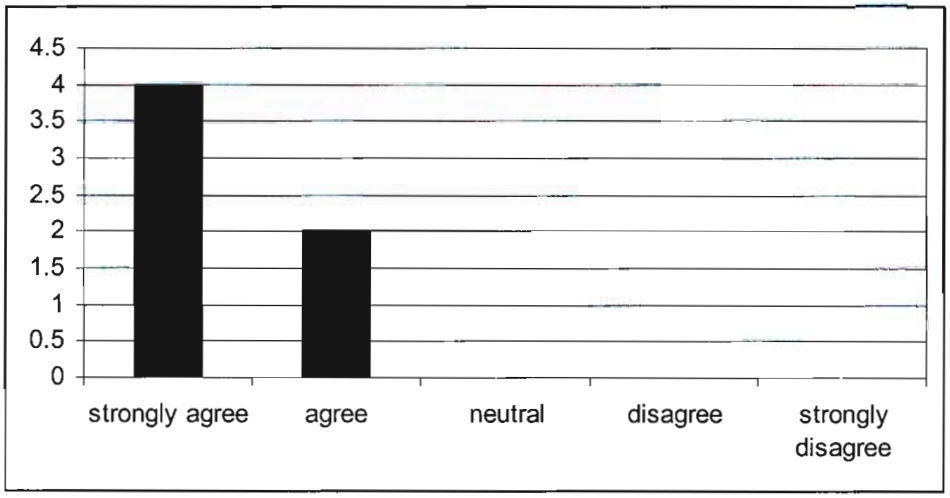

Table 5.3.24 Responses to Statement 24

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	disagree	4	66.7	66.7	66.7
	strongly disagree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

The above statistical results show that all managers (100%) disagree that multiskilling makes the workforce to lose a sense of self-esteem. All managers share the same view the employees do not lose a sense of self-esteem as a direct consequence of the introduction of multiskilling.

Figure 5.3.25 Multiskilling reduces boredom.

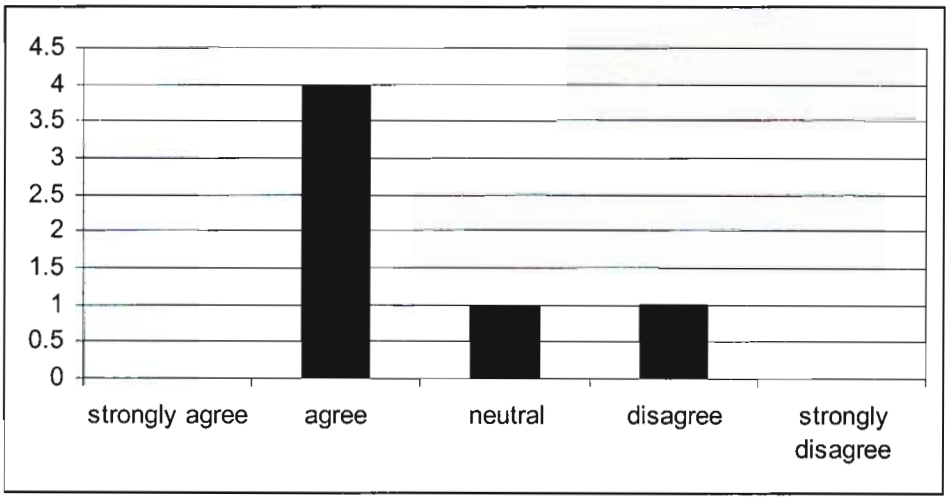

Table 5.3.25 Responses to Statement 25

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	agree	4	66.7	66.7	66.7
	neutral	1	16.7	16.7	83.3
	disagree	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

From figure 5.3.25 and table 5.3.25 above, we observe that four managers (66,6%) agree that multiskilling reduces boredom. One manager (16,7%) is neutral and one (16,7%) disagrees.

Figure 5.3.26 Multiskilling increases job satisfaction.

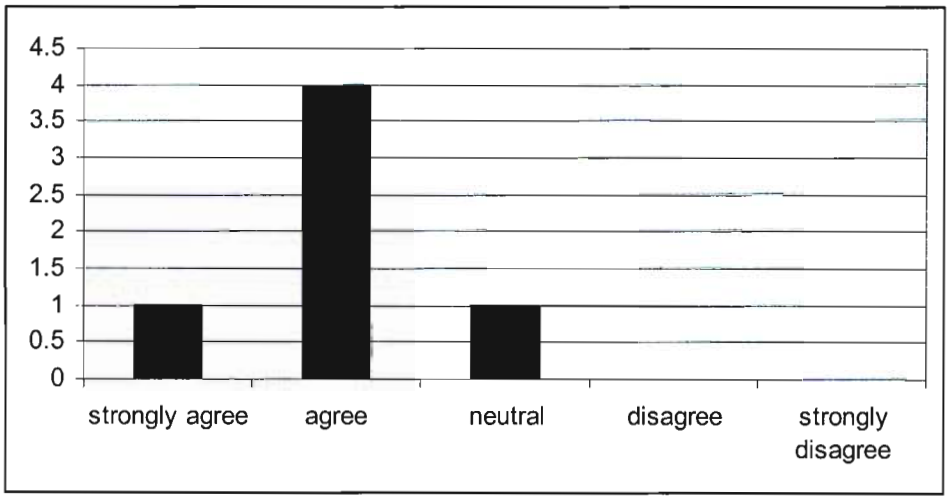

Table 5.3.26 Responses to Statement 26

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	1	16.7	16.7	16.7
	agree	4	66.7	66.7	83.3
	neutral	1	16.7	16.7	100.0
	Total	6	100.0	100.0	

Managers seem to share the same view with regards to whether or not multiskilling increases job satisfaction. The above statistical results show that one manager (16,7%) strongly agrees with the statement, four (66,6%) agree, and one (16,7%) is neutral.

Figure 5.3.27 Multiskilling contributes to reduced labour turnover.

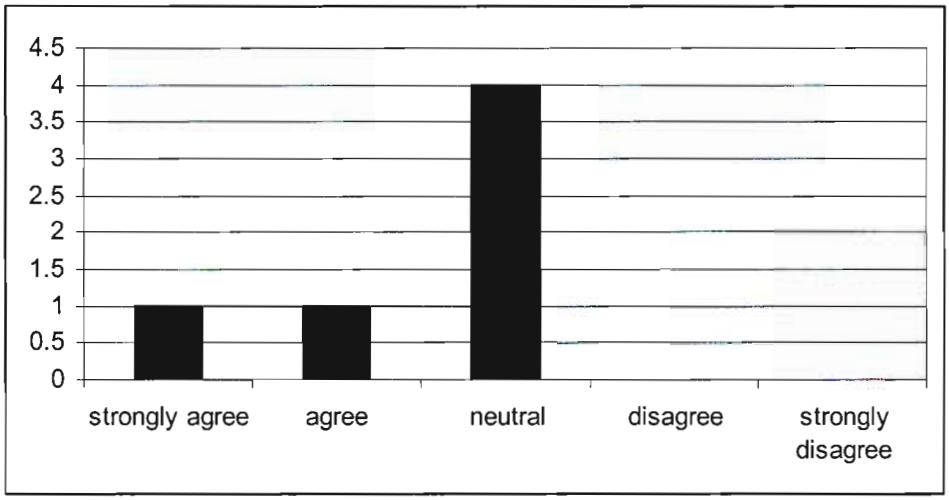

Table 5.3.27 Responses to Statement 27

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	1	16.7	16.7	16.7
	agree	1	16.7	16.7	33.3
	neutral	4	66.7	66.7	100.0
	Total	6	100.0	100.0	

Managers seem to be uncertain whether or not multiskilling has any contribution to reduced labour turnover. The above statistical results indicate that only one manager (16,7%) strongly agrees with the statement, one (16,7%) agrees and the remaining four (66,6%) are neutral.

Figure 5.3.28 Multiskilling increases the level of worker motivation.

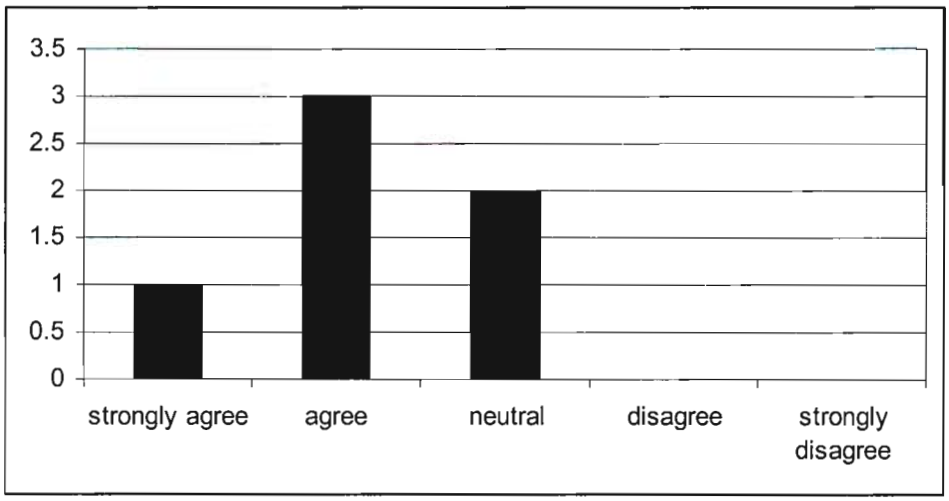

Table 5.3.28 Responses to Statement 28

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	1	16.7	16.7	16.7
	agree	3	50.0	50.0	66.7
	neutral	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

Managers seem to share the same view that multiskilling increases the level of worker motivation. The above statistical results indicate that one manager (16,7%) strongly agrees with the statement, three (50%) agree and two (33,3%) are neutral.

Figure 5.3.29 Rewards for a multiskilled workforce are a motivating factor in the workplace.

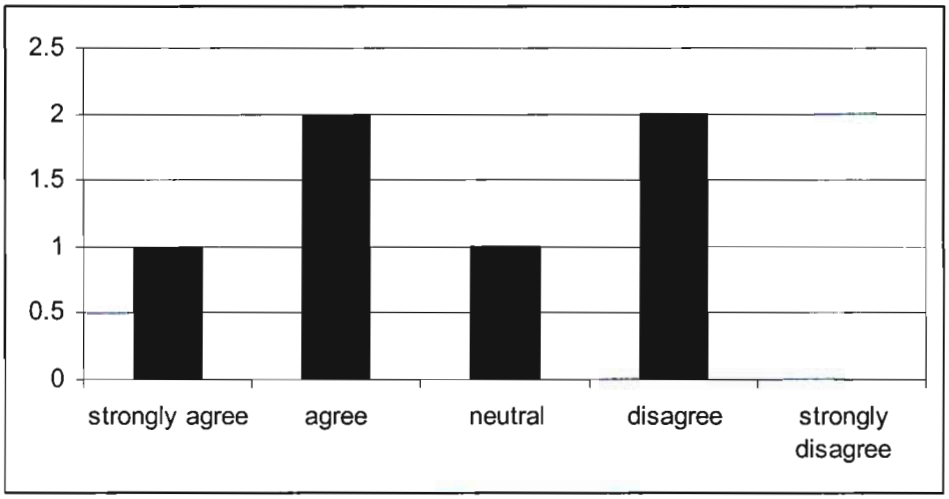

Table 5.3.29 Responses to Statement 29

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	1	16.7	16.7	16.7
	agree	2	33.3	33.3	50.0
	neutral	1	16.7	16.7	66.7
	disagree	2	33.3	33.3	100.0
	Total	6	100.0	100.0	

Managers are divided on their view with regards to rewards being a motivating factor for a multiskilled workforce in the workplace. Figure 5.3.29 and table 5.3.29 above show that one manager (16,7%) strongly agrees with the statement, two (33,3%) agree, one (16,7%) is neutral and two (33,3%) disagree.

Figure 5.3.30 The effectiveness of multiskilling needs to be evaluated by the organizational management.

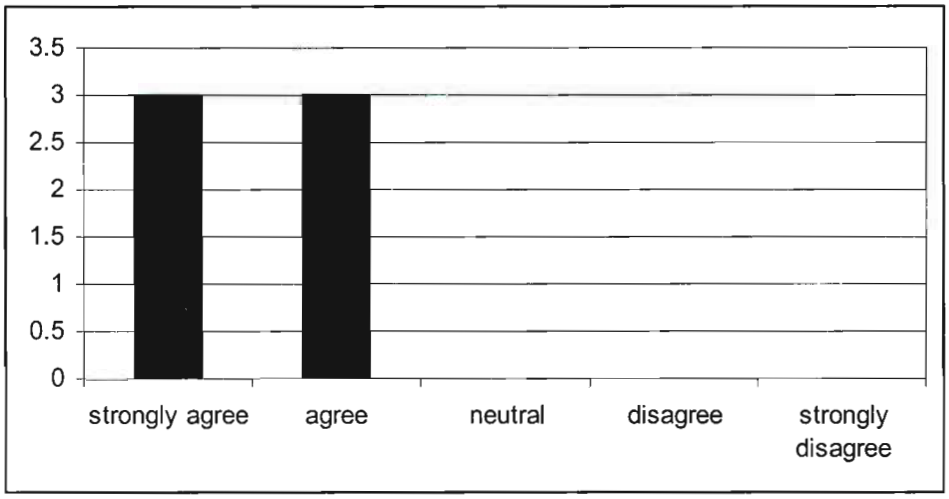

Table 5.3.30 Responses to Statement 30

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly agree	3	50.0	50.0	50.0
	agree	3	50.0	50.0	100.0
	Total	6	100.0	100.0	

With regards to the evaluation of the effectiveness of multiskilling by management, all managers agree that this should be the position. Figure 5.3.30 and table 5.3.30 above show that all managers (100%) agree that the effectiveness of multiskilling needs to be evaluated by management.

5.4 Statistical Output of Research Findings – Combined Analysis of Managers and Shop Floor Employees

REPORT:COMBINED ANALAYSIS

Figure 5.4.1 All the relevant stakeholders were part of the adoption of multiskilling.

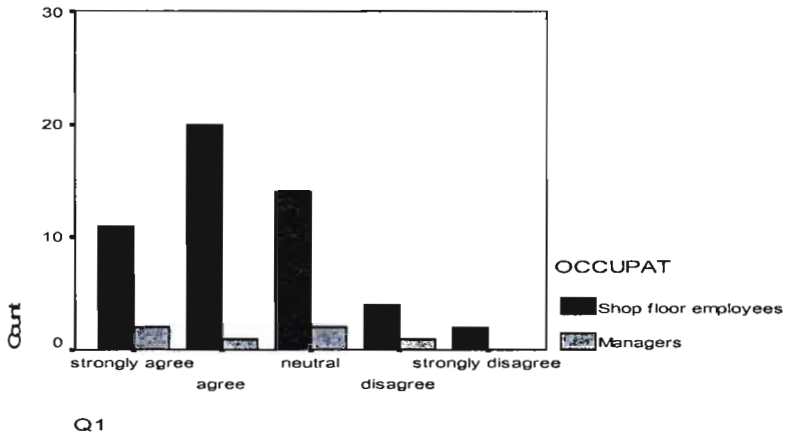

Table 5.4.1 Responses to Statement 1

		OCCUPAT		
		Shop floor employees	Managers	Total
Q1	strongly agree	11	2	13
	agree	20	1	21
	neutral	14	2	16
	disagree	4	1	5
	strongly disagree	2	0	2
Total		51	6	57

About 60% of the respondents agree that all the relevant stakeholders were part of the adoption of multiskilling.

Figure 5.4.2 Everybody within the organization became aware of what multiskilling entails

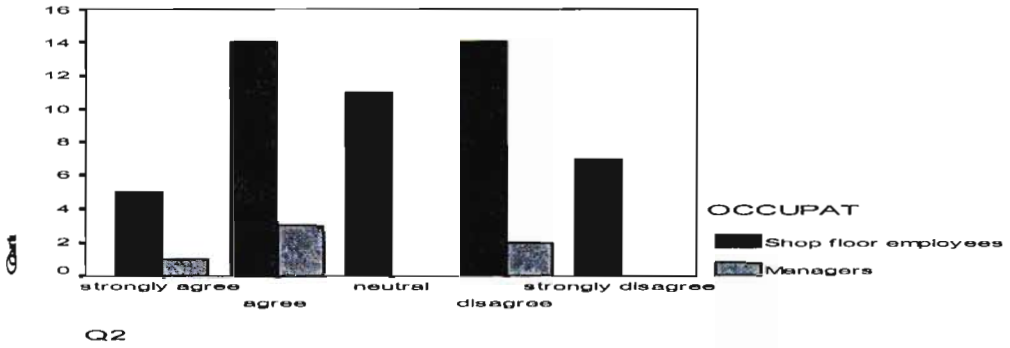

Table 5.4.2 Responses to Statement 2

		OCCUPAT		
		Shop floor employees	Managers	Total
Q2	strongly agree	5	1	6
	agree	14	3	17
	neutral	11	0	11
	disagree	14	2	16
	strongly disagree	7	0	7
Total		51	6	57

About 40% of the respondents agree and disagree that everybody within the organization became aware of what multiskilling entail

Figure 5.4.3 Everybody within the organization warmly welcomed the adoption of multiskilling.

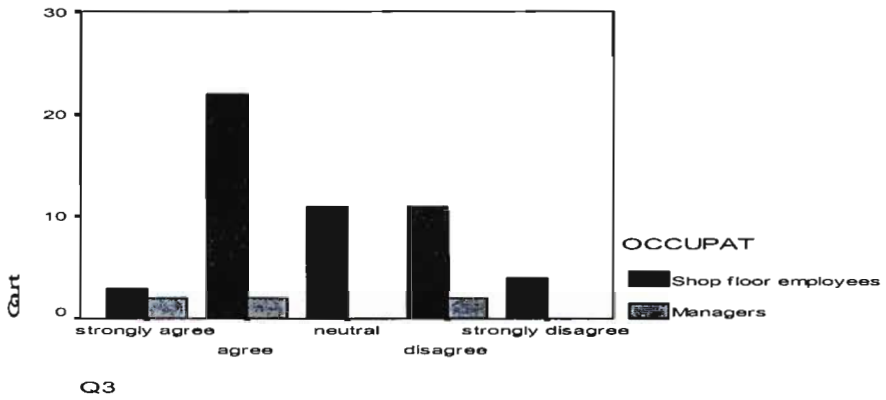

Table 5.4.3 Responses to Statement 3

		OCCUPAT		
		Shop floor employees	Managers	Total
Q3	strongly agree	3	2	5
	agree	22	2	24
	neutral	11	0	11
	disagree	11	2	13
	strongly disagree	4	0	4
Total		51	6	57

About 51% of the respondents agree with respect to this statement.

Figure 5.4.4 It became easy for the organization to apply multiskilling.

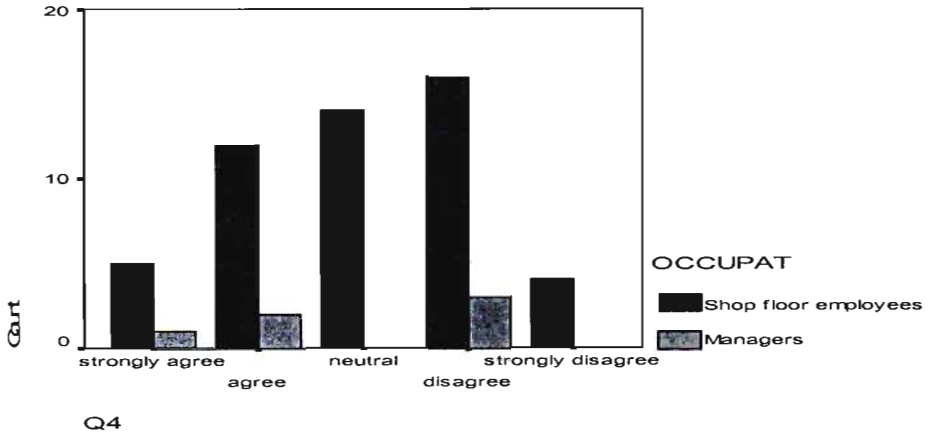

Table 5.4.4 Responses to Statement 4

		OCCUPAT		Total
		Shop floor employees	Managers	
Q4	strongly agree	5	1	6
	agree	12	2	14
	neutral	14	0	14
	disagree	16	3	19
	strongly disagree	4	0	4
Total		51	6	57

The modal response for this statement is disagree and is about 40.3%

Figure 5.4.5 Top-level management was the main target for multiskilling.

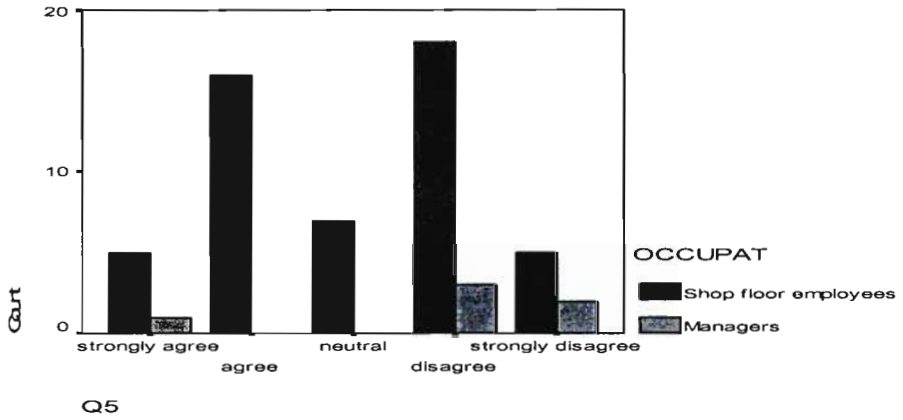

Table 5.4.5 Responses to Statement 5

		OCCUPAT		
		Shop floor employees	Managers	Total
Q5	strongly agree	5	1	6
	agree	16	0	16
	neutral	7	0	7
	disagree	18	3	21
	strongly disagree	5	2	7
Total		51	6	57

About 49.1% of the respondents disagree that top-level management was the main target for multiskilling.

Figure 5.4.6 Middle management was the main target for multiskilling.

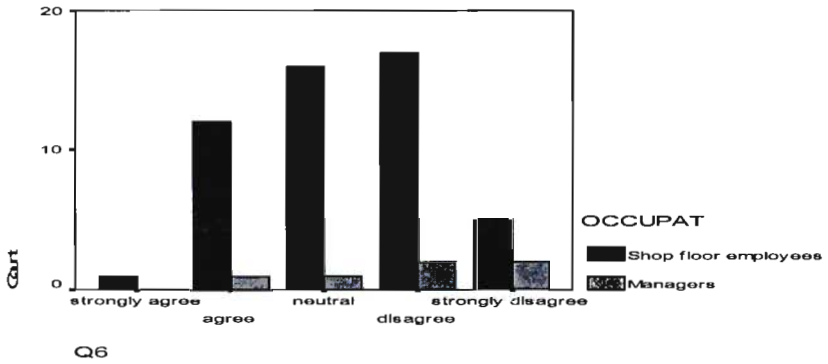

Table 5.4.6 Responses to Statement 6

		OCCUPAT		
		Shop floor employees	Managers	Total
Q6	strongly agree	1	0	1
	agree	12	1	13
	neutral	16	1	17
	disagree	17	2	19
	strongly disagree	5	2	7
Total		51	6	57

The modal response for this statement is disagree and about 45.6% of the respondents feel this way

Figure 5.4.7 Shop floor employees were the main target for multiskilling.

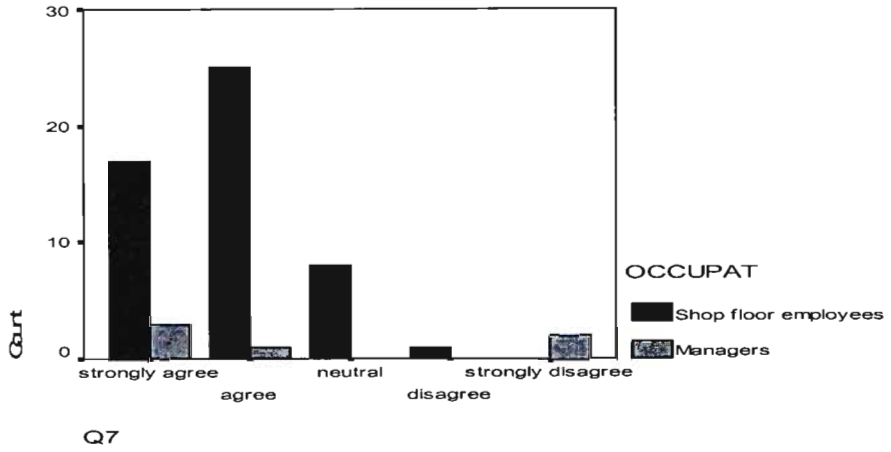

Table 5.4.7 Responses to Statement 7

		OCCUPAT		Total
		Shop floor employees	Managers	
Q7	strongly agree	17	3	20
	agree	25	1	26
	neutral	8	0	8
	disagree	1	0	1
	strongly disagree	0	2	2
Total		51	6	57

About 80.7% of the respondents feel that shop floor employees were the target for multiskilling

Figure 5.4.8 The organization is still grappling with some problems pertaining to multiskilling.

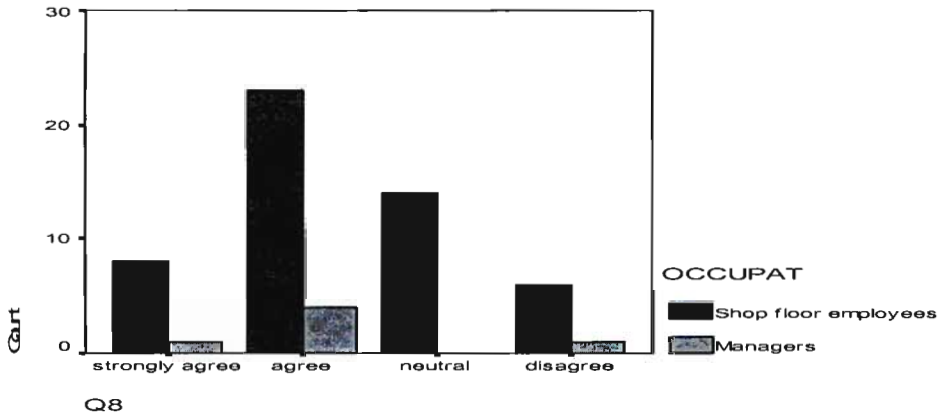

Table 5.4.8 Responses to Statement 8

		OCCUPAT		
		Shop floor employees	Managers	Total
Q8	strongly agree	8	1	9
	agree	23	4	27
	neutral	14	0	14
	disagree	6	1	7
Total		51	6	57

About 63.2% of the respondents represent the "agree" for this statement

Figure 5.4.9 Training is an essential tool for multiskilling to be effective.

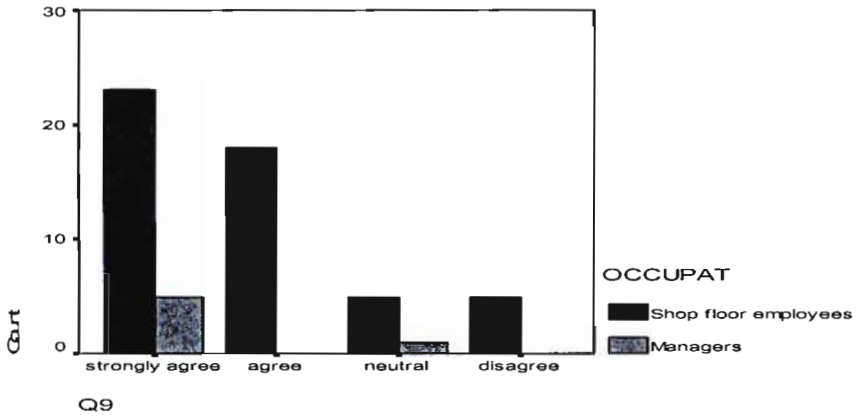

Table 5.4.9 Responses to Statement 9

		OCCUPAT		
		Shop floor employees	Managers	Total
Q9	strongly agree	23	5	28
	agree	18	0	18
	neutral	5	1	6
	disagree	5	0	5
Total		51	6	57

About 80.7% of the respondets feel that training is an essential tool for multiskilling to be effective

Figure 5.4.10 Multiskilling alleviates the problem of absenteeism.

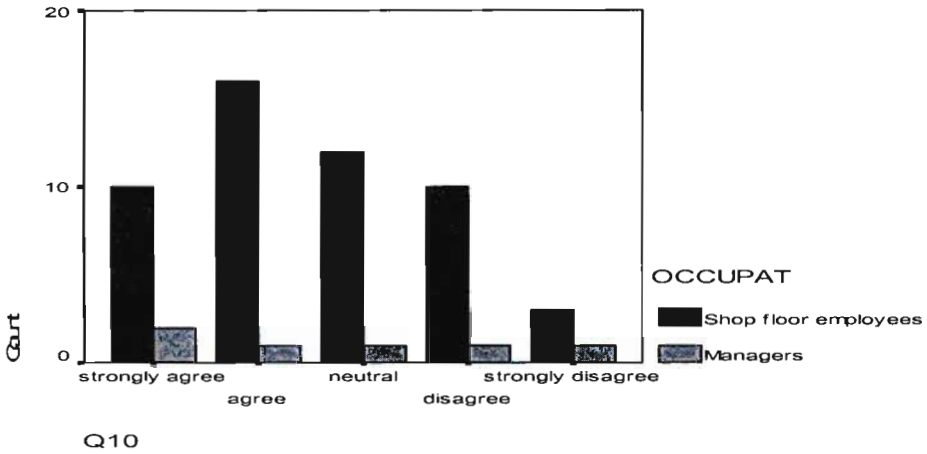

Table 5.4.10 Responses to Statement 10

		OCCUPAT		
		Shop floor employees	Managers	Total
Q10	strongly agree	10	2	12
	agree	16	1	17
	neutral	12	1	13
	disagree	10	1	11
	strongly disagree	3	1	4
Total		51	6	57

About 50.8% of the sample agree with this statement

Figure 5.4.11 A multiskilled workforce easily copes with the new, advanced technology.

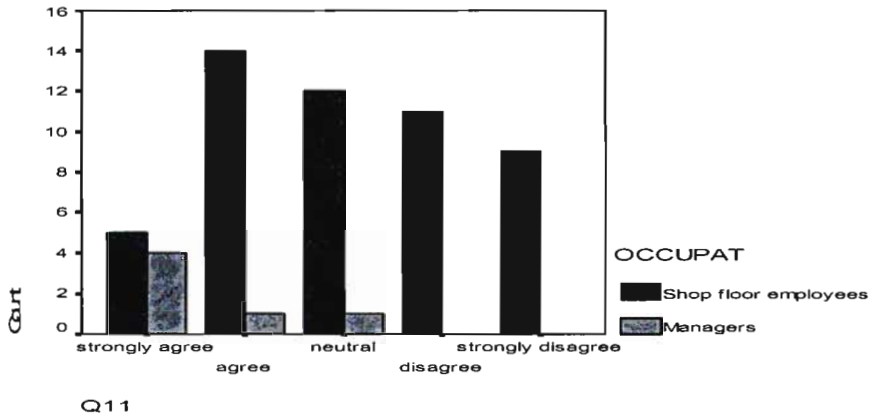

Table 5.4.11 Responses to Statement 11

		OCCUPAT		Total
		Shop floor employees	Managers	
Q11	strongly agree	5	4	9
	agree	14	1	15
	neutral	12	1	13
	disagree	11	0	11
	strongly disagree	9	0	9
Total		51	6	57

The modal response for this statement is agree but also followed by neutral and disagrees

Figure 5.4.12 Multiskilled employees need appropriate resources (e.g. proper equipment) for the application of their skills.

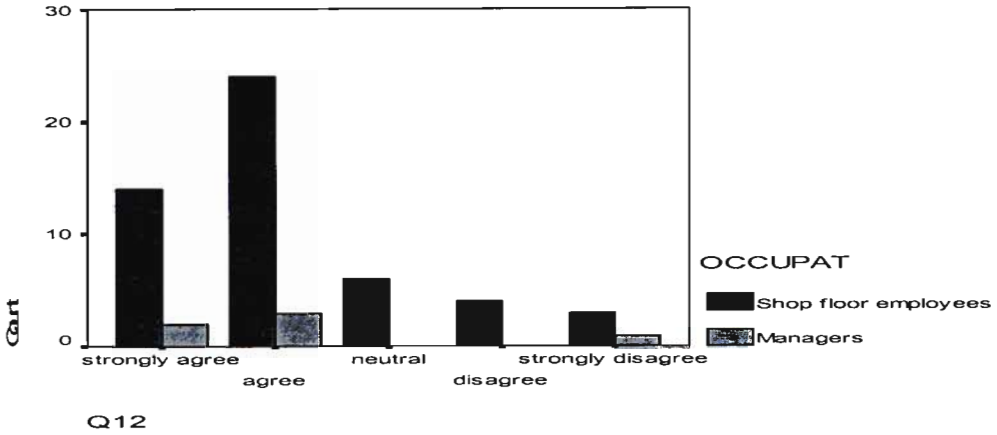

Table 5.4.12 Responses to Statement 10

		OCCUPAT		Total
		Shop floor employees	Managers	
Q12	strongly agree	14	2	16
	agree	24	3	27
	neutral	6	0	6
	disagree	4	0	4
	strongly disagree	3	1	4
Total		51	6	57

About 75.4% of the respondents agree with this statement

Figure 5.4.13 A multiskilled workforce has a broad knowledge of the whole work of the organization.

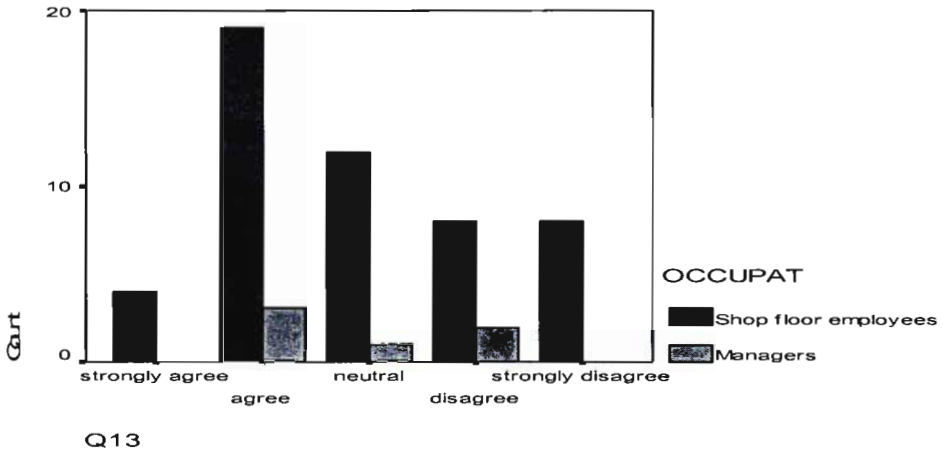

Table 5.4.13 Responses to Statement 13

		OCCUPAT		
		Shop floor employees	Managers	Total
Q13	strongly agree	4	0	4
	agree	19	3	22
	neutral	12	1	13
	disagree	8	2	10
	strongly disagree	8	0	8
Total		51	6	57

The modal response for this statement was agree(38.5%)

Figure 5.4.14 Multiskilling enhances employee flexibility, enabling individuals to be competent in several tasks.

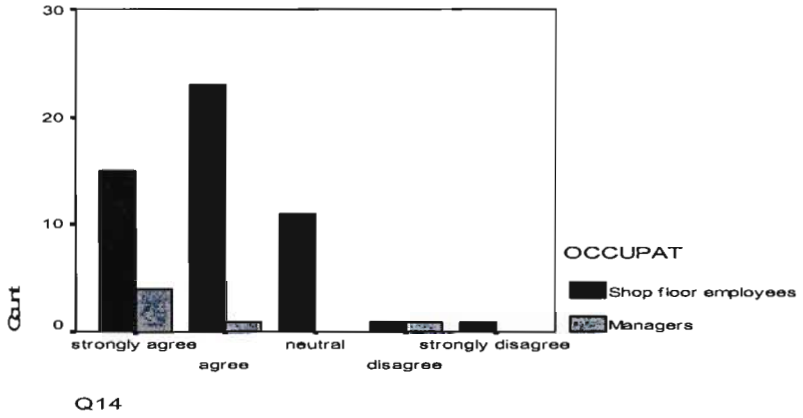

Table 5.4.14 Responses to Statement 14

		OCCUPAT		Total
		Shop floor employees	Managers	
Q14	strongly agree	15	4	19
	agree	23	1	24
	neutral	11	0	11
	disagree	1	1	2
	strongly disagree	1	0	1
Total		51	6	57

About 75.4% of the sample agree with this statement

Figure 5.4.15 Multiskilling improves worker efficiency.

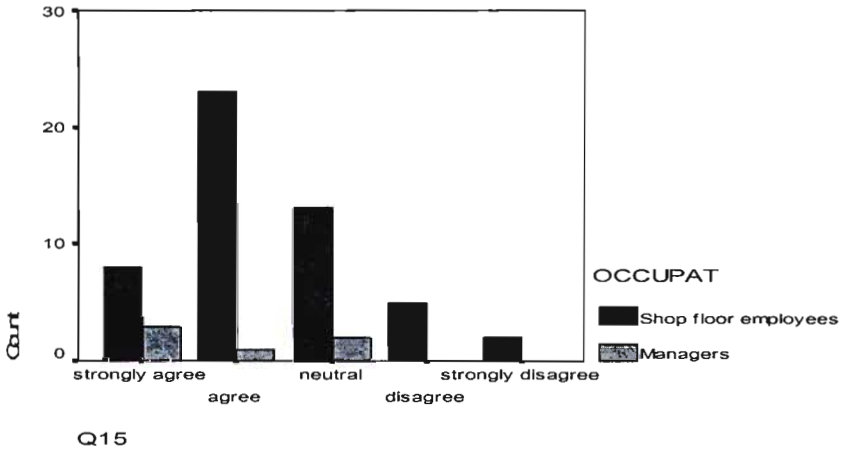

Table 5.4.15 Responses to Statement 15

		OCCUPAT		Total
		Shop floor employees	Managers	
Q15	strongly agree	8	3	11
	agree	23	1	24
	neutral	13	2	15
	disagree	5	0	5
	strongly disagree	2	0	2
Total		51	6	57

About 61.4% of the sample agree that multilskilling improves worker efficiency

Figure 5.4.16 Multiskilling removes departmental or unit barrier

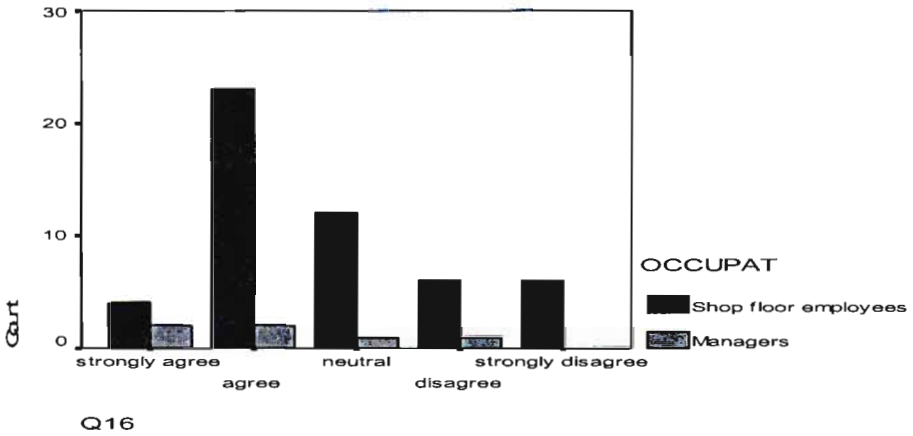

Table 5.4.16 Responses to Statement 16

		OCCUPAT		
		Shop floor employees	Managers	Total
Q16	strongly agree	4	2	6
	agree	23	2	25
	neutral	12	1	13
	disagree	6	1	7
	strongly disagree	6	0	6
Total		51	6	57

About 54.3% of the sample agree that Multiskilling removes departmental or unit barriers

Figure 5.4.17 Multiskilling encourages teamwork.

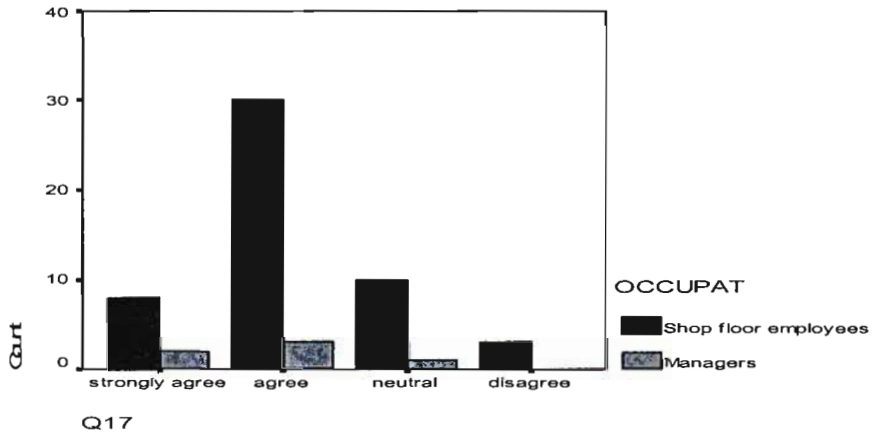

Table 5.4.17 Responses to Statement 17

		OCCUPAT		
		Shop floor employees	Managers	Total
Q17	strongly agree	8	2	10
	agree	30	3	33
	neutral	10	1	11
	disagree	3	0	3
Total		51	6	57

About 75.4% of the respondents agree that multiskilling encourage teamwork

Figure 5.4.18 Multiskilling contributes positively to Total Quality Management.

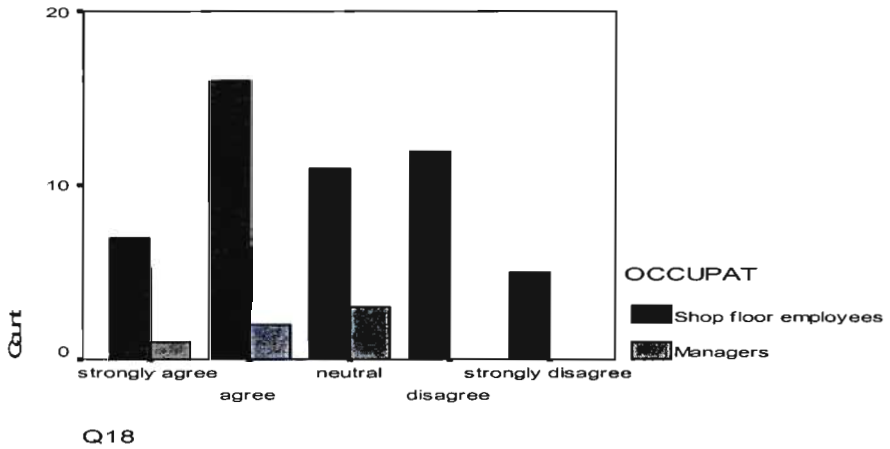

Table 5.4.18 Responses to Statement 18

		OCCUPAT		
		Shop floor employees	Managers	Total
Q18	strongly agree	7	1	8
	agree	16	2	18
	neutral	11	3	14
	disagree	12	0	12
	strongly disagree	5	0	5
Total		51	6	57

The modal response for this statement was agree (31.6%)

Figure 5.4.19 Multiskilling contributes to increased organizational labour productivity.

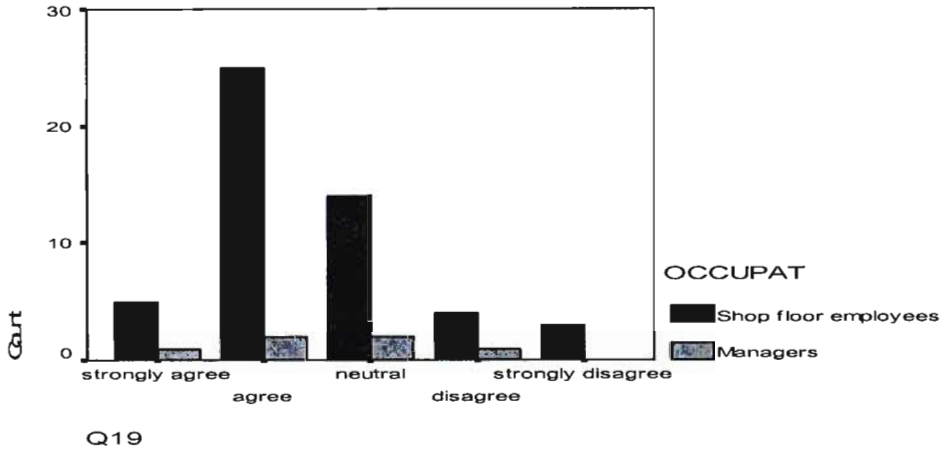

Table 5.4.19 Responses to Statement 19

		OCCUPAT		
		Shop floor employees	Managers	Total
Q19	strongly agree	5	1	6
	agree	25	2	27
	neutral	14	2	16
	disagree	4	1	5
	strongly disagree	3	0	3
Total		51	6	57

The modal response for this statement was agree(47.3%)

Figure 5.4.20 Multiskilling reduces organizational overall costs.

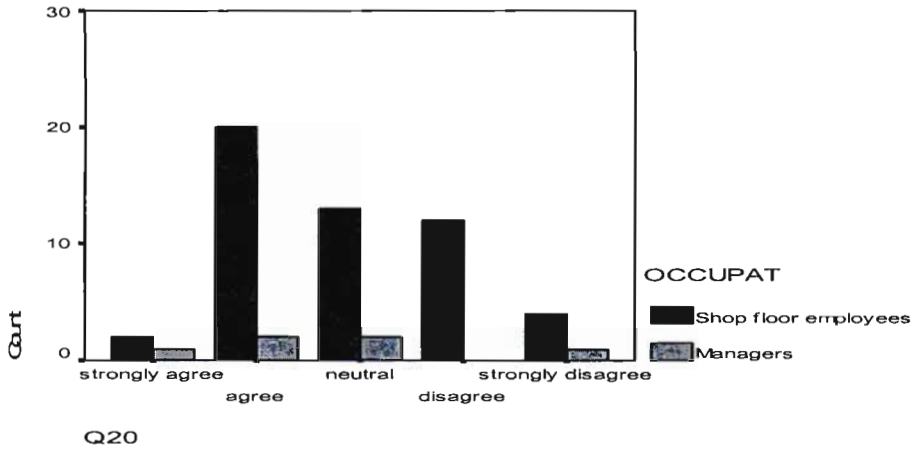

Table 5.4.20 Responses to Statement 20

		OCCUPAT		Total
		Shop floor employees	Managers	
Q20	strongly agree	2	1	3
	agree	20	2	22
	neutral	13	2	15
	disagree	12	0	12
	strongly disagree	4	1	5
Total		51	6	57

The modal response for this statement was agree(38.6%)

Figure 5.4.21 Multiskilling reduces industrial conflicts.

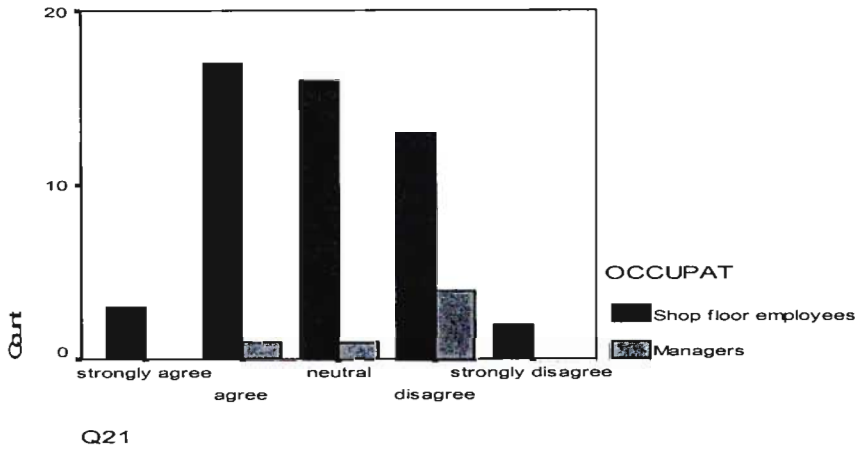

Table 5.4.21 Responses to Statement 21

		OCCUPAT		
		Shop floor employees	Managers	Total
Q21	strongly agree	3	0	3
	agree	17	1	18
	neutral	16	1	17
	disagree	13	4	17
	strongly disagree	2	0	2
Total		51	6	57

The modal response for this statement was agree(31.5%) followed by neutral(29.8%) and disagree(29.8%)

Figure 5.4.22 Multiskilling is a very expensive and costly for the organization.

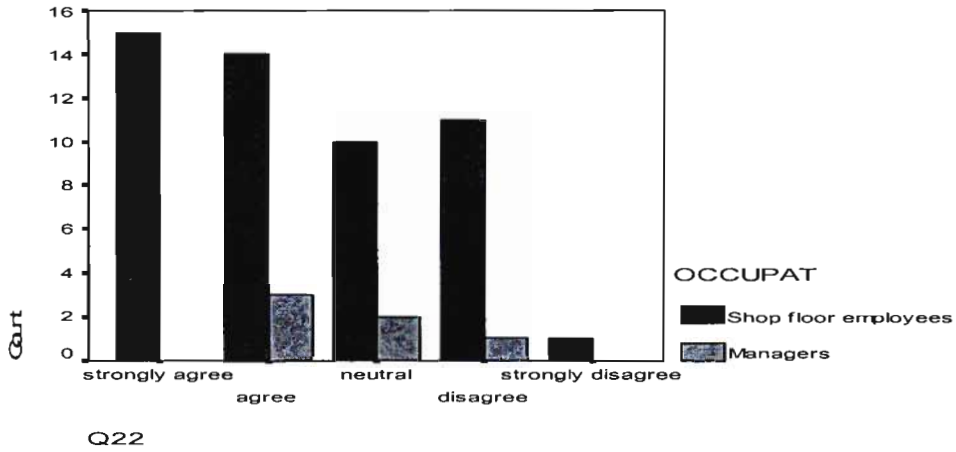

Table 5.4.22 Responses to Statement 22

		OCCUPAT		Total
		Shop floor employees	Managers	
Q22	strongly agree	15	0	15
	agree	14	3	17
	neutral	10	2	12
	disagree	11	1	12
	strongly disagree	1	0	1
Total		51	6	57

About 56.1% feel that Multiskilling is a very expensive and costly for the organization

Figure 5.4.23 Multiskilling makes workers to lose a sense of specialization.

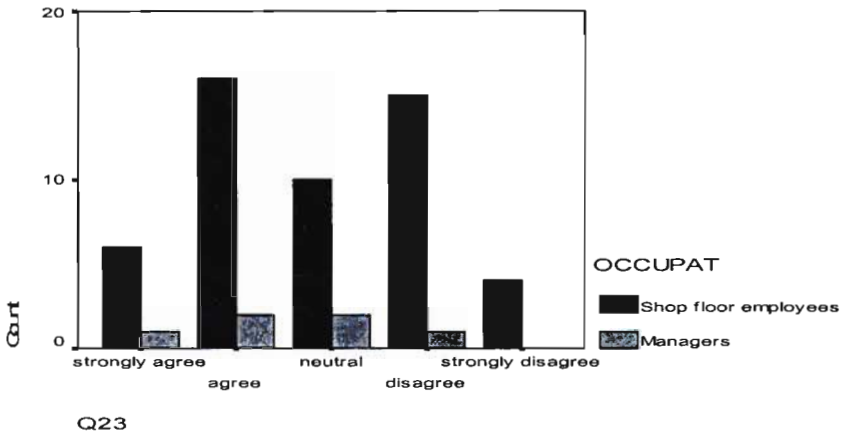

Table 5.4.23 Responses to Statement 23

		OCCUPAT		Total
		Shop floor employees	Managers	
Q23	strongly agree	6	1	7
	agree	16	2	18
	neutral	10	2	12
	disagree	15	1	16
	strongly disagree	4	0	4
Total		51	6	57

About 43.9% feel that Multiskilling makes workers to lose a sense of specialization

Figure 5.4.24 Multiskilling makes the workforce to lose self-esteem.

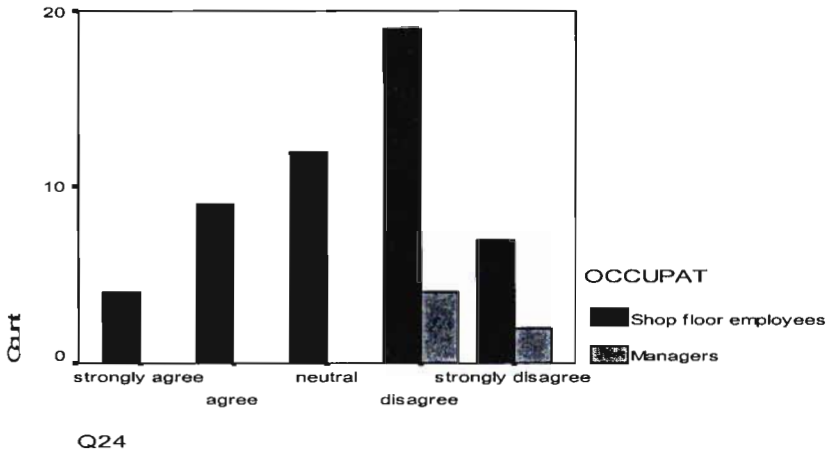

Table 5.4.24 Responses to Statement 24

		OCCUPAT		
		Shop floor employees	Managers	Total
Q24	strongly agree	4	0	4
	agree	9	0	9
	neutral	12	0	12
	disagree	19	4	23
	strongly disagree	7	2	9
Total		51	6	57

About 56.1% disagree that Multiskilling makes the workforce to lose self-esteem

Figure 5.4.25 Multiskilling reduces boredom.

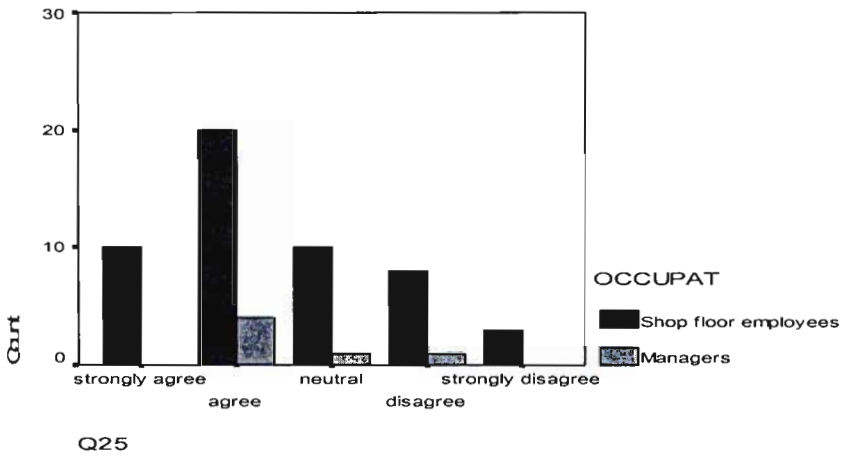

Table 5.4.25 Responses to Statement 25

		OCCUPAT		Total
		Shop floor employees	Managers	
Q25	strongly agree	10	0	10
	agree	20	4	24
	neutral	10	1	11
	disagree	8	1	9
	strongly disagree	3	0	3
Total		51	6	57

About 59.6% feel that multiskilling reduces boredom

Figure 5.4.26 Multiskilling increases job satisfaction.

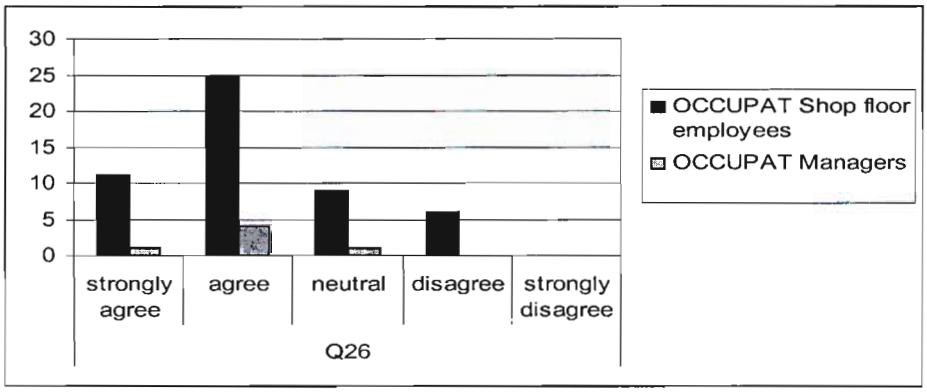

Table 5.4.26 Responses to Statement 26

		OCCUPAT		Total
		Shop floor employees	Managers	
Q26	strongly agree	11	1	12
	agree	25	4	29
	neutral	9	1	10
	disagree	6	0	6
Total		51	6	57

About 71.9% feel that multiskilling increases job satisfaction

Figure 5.4.27 Multiskilling contributes to reduced labour turnover.

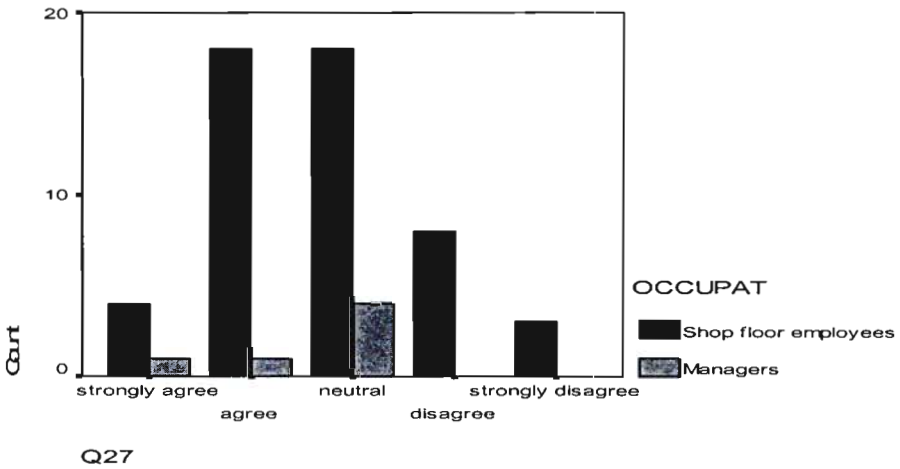

Table 5.4.27 Responses to Statement 27

		OCCUPAT		
		Shop floor employees	Managers	Total
Q27	strongly agree	4	1	5
	agree	18	1	19
	neutral	18	4	22
	disagree	8	0	8
	strongly disagree	3	0	3
Total		51	6	57

The modal response for this statement is neutral(38.6%) followed by agree(33.3%)

Figure 5.4.28 Multiskilling increases the level of worker motivation.

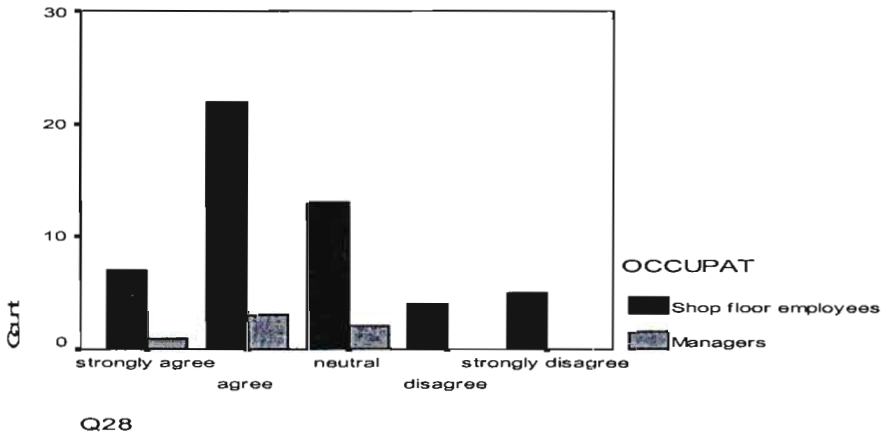

Table 5.4.28 Responses to Statement 28

		OCCUPAT		
		Shop floor employees	Managers	Total
Q28	strongly agree	7	1	8
	agree	22	3	25
	neutral	13	2	15
	disagree	4	0	4
	strongly disagree	5	0	5
Total		51	6	57

About 57.9% feel that multiskilling increases the level of worker motivation

Figure 5.4.29 Rewards for a multiskilled workforce are a motivating factor in the workplace.

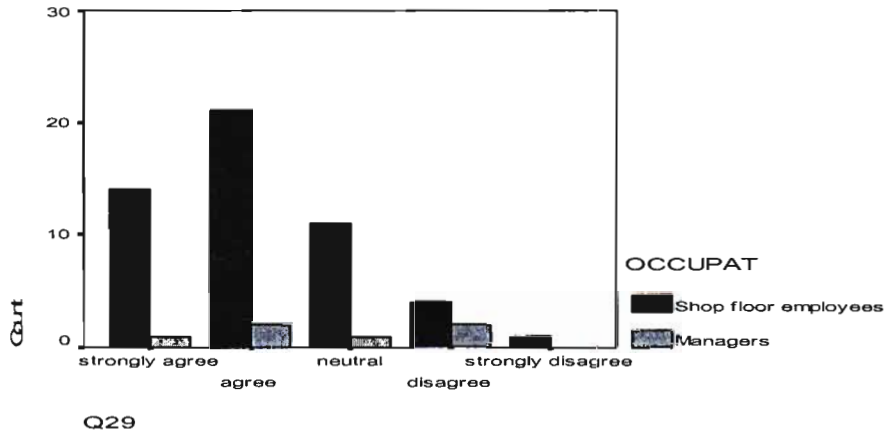

Table 5.4.29 Responses to Statement 29

		OCCUPAT		Total
		Shop floor employees	Managers	
Q29	strongly agree	14	1	15
	agree	21	2	23
	neutral	11	1	12
	disagree	4	2	6
	strongly disagree	1	0	1
Total		51	6	57

About 66.6% of the sample feel that Rewards for a multiskilled workforce are a motivating factor in the workplace

Figure 5.4.30 The effectiveness of multiskilling needs to be evaluated by the organizational management.

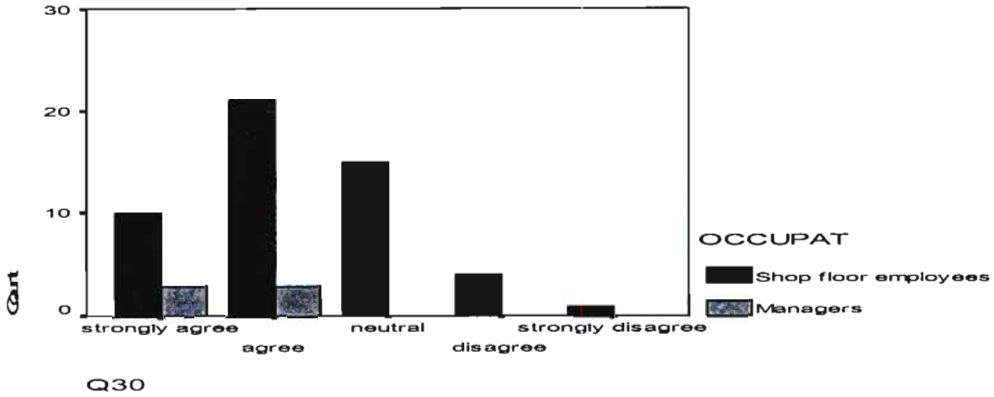

Table 5.4.30 Responses to Statement 30

		OCCUPAT		Total
		Shop floor employees	Managers	
Q30	strongly agree	10	3	13
	agree	21	3	24
	neutral	15	0	15
	disagree	4	0	4
	strongly disagree	1	0	1
Total		51	6	57

The modal response for this statement is agree (42.1%)

CHAPTER 6

HYPOTHESIS TESTING

6.1 Introduction

This chapter focuses on the hypotheses made, based on the statistical results generated. In order to test the hypotheses based on statistical results from the shop floor employees and managers, the Chi-Square test was used because of the nonparametric nature of the data. According to Hinton (1995:240), Chi-Square is the square of the deviation of a score from its population mean divided by the population variance, where the population is normally distributed. He continue to state that Chi-Square test, sometimes called a "goodness of fit" test, is used to decide if a test of observed frequencies are a good fit for a particular pattern of expected frequencies. In the case of this study, the Chi-Square test is used to test if the hypotheses made were in line with the results that came out of the survey conducted. If the probability value that is generated by the test statistics for each hypothesis is less than 0,05, the null hypothesis will be rejected, and an alternative hypothesis will be accepted.

6.2 Research Hypotheses – Shop Floor Employees

Hypothesis 1. H_0: Hulett Aluminium first prepares a suitable environment for multiskilling before implementing it. The company management consults with various stakeholders so that everybody within the organization could accept and own the practice.

H_1: Hulett Aluminium does not first prepare a suitable environment for multiskilling before implementing it. The company management does not consult with various stakeholders so that everybody within the organization could accept and own the practice.

Statements 1-4 were used to test this hypothesis. The results are as follows:

Test Statistics

	S1	S2	S3	S4
Chi-Square(a)	21.144	34.478	27.989	51.989
df	4	4	4	4
Asymp. Sig.	.000	.000	.000	.000

At the 5%(α=0.05), we will reject H_0 if the p-value(Asymp-sig) is less than 0.05. The above figure shows that the P value is less than 0,05. Thus we reject H_0 for all of the above statements and conclude that **Hulett Aluminium management do not first prepare a suitable environment for multiskilling before implementing it. They do not consult with various stakeholders so that everybody within the organization could accept and own the practice.**

Hypothesis 2. H_0: Hulett Aluminium does not ensure that there are motivational programmes and incentive schemes as a means of entrenching multiskilling

H_1: Hulett Aluminium ensures that there are motivational programmes and incentive schemes as a means of entrenching multiskilling

Statements 9, 18, 28-29 were used to test this hypothesis. The results are as follows:

Test Statistics

	S18	S28	S29	
Chi-Square(a)	43.589	91.678	101.544	
df	4	4	4	
Asymp. Sig.	.000	.000	.000	

At the 5%(α=0.05), we will reject H_0 if the p-value(Asymp-sig) is less than 0.05. Thus we reject H_0 for all of the above statements and conclude that **Hulett Aluminium ensures that there are motivational programmes, incentive schemes and training as a means of entrenching multiskilling**

Hypothesis 3. H_0: Multiskilling has not helped to alleviate the problem of absenteeism at Hulett Aluminium

H_1: Multiskilling has helped to alleviate the problem of absenteeism at Hulett Aluminium.

Statement 10 was used to test this hypothesis. The results are as follows:

Test Statistics

	S10
Chi-Square(a)	19.378
df	4
Asymp. Sig.	.001

At the 5%(α=0.05), we will reject H_0 if the p-value(Asymp-sig) is less than 0.05. Thus we reject H_0 for the above statement and conclude that **multiskilling has helped to alleviate the problem of absenteeism at Hulett Aluminium**

Hypothesis 4. H_0: Labour turnover has not increased as a result of multiskilling

H_1: Labour turnover has increased as a result of multiskilling

Statement 27 was used to test this hypothesis. The results are as follows:

Test Statistics

	S27
Chi-Square(a)	47.289
df	4
Asymp. Sig.	.000

At the 5%(α=0.05), we will reject H_0 if the p-value(Asymp-sig) is less than 0.05. Thus we reject H_0 for all of the above statements and conclude that **Labour turnover has not increased as a result of multiskilling**

Hypothesis 5 H_0: By embracing multiskilling, Hulett Aluminium has not experienced increased productivity.

H_1: By embracing multiskilling, Hulett Aluminium has experienced increased productivity.

Statement 18-20 was used to test this hypothesis. The results are as follows:

	S18	S19	S20
Chi-Square(a)	23.944	29.311	37.244
df	4	4	4
Asymp. Sig.	.000	.000	.000

At the 5%(α=0.05), we will reject H_0 if the p-value(Asymp-sig) is less than 0.05. Thus we reject H_0 for all of the above statements and conclude that **By embracing multiskilling, Hulett Aluminium has experienced increased productivity. Productivity levels are not lower at Hulett Aluminium compared to other countries**

Hypothesis 6 H_0: Multiskilling does not ensure the reduction of labour costs.

H_1: Multiskillng ensures the reduction of labour costs.

Statements 20 and 22 was used to test this hypothesis. The results are as follows:

Test Statistics

	S20	S22
Chi-Square(a)	37.244	16.789
df	4	4
Asymp. Sig.	.000	.002

At the 5%(α=0.05), we will reject H_0 if the p-value(Asymp-sig) is less than 0.05. Thus we reject H_0 for all of the above statements and conclude that **Multiskilling ensures the reduction of labour costs.**

Hypothesis 7 H_0: Multiskilling does not empower the workers to easily cope with the ever changing and advancing technology.

H_1: Multiskilling empowers the workers to easily cope with the ever changing and advancing technology.

Statements 8, 11-15, 21 was used to test this hypothesis. The results are as follows:

Test Statistics

	S11	S12	S13	S14	S15	S21	S8
Chi-Square(a)	30.478	4.089	24.344	15.489	21.544	51.356	24.898
df	4	4	4	4	4	4	3
Asymp. Sig.	.600	.044	.000	.004	.000	.000	.000

At the 5%(α=0.05), we will reject H_0 if the p-value(Asymp-sig) is less than 0.05. Thus we reject H_0 for statements and conclude that **Multiskilling empowers the workers to easily cope with the ever changing and advancing technology, except for question 11, for which we accept H_0 and conclude that Multiskilling does not empower the workers to easily cope with the ever changing and advancing technology.**

Hypothesis 8 H_0: Multiskilling is not expensive in the short run but is a bad investment for an organization in the long run

H_1: Multiskilling is expensive in the short run but is a good investment for an organization in the long run

Statements 19-20, 22 and 26 was used to test this hypothesis. The results are as follows:

Test Statistics

	S19	S20	S26	S22
Chi-Square(a)	29.311	37.244	9.412	16.789
df	4	4	3	4
Asymp. Sig.	.000	.000	.024	.002

At the 5%(α=0.05), we will reject H_0 if the p-value(Asymp-sig) is less than 0.05. Thus we reject H_0 for statements and conclude that **Multiskilling is expensive in the short run but is a good investment for an organization in the long run**

6.3 Descriptive Analysis – Shop Floor Employees

	N						
	Valid	Missing	Mean	Median	Mode	Std. Deviation	Variance
Q1	51	0	2.3333	2.0000	2.00	1.03280	1.06667
Q2	51	0	3.0784	3.0000	2.00(a)	1.23034	1.51373
Q3	51	0	2.8235	3.0000	2.00	1.09006	1.18824
Q4	51	0	3.0392	3.0000	4.00	1.13068	1.27843
Q5	51	0	3.0392	3.0000	4.00	1.21591	1.47843
Q6	51	0	3.2549	3.0000	4.00	.99686	.99373
Q7	51	0	1.8627	2.0000	2.00	.74886	.56078
Q8	51	0	2.3529	2.0000	2.00	.89047	.79294
Q9	51	0	1.8431	2.0000	1.00	.96690	.93490
Q10	51	0	2.6078	2.0000	2.00	1.18454	1.40314
Q11	51	0	3.0980	3.0000	2.00	1.26894	1.61020
Q12	51	0	2.1765	2.0000	2.00	1.10826	1.22824
Q13	51	0	2.9412	3.0000	2.00	1.22330	1.49647
Q14	51	0	2.0196	2.0000	2.00	.88295	.77961
Q15	51	0	2.4118	2.0000	2.00	1.00352	1.00706
Q16	51	0	2.7451	2.0000	2.00	1.14618	1.31373
Q17	51	0	2.1569	2.0000	2.00	.75822	.57490
Q18	51	0	2.8431	3.0000	2.00	1.22266	1.49490
Q19	51	0	2.5098	2.0000	2.00	.98737	.97490
Q20	51	0	2.9216	3.0000	2.00	1.05533	1.11373
Q21	51	0	2.8824	3.0000	2.00	.99292	.98588
Q22	51	0	2.3922	2.0000	1.00	1.18454	1.40314
Q23	51	0	2.9020	3.0000	2.00	1.18752	1.41020
Q24	51	0	3.3137	4.0000	4.00	1.15741	1.33961
Q25	51	0	2.4902	2.0000	2.00	1.15538	1.33490
Q26	51	0	2.1961	2.0000	2.00	.91694	.84078
Q27	51	0	2.7647	3.0000	2.00(a)	1.01170	1.02353
Q28	51	0	2.5686	2.0000	2.00	1.13587	1.29020
Q29	51	0	2.1569	2.0000	2.00	.98737	.97490
Q30	51	0	2.3137	2.0000	2.00	.94848	.89961

a Multiple modes exist. The smallest value is shown

From the descriptive statistics generated with regards to the shop floor employees, the mean, the mode, the median, the sample variance and the sample standard deviation were considered. Iman and Conover (1989:98) define the mean or the arithmetic mean as "the sum of all the values divided by the sample size", the mode as "the most frequent response given by the respondents" and the median as "the middle most value when the data(per variable/question) is arranged from highest to lowest". They further state that the

sample variance is the degree or quantity by which each observation varies one from another. The sample standard deviation is the square root of the sample variance. From the table above, majority of the questions have a mode of "2" for questions 1-30 which represents a response of "agree". The standard deviation itself describes the characteristics of the sample. It is based on the distance of each score from the centre or mean, and describes the spread or variation around the sample mean.

According to Iman and Conover (1989:98), the standard deviation is a statistic that is usually computed along with the sample mean and which provides a measure of spread or variability in the sample. They continue to state that if all of the sample values are nearly equal to each other, the spread or variability is quite small and the standard deviation will be close to zero. They further observe that if the sample values are spread out in a diverse manner, the sample standard deviation will tend to be large to reflect this different situation. They conclude by stating that if the standard deviation is 0.5, it is low and shows that there is low variation in terms of responses, whereas the standard deviation of 1.0 and above is high and shows high variation in terms of responses.

The standard deviations from the above descriptive analysis are consistently about 1 and this indicates good consistency between the observations due to low variability. The standard deviation for statement 17 on whether or not multiskilling encourages teamwork is low at 0.76, which indicates the low level of disagreement and high level of agreement. However, for statement 11, on whether or not a multiskilled workforce easily copes with new, advanced technology, the standard deviation is 1.27, which is fairly high and indicates high variation and differing opinions.

6.4 Reliability Analysis – Shop Floor Employees

Cronbach's alpha was also calculated as part of the reliability test to assess how valid the results were and the extent to which similar results could be generated if the sample size was increased. According to Coakes and Steed (2003:140), there are a number of different reliability coefficients and the Cronbach's alpha is one of the most commonly

used ones. They further state that the Cronbach's alpha can range from 0 to1 and that a value of 0.7 or higher is a very good value that can lead us to say that we will get the same results if we carried out this survey with a larger sample of respondents. The Cronbach's alpha was calculated for questions 1-30 because they have the same scale. The results are as follows:

```
****** Method 1 (space saver) 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)

Reliability Coefficients

N of Cases =     51.0                    N of Items = 30

Alpha =     .8329
```

This is a good alpha value, and it makes us conclude that we will get the same results if we carried out this survey with a larger sample of respondents.

6.5 Descriptive Statistics - Managers

	N						
	Valid	Missing	Mean	Median	Mode	Std. Deviation	Variance
Q1	6	0	2.3333	2.5000	1.00(a)	1.21106	1.46667
Q2	6	0	2.5000	2.0000	2.00	1.22474	1.50000
Q3	6	0	2.3333	2.0000	1.00(a)	1.36626	1.86667
Q4	6	0	2.8333	3.0000	4.00	1.32916	1.76667
Q5	6	0	3.8333	4.0000	4.00	1.47196	2.16667
Q6	6	0	3.8333	4.0000	4.00(a)	1.16905	1.36667
Q7	6	0	2.5000	1.5000	1.00	1.97484	3.90000
Q8	6	0	2.1667	2.0000	2.00	.98319	.96667
Q9	6	0	1.3333	1.0000	1.00	.81650	.66667
Q10	6	0	2.6667	2.5000	1.00	1.63299	2.66667
Q11	6	0	1.5000	1.0000	1.00	.83666	.70000
Q12	6	0	2.1667	2.0000	2.00	1.47196	2.16667
Q13	6	0	2.8333	2.5000	2.00	.98319	.96667
Q14	6	0	1.6667	1.0000	1.00	1.21106	1.46667
Q15	6	0	1.8333	1.5000	1.00	.98319	.96667
Q16	6	0	2.1667	2.0000	1.00(a)	1.16905	1.36667
Q17	6	0	1.8333	2.0000	2.00	.75277	.56667
Q18	6	0	2.3333	2.5000	3.00	.81650	.66667
Q19	6	0	2.5000	2.5000	2.00(a)	1.04881	1.10000
Q20	6	0	2.6667	2.5000	2.00(a)	1.36626	1.86667
Q21	6	0	3.5000	4.0000	4.00	.83666	.70000
Q22	6	0	2.6667	2.5000	2.00	.81650	.66667
Q23	6	0	2.5000	2.5000	2.00(a)	1.04881	1.10000
Q24	6	0	4.3333	4.0000	4.00	.51640	.26667
Q25	6	0	2.5000	2.0000	2.00	.83666	.70000
Q26	6	0	2.0000	2.0000	2.00	.63246	.40000
Q27	6	0	2.5000	3.0000	3.00	.83666	.70000
Q28	6	0	2.1667	2.0000	2.00	.75277	.56667
Q29	6	0	2.6667	2.5000	2.00(a)	1.21106	1.46667
Q30	6	0	1.5000	1.5000	1.00(a)	.54772	.30000

a Multiple modes exist. The smallest value is shown

With regards to the descriptive statistics generated from the responses by managers, the mean, the mode, the median, the sample variance and the sample standard deviation were considered. With regard to statement 24, on whether or not multiskilling makes the workforce to lose self-esteem, the standard deviation is 0.52. This is low and indicates a high degree of agreement amongst managers. However, the standard deviation, with regard to statement 10, on whether or not multiskilling alleviates the problem of

absenteeism, is 1.63. This is high and indicates a low level of agreement and a high level of disagreement amongst managers.

6.6 Reliability Analysis - Managers

Cronbach's alpha was also calculated as part of the reliability test to assess how valid the results were and the extent to which similar results could be generated if the sample size was increased. The Cronbach's alpha was calculated for questions 1-30 because they have the same scale. The results are as follows:

```
****** Method 1 (space saver) 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)

Reliability Coefficients

N of Cases =      6.0                    N of Items = 30

Alpha =     .8931
```

This is a very good alpha value!

6.7 Discussion

The results of the managers are in keeping with those of the shop floor employees so the conclusions are the same. Furthermore the differences between the managers are at most where 2 managers differ in their opinions whilst some are neutral and others feel contrary. The results here must be carefully interpreted with a pinch of salt because there are only 6 managers.

6.8 Descriptive Statistics – Combined Analysis

	N		Mean	Median	Mode	Std. Deviation	Variance
	Valid	Missing					
Q1	57	0	2.3333	2.0000	2.00	1.04083	1.08333
Q2	57	0	3.0175	3.0000	2.00	1.23189	1.51754
Q3	57	0	2.7719	2.0000	2.00	1.11831	1.25063
Q4	57	0	3.0175	3.0000	4.00	1.14160	1.30326
Q5	57	0	3.1228	3.0000	4.00	1.25457	1.57393
Q6	57	0	3.3158	3.0000	4.00	1.02047	1.04135
Q7	57	0	1.9298	2.0000	2.00	.94226	.88784
Q8	57	0	2.3333	2.0000	2.00	.89310	.79762
Q9	57	0	1.7895	2.0000	1.00	.95874	.91917
Q10	57	0	2.6140	2.0000	2.00	1.22116	1.49123
Q11	57	0	2.9298	3.0000	2.00	1.32098	1.74499
Q12	57	0	2.1754	2.0000	2.00	1.13583	1.29010
Q13	57	0	2.9298	3.0000	2.00	1.19313	1.42356
Q14	57	0	1.9825	2.0000	2.00	.91595	.83897
Q15	57	0	2.3509	2.0000	2.00	1.00873	1.01754
Q16	57	0	2.6842	2.0000	2.00	1.15198	1.32707
Q17	57	0	2.1228	2.0000	2.00	.75758	.57393
Q18	57	0	2.7895	3.0000	2.00	1.19129	1.41917
Q19	57	0	2.5088	2.0000	2.00	.98421	.96867
Q20	57	0	2.8947	3.0000	2.00	1.08041	1.16729
Q21	57	0	2.9474	3.0000	2.00	.98961	.97932
Q22	57	0	2.4211	2.0000	2.00	1.14872	1.31955
Q23	57	0	2.8596	3.0000	2.00	1.17167	1.37281
Q24	57	0	3.4211	4.0000	4.00	1.14872	1.31955
Q25	57	0	2.4912	2.0000	2.00	1.11999	1.25439
Q26	57	0	2.1754	2.0000	2.00	.88888	.79010
Q27	57	0	2.7368	3.0000	3.00	.99151	.98308
Q28	57	0	2.5263	2.0000	2.00	1.10365	1.21805
Q29	57	0	2.2105	2.0000	2.00	1.01307	1.02632
Q30	57	0	2.2281	2.0000	2.00	.94524	.89348

With regards to the descriptive analysis generated from the responses by both managers and shop floor employees, the mean, the mode, the median, the sample variance and the sample standard deviation were considered. The standard deviation for statement 17, on whether or not multiskilling encourages teamwork, is 0.76. It is the lowest standard deviation and reflects to the fact that there was a high level of agreement between the managers and the shop floor employees. However, with regard to statement 11, on whether or not a multiskilled workforce easily copes with new, advanced technology, the standard deviation is the highest at 1.23. This indicates that there was high variation and

low level of agreement amongst the respondents from both managers and shop floor employees.

6.9 Reliability Analysis – Combined Analysis

Cronbach's alpha was also calculated as part of the reliability test to assess how valid the results were and the extent to which similar results could be generated if the sample size was increased. The Cronbach's alpha was calculated for questions 1-30 because they have the same scale. The results are as follows:

```
****** Method 1 (space saver) 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)

Reliability Coefficients

N of Cases =     57.0                    N of Items = 30

Alpha =     .8376
```

This is a very good alpha value!

6.10 Research Hypotheses –Combined Responses from Managers and Shop floor Employees

In order to test the following two hypotheses, the Mann Whiteny-U test and Wilcoxon-W test were used because of the nonparametric nature of the data. According to Hinton (1995:210) the Mann Whiteny–U test and Wilcoxon–W test are tests that are used to analyse a comparison between two samples. He further states that the two tests measure the extent to which the two samples differ with respect to a particular issue. In the case of this study, the Mann Whiteney-U and Wilcoxon-W test are used to test the hypothesis that there is no difference between management and the shop floor employees with respect to their perceptions about multiskilling. If this null hypothesis comes out to have a probability value of les than 0.05, when the tests are conducted, then we will reject it

and accept the alternative: that there is no difference between management and the shop floor employees with respect to their perceptions about multiskilling.

1. **H_0: There is no difference between shop floor employees and managers at Hulett Aluminium with respect to their perceptions about multiskilling**
   H_1: There is a difference between shop floor employees and managers at Hulett Aluminium with respect to their perceptions about multiskilling

Test Statistics(b)

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
Q1	151.000	1477.000	-.054	.957
Q2	112.500	133.500	-1.085	.278
Q3	114.000	135.000	-1.066	.287
Q4	141.500	162.500	-.310	.757
Q5	95.500	1421.500	-1.556	.120
Q6	106.000	1432.000	-1.272	.203
Q7	149.000	1475.000	-.112	.911
Q8	130.000	151.000	-.640	.522
Q9	101.000	122.000	-1.468	.142
Q10	152.500	173.500	-.013	.989
Q11	47.000	68.000	-2.820	.005
Q12	141.500	162.500	-.321	.749
Q13	147.500	168.500	-.149	.882
Q14	106.000	127.000	-1.302	.193
Q15	106.500	127.500	-1.275	.202
Q16	110.000	131.000	-1.179	.239
Q17	120.000	141.000	-.963	.335
Q18	119.000	140.000	-.911	.362
Q19	148.500	1474.500	-.125	.900
Q20	131.000	152.000	-.598	.550
Q21	96.500	1422.500	-1.535	.125
Q22	127.500	1453.500	-.685	.493
Q23	124.500	145.500	-.766	.443
Q24	73.000	1399.000	-2.172	.030
Q25	147.000	1473.000	-.164	.870
Q26	140.000	161.000	-.366	.714
Q27	139.000	160.000	-.383	.702
Q28	128.500	149.500	-.674	.500
Q29	113.500	1439.500	-1.079	.281
Q30	76.500	97.500	-2.102	.036

a Not corrected for ties.
b Grouping Variable: OCCUPAT

At the 5%(α=0.05), we will reject H_0 if the p-value(Asymp-sig) is less than 0.05. Thus we reject H_0 for statement 11, and conclude that **there is a difference between shop floor employees and managers at Hulett Aluminium with respect to their perceptions about multiskilling** whilst we will accept H_0 for the rest of the statements and conclude that **there is no difference between shop floor employees and managers at Hulett Aluminium with respect to their perceptions about multiskilling**

In order to test the following hypotheses, the Chi-Square test was used because of the nonparametric nature of the data.(Hinton, 1995: 195)

Hypothesis 1. H_0: The company management consults with various stakeholders so that everybody within the organization could accept and own the practice.

H_1: The company management does not consult with various stakeholders so that everybody within the organization could accept and own the practice.

Statements 1-4 were used to test this hypothesis. The results are as follows:

Test Statistics

	S1	S2	S3	S4
Chi-Square(a)	87.309	32.269	71.601	33.011
df	4	4	4	4
Asymp. Sig.	.000	.000	.000	.000

At the 5%(α=0.05), we will reject H_0 if the p-value(Asymp-sig) is less than 0.05. Thus we reject H_0 for all of the above statements and conclude that **Hulett Aluminium management do not consult with various stakeholders so that everybody within the organization could accept and own the practice.**

Hypothesis 2. H_0: Hulett Aluminium does not ensure that there are motivational programmes and incentive schemes as a means of entrenching multiskilling

H_1: Hulett Aluminium ensures that there are motivational programmes, and incentive schemes as a means of entrenching multiskilling

Statements 9, 18, 28-29 were used to test this hypothesis. The results are as follows:

Test Statistics

	S18	S28	S29	
Chi-Square(a)	23.189	22.374	11.707	
df	4	4	4	
Asymp. Sig.	.000	.000	.020	

At the 5%(α=0.05), we will reject H_0 if the p-value(Asymp-sig) is less than 0.05. Thus we reject H_0 for all of the above statements and conclude that **Hulett Aluminium ensures that there are motivational programmes and incentive schemes as a means of entrenching multiskilling**

Hypothesis 3. H_0: Multiskilling has not helped to alleviate the problem of absenteeism at Hulett Aluminium

H_1: Multiskilling has helped to alleviate the problem of absenteeism at Hulett Aluminium

Statement 10 was used to test this hypothesis. The results are as follows:

Test Statistics

	S10
Chi-Square(a)	15.778
df	4
Asymp. Sig.	.003

At the 5%(α=0.05), we will reject H_0 if the p-value(Asymp-sig) is less than 0.05. Thus we reject H_0 for all of the above statement and conclude that **Absenteeism has not increased as a result of multiskilling**

Hypothesis 4. H_0: Labour turnover has increased as a result of multiskilling

H_1: Labour turnover has not increased as a result of multiskilling

Statement 27 was used to test this hypothesis. The results are as follows:

	S27
Chi-Square(a)	54.749
df	4
Asymp. Sig.	.000

At the 5%(α=0.05), we will reject H_0 if the p-value(Asymp-sig) is less than 0.05. Thus we reject H_0 for all of the above statement and conclude that **Labour turnover has not increased (decreased) as a result of multiskilling**

Hypothesis 5. H_0: By embracing multiskilling, Hulett Aluminium has experienced increased productivity.

H_1: By embracing multiskilling, Hulett Aluminium has experienced increased productivity.

Statements 18-20 were used to test this hypothesis. The results are as follows:

	S18	S19	S20
Chi-Square(a)	23.189	30.249	33.382
df	4	4	4
Asymp. Sig.	.000	.000	.000

At the 5%(α=0.05), we will reject H_0 if the p-value(Asymp-sig) is less than 0.05. Thus we reject H_0 for all of the above statements and conclude that **Multiskilling ensures the reduction of labour costs.**

Hypothesis 6. H_0: Multiskilling does not ensure the reduction of labour costs.

H_1: Multiskillng ensures the reduction of labour costs.

Statements 20 and 22 were used to test this hypothesis. The results are as follows:

Test Statistics

	S20	S22
Chi-Square(a)	33.382	17.149
df	4	4
Asymp. Sig.	.000	.002

At the 5%(α=0.05), we will reject H_0 if the p-value(Asymp-sig) is less than 0.05. Thus we reject H_0 for all of the above statements and conclude that **Multiskilling ensures the reduction of labour costs.**

Hypothesis 7. H_0: Multiskilling does not empower the workers at Hulett Aluminium to easily cope with the ever changing and advancing technology.

H_1: Multiskilling empowers the workers at Hulett Aluminium to easily cope with the ever changing and advancing technology.

Statements 8, 11-15, 21 were used to test this hypothesis. The results are as follows:

Test Statistics

	S11	S12	S13	S14	S15	S21	S8
Chi-Square(a)	19.952	4.976	23.683	12.067	20.808	56.140	27.071
df	4	4	4	4	4	4	3
Asymp. Sig.	.710	.040	.000	.017	.000	.000	.000

At the 5%(α=0.05), we will reject H_0 if the p-value(Asymp-sig) is less than 0.05. Thus we reject H_0 for statements and conclude that **Multiskilling empowers the workers at Hulett Aluminium to easily cope with the ever changing and advancing technology, except for question 11, for which we accept H_0 and conclude that Multiskilling does not empower the workers to easily cope with the ever changing and advancing technology.**

Hypothesis 8. H_0: Multiskilling is not expensive in the short run but is a bad investment for an organization in the long run

H_1: Multiskilling is expensive in the short run but is a good investment for an organization in the long run

Statements 19-20, 22 and 26 were used to test this hypothesis. The results are as follows:

Test Statistics

	S19	S20	S22	S26
Chi-Square(a)	30.249	33.382	17.149	11.503
df	4	4	4	3
Asymp. Sig.	.000	.000	.002	.009

At the 5%(α=0.05), we will reject H_0 if the p-value(Asymp-sig) is less than 0.05. Thus we reject H_0 for the statements above and conclude that **Multiskilling is expensive in the short run but is a good investment for an organization in the long run**

6.11 Summary

The chapter focused on the research hypotheses based on statistical results generated from the responses by both shop floor employees and managers at Hulett Aluminium. It has also focused on a comparison between these two parties insofar as their responses are concerned. The results of the managers are in keeping with those of the shop floor employees so the conclusions are the same. Furthermore the differences between the managers are at most where 2 managers differ in their opinions whilst some are neutral and others feel contrary. The results here must be carefully interpreted with a pinch of salt because there are only 6 managers. The relevant hypotheses testing were also done following each set of responses. In the following chapter the discussion and conclusions are made, which reflect to the entire research study.

CHAPTER 7

DISCUSSION AND CONCLUSIONS

7.1 Introduction

This chapter focuses on the discussion of the statistical results generated in the previous chapter in relation to the research objectives. The discussion is done in line with the purpose of this study: the investigation of the adoption of multiskilling by Hulett Aluminium. Each research objective is considered in line with the relevant results generated. The relevant literature is quoted as a back up for the discussion.

7.2 The establishment of the extent to which new, advanced technology determines the application of multiskilling

At a time of rapid technological and economic change organisations are generally stressing the need for greater flexibility in their employment policies. (Rothwell, 1985:74). Atkinson (1984:28) states that the increasing pace and decreasing cost of technological change means that the firm, and its employees in particular, needs to be capable of quickly to substantial changes in either product lines or production methods or probably both.

Whenever new, advanced technology is to be introduced in a particular organisation, the company must ensure that its workers will be able to cope with this technology. One of the ways of achieving this is the introduction of multiskilling. (Carmichael and Macleed, 1993:143). According to Carmichael and Macleed (1993:143), if workers are multiskilled at more than one task before technological change occurs, and if the change increases demand for the workers in other jobs within the organisation, it is in the company's own interest to transfer these workers to other jobs. They further maintain that multiskilled workers will cooperate with labour-saving technical change in cases where simply-skilled workers will not.

When asked whether they thought a multiskilled workforce easily copes with new, advanced technology, the majority of the respondents at Hulett Aluminium, both from management and shop floor employees, feel that even the multiskilled workforce will need to be orientated about the new, advanced machines. The results of this study have shown that only 27,5% of the shop floor employees agree that a multiskilled workforce easily copes with the new, advanced technology. In the case of respondents from management the results gave a different picture. Five, out of six managers, agree that a multiskilled workforce easily cope with new, advanced technology. The difference in opinion in this regard can be attributed to the fact that it is the managers, and not the shop floor employees, that are in a better position to assess the extent to which their multiskilled workforce easily copes with new, advanced technology.

7.3 The establishment of the activities within the organisation that back-up multiskilling

Training and reward systems have been cited as some of the most important activities in which organisations should engage themselves, as a means of ensuring the sustainability of multiskilling. According to Cordery (1989:14), training schemes should exist within an organisation as these provide the opportunity for employees to acquire a range of distinct and organisationally relevant skills within each broad band classification. Van Dyk *et al* (2001:116) are of the opinion that training is not only about giving people the knowledge and skills they need to do their job, it also seeks to impart a relatively permanent change in an individual, thus improving their ability to carry out their job.

The results of the research have shown that an overwhelming majority of respondents at Hulett Aluminium, both managers and shop floor employees, are of the view that training and reward systems are essential for the success of multiskilling. This view is in line with the theoretical conclusions that literature draws on training and reward systems in relation to multiskilling.

7.4 The establishment of the impact of multiskilling on productivity

One of the advantages of the multiskilling that has been cited by many authors is that of contributing positively to increased organizational productivity. According to Marshall, (2005-September-05) multiskilling enables a company to adjust its workforce to where the business is most busy, thereby avoiding bottlenecks. She further states that this implies that multiskilling increases service levels and productivity for the business. Ki Seong Park (2004:1) of the Department of Economics at Sungshin Women's University conducted a study on the impact of multiskilling on labour productivity. He observed that an increase in the ratio of multiskilled workers in the firm has a positive impact on the growth of the firm's labour productivity. The results of his study indicated that labour productivity increased by 1 percent with 10 percent increase in multiskilling ratio.

Although one would expect that it be management's terrain to know the increase or decrease of productivity levels within the organisation, at Hulett Aluminium it seems to be a different picture. The results of this study show that both shop floor employees and managers are of the view that multiskilling contributes positively to increased labour productivity. 58% of the respondents from the level of shop floor employees agree that multiskilling contributes to increased labour productivity. On the part of management three managers, out of six, (50%) agree that multiskilling contributes to increased labour productivity. It is interesting to note that there is a manager who feels that multiskilling does not contribute to increased labour productivity.

7.5 The establishment of the contribution of mutiskilling to the alleviation of the problem of absenteeism

Absenteeism in the workplace is one of the challenges facing the manufacturing companies, as it has a direct impact on the organisation's productivity. However, when a company has a multiskilled workforce, it can fill the gap caused by absenteeism by utilising other employees. According to the National Food Services Management Institute (2004), located at the University of Mississippi, Oxford campus, employees can assume other tasks when there is absenteeism. As far as the institute is concerned, other employees can easily take on other tasks in case of absenteeism of their colleagues, since multiskilling equips the employees with various skills to cope with various areas in the production system. If some employees become absent due to illness or attending training or workshops, then others could fill the gap. Connock (1985:36) also supports the above viewpoint by stating that multiskilling reduces the loss of output/ service due to absenteeism, since trained, flexible employees can provide better cover for absence.

In the case of Hulett Aluminium, the results of this study show that the majority of the respondents, both from management and shop floor employees, are of the view that multiskilling helps alleviate the problem of absenteeism. 51% of the respondents from the shop floor employees agree that multiskilling alleviates the problem of absenteeism. Three managers out of six (50%), agree with this statement.

7.6 The establishment of the extent to which multiskilling contributes to reduced labour costs

An argument that has been advanced by Carmichael and Macleed (1993:144) is that as the people at the lower levels of the organisation become more skilled, this may effectively lead to a reduction in the number of supervisory and support staff required, and thus a reduction in indirect labour costs. This implies, they continue to maintain, that an organisation could save a lot of money which it would have otherwise spent on supervision, as the multiskilled workforce would operate with a high degree of efficiency.

Cordery (1989:18) adds to the above view by stating that whilst multiskilled workers potentially have a claim to higher wages than their traditionally narrowed skilled counterparts by virtue of their job's increased value, it is likely that these costs would be offset by the reduction in the number of people it is necessary to employ, and the associated costs. He further states that an organisation with multiskilled employees can reduce costs, because instead of having many specialised employees at high costs, it can instead have a few multiskilled employees performing a variety of tasks. The results of this study indicate that there seems to be a split of opinion at Hulett Aluminium with regards to whether or not multiskilling reduces labour costs. Only 41,1% of the shop floor employees and three out of six managers (50%) agree that multiskilling reduces labour costs.

7.7 The establishment of the extent to which multiskilling reduces industrial conflicts

The reduction of industrial conflicts as a result of the introduction of multiskilling is not a very popular view amongst authors on multiskilling. Cordery (1989:18) is of the opinion that developing a multiskilled workforce results in a high level of functional flexibility, which in turn results in reduced industrial conflicts. This argument is based on the fact that a motivated and satisfied multiskilled workforce is less likely to engage in industrial action.

Four out of six respondents (66,6%) from management and 49,2% from shop floor employees disagree that multiskilling reduces industrial conflicts. This shows that both management and shop floor employees do not see any correlation between the introduction of multiskilling and the reduction of industrial conflicts.

7.8 The establishment of the extent to which multiskilling increases job satisfaction and reduces labour turnover

Horbury and Wright (2001:11) assert that when multiskilling is introduced with the sole purpose of bringing about a positive step to improve individuals' quality of life, there is some evidence that suggest that increased job satisfaction among employees will result. The more the workers are happy and satisfied with what they are doing, the more likely they are to stick by their jobs. Marshall (2005 – September – 05) believes that multiskilling can actually improve job satisfaction and assist with employee retention.

Findings from this study have shown that shop floor employees have differing views on the statement that says that multiskilling contributes to reduced labour turnover. 43,1% of them agree with the statement, 21,6% disagree, whilst 35,3% are neutral. Even at management level, only two out of six managers agree with the statement. With regards to the shop floor employees one would understand why they would have mixed reactions to the statement, because labour turnover issues are mainly management issues. With regards to management, however, one would have expected that the managers would have a common understanding of the relationship between multiskilling and labour turnover.

With regards to job satisfaction, however, both shop floor employees and managers agree that multiskilling does contribute to increased job satisfaction. 70,6% of the respondents from the shop floor employees agree that multiskilling increases job satisfaction. Five out six managers (83,3%) agree with the statement.

7.9 The establishment of the extent to which multiskilling contributes to increased worker motivation

Motivation is a complex term and has been defined in a variety of ways within particular contexts. Geen (1995:2) advises that in order to understand what is meant by motivation, we need only to observe people as they go about their everyday activities. Firstly, human

behaviour is constantly changing in direction, as people frequently stop doing what they are doing and move on to something else, so that new actions are regularly initiated. Secondly, behaviour varies in its intensity, as people sometimes work vigorously, and sometimes perform in a sluggish and more relaxed manner. Thirdly and lastly, people show great persistence in some of the things they do, whereas in others they are less likely to show such tenacity. Geen (1995:2) then summarises motivation by saying that it refers to simple and common aspects of human life, namely initiation, intensity and persistence of behaviour.

Motivation can either be extrinsic or intrinsic. By extrinsic motivation is meant the type of motivation a person gets as a direct consequence of external rewards, such as food, money etc. (McClelland, 1987:115). Sausone and Harackiewicz (2000:446) define intrinsic motivation as occurring when an activity satisfies basic human needs for competence and control, which makes the activity interesting and likely to be performed for its own sake rather than as a means to an end.

Sausone and Harackiewicz (2000:41) warn that a focus on rewards and control as the principal motivators may also detract from workers' loyalty and honesty. On his part Schwartz (1994:245) states, "when work comes to be defined or framed strictly in terms of money, ...then the satisfaction with a job well done, a product well made, a customer well served, erode." He further warns that too much emphasis on rewards and controls may encourage dishonest and deceitful behaviours and that this pursuit of rewards tends to override values of morality and fairness. On his part Wilson (1993:35) argues that in spite of the negative consequences of contingent extrinsic rewards in the workplace, we must keep in mind that rewards are a natural outcome of work. Even people who enjoy the process of their work still typically need their labours to yield resources for living. Sausone and Harackiewicz then state, "the issue here is not whether rewards should be eliminated from the workplace, but instead how rewards can be distributed so as not to be seriously damaging to intrinsic motivation, honesty, loyalty to the organisation and the satisfaction of quality performance.

The argument that has been advanced by Mol (2005:9) is that every human being, regardless of race, culture or level of education, has a deep-down desire to be proud of himself. He further argues that people are motivated to perform a task with dedication, only when that task awakens their pride.

The results of this study have shown that 57,9% of the respondents from both management and shop floor employees agree that multiskilling increases the level of worker motivation. In other words, workers feel a sense of pride and achievement when they acquire a wide range of skills that enable them to handle a variety of tasks competently. This in turn motivates them to acquire even more skills and thereby boost their level of competence.

7.10 The establishment of the overall costs and benefits associated with the implementation of multiskilling

There seems to be a common agreement amongst authors that multiskilling is costly for an organisation in the short run, but that it is very beneficial for the organisation in the long run. Cordery (1989:18) for instance, asserts that the costs that the company incurs while multiskilling the workers would be offset by reduction in the number of people it is necessary to employ and the costs associated with the exercise.

7.11 Conclusions

The results from this study have indicated that much as Hulett Aluminium (Pty) Ltd has embraced multiskilling, there is still a lot that the company needs to do or improve on, so that it could see the benefits of the programme. It has emanated from this study that the company did prepare a suitable ground for the implementation of the multiskilling programme. However, it has also transpired that there are some employees that seem to have been left behind in terms of understanding the programme. It appears that in the case of Hulett Aluminium multiskilling does not empower the employees to easily cope with the ever changing and advancing technology. The claim by both management and

employees is that whenever new machinery comes into the company, still those that are to operate it have to undergo training on how to utilise it.

The findings of this study further showed that both management and employees see the importance of having programmes and reward systems in place, as essential tools for multiskilling to be effective. Furthermore, the findings have shown that multiskilling has a positive impact on productivity. If the programme is in place, the company witnesses increased labour productivity. Both management and employees feel that multiskilling is expensive on the short run, but that on the long run it saves the company from huge financial losses.

It appears that both management and the shop floor employees do not see a link between the implementation of multiskilling and the reduction of industrial conflicts, as literature on the theory of multiskilling indicates. Only managers could form a link between the application of multiskilling and the reduction of labour turnover, otherwise ordinary employees seemed not very sure.

7.12 Summary

The statistical results of this study were discussed in this chapter in relation to the research objectives. It has transpired that some of the results were in line with the hypotheses the researcher made. The majority of the respondents appeared to agree with the majority of the statements that were made in the questionnaire, for the purpose of meeting the research objectives. The chapter has shown that the majority of the respondents agreed with the following statements:

- Multiskilled employees need appropriate resources (e.g. proper equipment) for the application of their skills
- Training is an essential tool for multiskilling to be effective
- Rewards for a multiskilled workforce are a motivating factor in the workplace
- Multiskilling contributes to increased organisational labour productivity
- Multiskilling increases job satisfaction

- Multiskilling is very expensive and costly for the organisation

This chapter also demonstrated that the majority of the respondents disagreed with the following statements:

- A multiskilled workforce easily copes with the advanced technology
- Multiskilling reduces organisational overall costs
- Multiskilling reduces industrial conflicts

CHAPTER 8

RECOMMENDATIONS

8.1 Recommendations Regarding the Implementation of Multiskilling

For the manufacturing industry in South Africa in general, and Hulett Aluminium in particular, there are a number of recommendations that can be made, based on the findings of this study. It is only when the industry takes cognizance of these recommendations that it can witness the fruits of multiskilling implementation. This chapter intends to put forward these recommendations for the benefit of the manufacturing sector in South Africa.

- Findings from this study have indicated that there is a need for a detailed planning process by the manufacturing industry before multiskilling is implemented. Planning can be defined as steps that are usually engaged in, in an attempt to define an organisation's goals, establish strategies for attaining these goals and develop a comprehensive hierarchy of plans to integrate and coordinate activities (Smit and Cronje, 1997:118).It revolves around what to be done, when to do it and how to carry it out. Donnelly (1995:156) argues that it is essential for every organisation to plan if ever it has to survive and achieve effective levels of performance. He further stresses that whilst the number of people holding responsibility for planning vary from organisation to organisation, it is imperative that all relevant stakeholders be involved in the planning and decision-making processes. For Hulett Aluminium (Pty) Ltd is therefore recommended that the company engages in a detailed planning process for proper implementation of multiskilling. It is further recommended that all the relevant stakeholders be involved in all the stages of the implementation process.

- The research findings from this study have shown that some shop floor employees and managers did not agree that all relevant stakeholders at Hulett Aluminium

were part of the adoption of multiskilling; that everybody within the organisation became aware of what multiskilling entails and that everybody within the organisation warmly welcomed the adoption of multiskilling. This is a cause for concern. A programme like multiskilling needs to be discussed and agreed upon by all relevant stakeholders within the organisation. Everybody needs to have a clear understanding of what the programme entails and how it is to benefit everybody, whilst at the same time contributing to the realisation of the company's overall goals. Horbury and Wright (2001:viii) maintain that a company intending to implement multiskilling should have participative methods in place to ensure workforce buy-in. Resistance to the implementation of multiskilling will be a near-impossibility if everybody within the organisation has been made to own it, by being involved in decision-making processes, through representation.

- The research findings also indicated that Hulett Aluminium is still grappling with some problems pertaining to the implementation of multiskilling. It is therefore recommended that the company continues with further research into the theoretical application of multiskilling and then attempt to apply these theories vigorously. It is also important for the company to benchmark against those companies that have successfully embraced multiskilling. By benchmarking is meant a process used by the manufacturing function to revitalise itself by comparing the features, assemblies and components of its toughest competitors or those companies renowned as industry leaders, in order to achieve superior performance (Slack, 1999:8). According to Stevenson (1999:509), the purpose of benchmarking is to establish a standard against which performance is judged, and to identify a model for learning how to improve.

- Once Hulett Aluminium has identified a benchmark, the goal would be to meet or exceed that standard through improvements in multiskilling implementation. Stevenson (1999:510) suggests the following steps in the benchmarking process:
  - Identify a critical process that needs improvement

- Identify an organisation that excels in the process, preferably the best
- Contact the benchmark organisation, visit it, and study the benchmark activity
-Analyse the data
- Improve the critical process at your own organisation

- The research findings of this study have shown that 80,7% of the respondents, both the shop floor employees and managers combined, agree that training is an essential tool for multiskilling to be effective. Much as this is a very good percentage, it is, however, an issue of concern that there is one manager who took a neutral position with regard to this statement. It is recommended that at least all managers be aware of the importance of multiskilling in order for multiskilling to be effective. According to van Dyk *et al* (2001:148) training is an essential component of the organisation's most important resource, which is its people. They further state that if the training function is to perform this task correctly, the results of training must be measurable in terms of individual and organisational performance.

- It might happen that after Hulett Aluminium has trained its workforce for multiskilling, new recruits are made to the company. It is recommended that the company trains these new recruits so that they could be at equal par with the old employees and also contribute positively to increased organisational productivity. To this end Marshall (2005:2) recommends that companies should implement a training curriculum for new employees where multiskilling programme is mapped and planned for. For Hulett Aluminium, a further recommendation would be that the company embarks on "vigorous training and competency assurance systems, including regular training needs assessment, a balance between on-the-job and off-the-job training methods and standards of competence for staff to demonstrate their abilities against, including an awareness of their operation bounds" (Horbury and Wright, 2001:viii).

- The results of this study have also indicated that only 47,3% of the employees and management respondents agree that multiskilling contributes to increased organisational labour productivity. The cause for concern is the fact that only three managers, out of six, agree with the statement. This raises a number of questions around the implementation of multiskilling at Hulett Aluminium. One would assume that no organisation would introduce such a massive and costly programme as multiskilling, unless it aims at increasing labour productivity, at least in the long run. If up to this far it is not yet clear whether or not multiskilling does contribute to increased organisational productivity, it is recommended that the company accelerates improvements in the implementation of multiskilling.

- It is a good signal, as the findings of this study have indicated, that all the respondents from management agree that multiskilling needs to be evaluated by the organisational management. According to Horbury and Wright (2001:viii), the company that implements multiskilling must ensure that all employees are provided with regular opportunities to use their skills, otherwise these skills may degrade. They further state that the company should use performance reviews and task/competence frameworks to ensure skilled individuals are competent and confident in their job, as well as identifying any training or retraining required. It is therefore recommended that management at Hulett Aluminium should make a close monitoring of the extent to which multiskilling adds value to the company, so that they could easily identify areas where there is a need for improvement.

- The results of this study indicated that not all the respondents from the shop floor employees and managers agree that everybody within the organisation became aware of what multiskilling entails. An alarming factor is that there is one manager who strongly agrees, and two who agree with the statement, whereas there are two who disagree with this statement. This is an issue of concern, in that it shows that not everybody at Hulett Aluminium understood what multiskilling is

all about. It is strongly recommended that the company engages on an intensified awareness programme about multiskilling. This awareness will contribute positively towards everybody ensuring that the goals of the company, through multiskilling, are realised.

- The results of this study have also shown that there are differing opinions from shop floor employees with regards to whether or not everybody within the organisation warmly welcomed the adoption of multiskilling. Managers themselves have differing responses to this statement. If these statistical results are anything to go by, then it shows that some organisational members did not warmly welcome the adoption of multiskilling. This could possibly be attributed to the fact that some of the members of the organisation were not part and parcel of the introduction of the programme. They then resisted the adoption of the programme as they felt that they were left out of the introduction process. For Hulett Aluminium it is recommended that the company makes sure that the multiskilling programme is explained clearly and to the satisfaction of everybody within the organisation. It should also ensure that all the relevant stakeholders are made part and parcel of the introduction process. The company should also do all it can to make sure that there is nobody who is left behind when the multiskilling programme is being introduced.

- The research findings from this study have shown that not only five shop floor employees but also one manager strongly agree that multiskilling was targeting top-level management. This shows that there is an element of uncertainty as to which group within the organisation is the main target for the introduction of multiskilling. It is therefore recommended that there be clarity as to which group within the organisation is the main target group for the introduction of multiskilling. One would have expected that all managers be clear about the multiskilling programme and the main group that is being targeted by the introduction of the programme.

- The research findings from this study have indicated that the overwhelming majority of shop floor employees agree that multiskilling was targeting mainly their group. However, two managers strongly disagree with the statement. This is an issue of concern as it shows that some managers are unaware about the main target group for multiskilling. It is therefore recommended that managers be aware about the main target group for the introduction of multiskilling.

- It has also transpired from the research study that much as the majority of managers agree that a multiskilled workforce needs appropriate resources (e.g. proper equipment) for the application of their skills, there is one manager who strongly disagrees with this statement. This then raises some concerns because one would have expected that at least all the managers should be in a better position to know that a multiskilled workforce needs appropriate resources for the application of their skills. The recommendation here is that everybody, especially the managers, should be well-versed about the multiskilling programme and all the requirements for it to succeed.

- The research findings of this study have demonstrated that the majority of both shop floor employees and managers agree that multiskilling increases the level of worker motivation. However, there are two managers who remain neutral insofar as the contribution of multiskilling to increased worker motivation is concerned. This raises some concerns because one would have expected that a programme like multiskilling should be known to be contributing to worker motivation or not. It is therefore recommended that management should have measures in place by which to evaluate whether or not workers get more motivated by being multiskilled. Based on the observation that management could make, the necessary adjustments in the application of the programme could be effected accordingly.

8.2 Recommendations for Further Research

- Future research on multiskilling could be executed by covering more manufacturing companies around Pietermaritzburg, KwaZulu-Natal, and possibly around South Africa

- In future research could consider studying multiskilling in sectors other than manufacturing, for example, the construction industry, health, television production etc.

- Whilst conducting this study it transpired that a fair amount of research has been done, and some books published, on multiskilling in the health sector. It would be very interesting to conduct research on multiskilling in the South African health sector, and the extent to which multiskilling could contribute towards the improvement of our South African Health Department.

- Future research could also explore the advantages of muliskilling for a South African construction industry. The University of Texas in the United States of America has undertaken an in-depth research on multiskilling in a construction industry. Theses at masters and PhD levels, on multiskilling in a construction industry, have been written at this institution, although these have not been published yet. It would be very interesting to conduct research on multiskilling in a South African construction industry, to establish the extent to which this programme could be beneficial to the construction industry in this country.

CHAPTER 9

RESEARCH LIMITATIONS

Some major limitations the researcher encountered during the research process are highlighted in this chapter. These limitations are themselves very essential for future research on multiskilling.

9.1 Scarcity of Literature

The researcher struggled to get information on multiskilling, more especially the secondary sources of information. Not even a single text book, specifically on the subject of multiskilling was the researcher able to get anywhere in South Africa. All the attempts to get some published text books on multiskilling, through the inter loan library, were in vain. The researcher found himself having to rely on articles from journals; unpublished papers on multiskilling read at conferences around the world and websites of companies and organisations that have multiskilling as one of their programmes. The tried in vain, through the inter loan library, to order certain articles from journals and unpublished theses on multiskilling, from overseas institutions.

9.2 Time Constraints

The researcher conducted the research on a part-time basis. Since he had stipulated period during which he had to complete his research work, he confined himself to one manufacturing company. Given time, the researcher would have accommodated as many manufacturing companies as possible, at least in Pietermaritzburg, to conduct research on multiskilling.

9.3 Difficulty in Collecting Data

Both managers and shop floor employees at Hulett Aluminium were always having a very busy schedule. It became very difficult for the researcher to be accorded a slot for interviews with managers and also to distribute questionnaires to both managers and the

shop floor employees. Thanks to the assistance by Mr. K. Mshengu – Director of Human Resources, Mr. L. Makhanya – a Process Engineer, Mr. S. Shoba – a Training Specialist, who made the process of questionnaire distribution and collection a success. Without their extraordinary assistance, the whole process of data collection at Hulett Aluminium would have been doomed.

9.4 Hard-to-reach Population

Since the researcher had to resort to convenience sampling, due to the difficulties in accessing the population for this study, this was a limitation in itself. It was a limitation in the sense that the researcher had to rely only on those individuals that were available rather than selecting from the entire population. In this convenience sampling the researcher had to select the units from the population, based on easy availability and/or accessibility. The limitation that convenience sampling brought about was that it left the researcher with a faint idea as to how representative the information collected about the sample was to the population as a whole.

9.5 Case Study

One of the limitations of this research study was the fact that it was a case study, and therefore focused only on one company: Hulett Aluminium (Pty)Ltd. Since the case study approach deals with one company, it made it difficult to extrapolate the results to other companies and industries.

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ANNEXURE: A

University of KwaZulu Natal

Master of Business Administration

Questionnaire to managers and employees of Hulett Aluminium based in Pietermaritzburg

Topic: An Investigation into the Adoption of Multiskilling by the South African Manufacturing Industry

Sir/Madam

My names and surname are **Vangeli Wiseman Gamede**. I am an MBA student with the University of KwaZulu Natal and am currently engaged in a research project. The research seeks to investigate the Adoption of Multiskilling by the South African Manufacturing Industry. I have chosen Hulett Aluminium as a case study, as a way of achieving my main objective.

I wish to ask you a few short questions, which I hope would not take much of your busy schedule. All the information that you will provide will be treated with the **strictest confidence** it deserves.

Please answer all the questions by ticking where appropriate.

Rate the extent to which you understand the following to have taken/are taking place at Hulett Aluminium, using the following rating:

Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
1	2	3	4	5

1. All the relevant stakeholders were part of the adoption of multiskilling

1	2	3	4	5

2. Everybody within the organisation became aware of what multiskilling entails.

1	2	3	4	5

3. Everybody within the organisation warmly welcomed the adoption of multiskilling

1	2	3	4	5

4. It became easy for the organisation to apply multiskilling

1	2	3	4	5

5. Top-level management was the main target for multiskilling

1	2	3	4	5

6. Middle management was the main target for multiskilling

1	2	3	4	5

7. Shop floor employees were the main target of multiskilling

1	2	3	4	5

8. The organisation is still grappling with some problems pertaining to multiskilling

1	2	3	4	5

9. Training is an essential tool for multiskilling to be effective

1	2	3	4	5

10. Multiskilling alleviates the problem of absenteeism

1	2	3	4	5

11. A multiskilled workforce easily copes with the new, advanced technology

1	2	3	4	5

12. Multiskilled employees need appropriate resources (e.g. proper equipment) for the application of their skills.

1	2	3	4	5

13. A multiskilled workforce has a broad knowledge of the whole work of the organisation.

1	2	3	4	5

14. Multiskilling enhances employee flexibility, enabling individuals to be competent in several tasks

1	2	3	4	5

15. Multiskilling improves worker efficiency

1	2	3	4	5

16. Multiskilling removes departmental or unit barriers

1	2	3	4	5

17. Multiskilling encourages teamwork

1	2	3	4	5

18. Multiskilling contributes positively to Total Quality Management

1	2	3	4	5

19. Multiskilling contributes to increased organisational labour productivity

1	2	3	4	5

20. Multiskilling reduces organisational overall costs

1	2	3	4	5

21. Multiskilling reduces industrial conflicts

1	2	3	4	5

22. Multiskilling is very expensive and costly for the organisation

1	2	3	4	5

23. Multiskilling makes workers to lose a sense of specialisation

1	2	3	4	5

24. Multiskilling makes the workforce to lose self-esteem

1	2	3	4	5

25. Multiskilling reduces boredom

1	2	3	4	5

26. Multiskilling increases job satisfaction

1	2	3	4	5

27. Multiskilling contributes to reduced labour turnover

1	2	3	4	5

28. Multiskilling increases the level of worker motivation

1	2	3	4	5

29. Rewards for a multiskilled workforce are a motivating factor in the workplace.

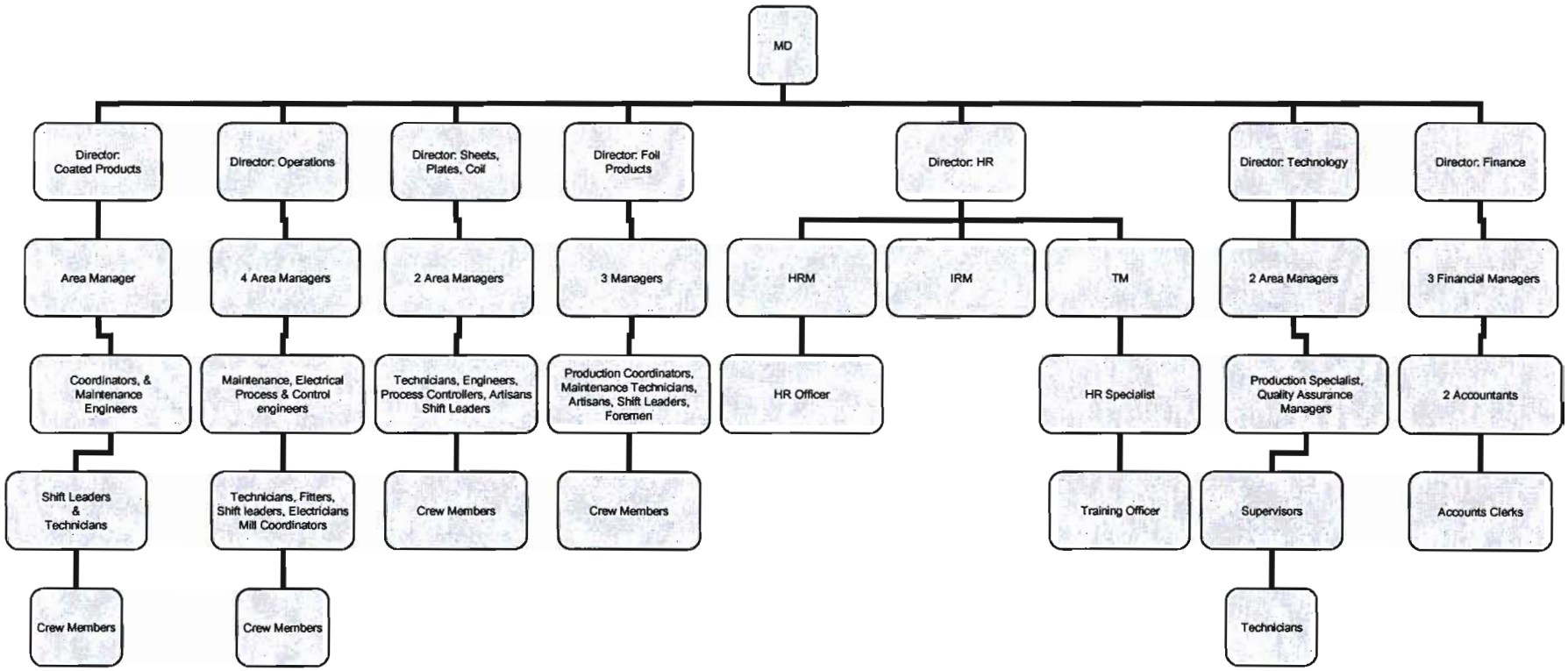
1	2	3	4	5

30. The effectiveness of multiskilling needs to be evaluated by the organizational management.

1	2	3	4	5

Annexure:B

Organizational Structure of Hulett Aluminium



ANNEXURE: C

ALUMINIUM SUPPLY CHAIN FOR HULETT ALUMINIUM