A STUDY TO DETERMINE THE FACTORS TO IMPROVE GROUP AND TEAM EFFECTIVENESS IN TRANSNET ENGINEERING

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A STUDY TO DETERMINE THE FACTORS TO IMPROVE GROUP AND TEAM EFFECTIVENESS IN TRANSNET ENGINEERING

By

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Declaration

I Sandile Goodwill Ngwenya and my student number is 20232224, hereby declare that this dissertation for Masters in Business Administration (MBA), and the work presented in it is my own and has been generated by me as the result of my own original research.

I further declare that:

i. This work has not previously been submitted to any other institution;

ii. Where any part of this dissertation has previously been submitted for a degree or any other qualification at NMMU or any other institution, this has been clearly stated;

iii. Where I have consulted the published work of others, this is always clearly attributed and referenced;

iv. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;

v. I have acknowledged all main sources of assistance.

Signed: …………………………….

Date: ………………………………

Acknowledgements

Abstract

Teams have increasingly become the means for completing tasks in many organisations, and organisations have turned to teams as a better way to use employee talents. Many South African companies have established work teams to solve both complex and minor problems, and some companies' performance has increased due to the implementation of work teams. The fact that organisations are using teams does not necessarily mean they are always effective, there are many factors that contribute to team effectiveness in an organisation, and these factors need to be identified and managed properly so that the team can remain effective and produce the results that are expected. Management of most companies is unaware of the factors that contribute to group and team effectiveness, and most teams are ineffective because of the lack of focus on the factors that improve group and team effectiveness.

This is the reason or objective why this study was conducted at Transnet Engineering, to identify the factors that are critical to improving team effectiveness. The researcher conducted a literature review in order to determine the factors that improve group and team effectiveness. Some of the factors deal with organisational culture, motivation (monetary and non-monetary motivation), diversity in teams, size of teams, formulation of teams, team leadership, team goals, team structures, team member training, trust in teams, etc.

An empirical study with the use of a questionnaire was also conducted to determine the perceptions that supervisors, superintendents, foremen and managers have at Transnet Engineering with regards to factors that improve group and team effectiveness. The research instrument was grouped into five categories; organisational context, individual context, team context, management support and team effectiveness. More than 50% of the respondents agreed with the organisational and individual context factors that were tested, around 75% of the respondents agreed with team context factors that were tested, almost 60% of respondents agreed with management support factors, and more than 60% of respondents indicated that their teams are effective.

Although there is general agreement between most factors identified in the literature study and the empirical study, the following will need more focus:

- Offering of team resources
- Leadership support from executive committee members (EXCO)
- Proper reward and recognition systems
- Conducting research to identify employee satisfaction levels
- Team development
- Diversity management
- Talent management
- Team size

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INTRODUCTION, PROBLEM STATEMENT, RESEARCH METHODOLOGY AND DEFINITION OF CONCEPTS

1.1 INTRODUCTION

According to Robbins and Judge (2013:342) teams are increasingly becoming the primary means for organising work in contemporary business firms. They further state that, as organisations have restructured themselves to compete more effectively and efficiently, they have turned to teams as a better way to use employee talents. Teams are more flexible and responsive to changing events than traditional departments, or other forms of permanent groupings. However, the fact that organisations are using teams does not necessarily mean they are always effective, there are many factors that contribute to team effectiveness in an organisation, and these factors need to be identified and managed properly so that the team can remain effective.

According to the Korn/Ferry Institute (2009), the key to developing high performing teams is to remember that successful teams do not simply happen. They take much effort and time. They take proper guidance and support from the team leader. They require an organisational culture which enables and fosters team work. To attain a high level of team performance, we must be knowledgeable about what factors influence team dynamics and team effectiveness.

Some of the factors that affect team effectiveness are:

Leadership

Senn (1999:95) maintains that a leader has a vision and conviction that a dream can be achieved. He inspires the power and energy to get it done.

According to Kreitner, Kinicki and Buelens (2002:450), leadership is a social influence process in which the leader seeks the voluntary participation of subordinates in an effort to reach organisational goals. Poor leadership may affect team effectiveness.

According to Kangis and Lee-Kelley (2000), leadership is a relationship through which one person influences the behaviour of other people. Leaders must not only be able to define departmental, unit or organisational missions, but they must also be able to coordinate the activities of others and motivate them to meet mission requirements.

Communication

Communication is defined by Kelly (2000:92-101) as the process by which information is exchanged and understood by two or more people, usually with an intent to motivate or influence behavior. According to Hellriegel (1999:564), complicated language can be a barrier to communication, therefore one must choose words which will be understood by others, sentences must be concise and jargon language must be avoided.

Organisational Culture

Hofstede (1991:5) says culture is always a collective phenomenon because it is at least partly shared with people who live or lived within the same social environment, which is where it was learned. It is the collective programming of the mind which distinguishes the members of the group or category of people from another group.

Business Ethics

Potgieter, Bagraim, Viedge and Werners (2003:30) argue that management must develop a comprehensive code of ethics for all people (managers, employees, suppliers etc.), and top management and other role models must behave ethically in all respects to promote team effectiveness.

Motivation

Garson, Steward and Vasu (1990:41) state that motivation is the study of why people behave the way they do, why they do or do not expend effort towards goal achievement in organisational settings. Whatever the ability level of individuals, the effort they give towards accomplishment of organisational goals will depend on their level of motivation. Potgieter et al (2003:53) state that a manager must find out what the employees' needs are and what goals they have set for themselves….an

effective manager directs employees to enable them to fulfill their individual needs and to contribute to achieving the goals of the organisation.

Diversity

Kreitner et al (2002:34) maintain that diversity represents the multitude of individual differences and similarities that exists between people. De Beer (1998:58) suggests that management must actively promote a culture of value tolerance between the different culture groups.

Team factors have a huge impact on the organisation in such a way that they affect productivity, effectiveness, efficiency, and also affect team cohesion and functioning. Havenga (1999:18) states that, according to Blanchard (1998), in a satellite broadcast, effective teams can be summed up in the word "PERFORM". This is an acronym for:

P is for purpose and values. The reason why tasks are performed and how they are done.

E is for empowerment. Individuals and groups need to control their jobs effectively.

R is for relationships. Communication needs to be open and honest.

F is for flexibility to enable the team to adapt to changing situations and not become stuck in a certain mode.

O is for optimal performance. Each team must ensure that it meets its goals efficiently

R is for recognition. Individuals and teams need recognition for their efforts.

M is for morale. Team members need to feel good about what they are doing.

This study, therefore, was aimed at determining the factors that are critical to improving group and team effectiveness at Transnet Engineering.

1.2 MAIN PROBLEM

Many South African companies have established work teams to solve both complex and minor problems; some companies' performance has increased due to the implementation of work teams. However, management of most companies is unaware of the factors that contribute to group and team effectiveness, and most

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teams are ineffective because of the lack of focus on the factors that improve group and team effectiveness.

This leads to the following problem which will be addressed in the research.

What are the factors for improving group and team effectiveness at Transnet Engineering?

1.3 SUB PROBLEMS

In order to develop a research strategy to deal with and solve the main problem, the following sub-problems have been identified:

a) What factors does the literature reveal will improve group and team effectiveness?
b) What factors do supervisors and managers at Transnet Engineering believe improve group and team effectiveness?
c) How can the two be integrated to determine the factors that improve group and team effectiveness?

1.4 DEMARCATION OF THE RESEARCH

In order to ensure that the research project was manageable, it was significant that it is demarcated and limited to Transnet Engineering Koedoespoort plant in Pretoria. Although this study was limited to Koedoespoort plant, it does not mean that the study cannot be done in other Transnet Engineering plants which are located in other centres that are indicated in chapter 2.

1.4.1 Geographical demarcation

Transnet Engineering Koedoespoort plant is located in Koedoespoort, Pretoria, in Gauteng province.

1.4.2 Organisational level of teams

Teams studied operate in all spheres and levels of the organisation, and consist mainly of multicultural, diverse and multidiscipline personnel. Supervisor, foremen and managers are designated team leaders for these teams, and the study was limited to these people.

1.4.3 Size of the organisation

There are 11 operational business units within Koedoespoort plant and each business unit employs more than 150 employees. Each operational business unit was used for the purpose of this study, the motive for this was that each operational business unit has teams established to solve or perform critical tasks.

1.5 DEFINITION OF SELECTED ITEMS

Before delving into the research body it is necessary to explain some of the terms that will be used in the study.

1.5.1 Team

Plaatjies (1999:4), quoting Katzenbach and Smith (1993:111), concludes that a work team is a natural work group of three or more individuals with complementary skills, whose full time work related activities are guided by a common purpose, goals and approach for which they hold themselves mutually accountable. Moxon (1993:4) says that a team is distinct from a group when it has the following attributes: A common purpose, recognition by each individual as belonging to the same unit (i.e. team identity) interdependent functions, agreed norms or values which regulate behaviour.

Kreitner and Kinicki (1992:396) define a team as an officially sanctioned collection of individuals who have been charged with completing a mission by an organization and who must depend upon one another for successful completion of that work.

For the purpose of this study the term "team" is synonymous with "group". Hereafter the term "team" will be used exclusively.

1.5.2 Effectiveness

Robbins and Judge (2013:63) mention that effectiveness is the degree to which an organisation meets the needs of its clientele or customers. Johnson and Scholes (2002:168) state that effectiveness is the ability to meet the customer requirements. Robbins and Judge (2013:62) state that an organisation is productive if it achieves its goals, and they further mention that productivity requires both effectiveness and efficiency, where efficiency is the degree to which an organisation can achieve its needs at a low cost.

Therefore, reading from the above, it is evident that there is a close correlation between effectiveness and productivity.

For the purpose of this research the term "effectiveness" is synonymous with "productivity", where effectiveness means meeting customer requirements and productivity means meeting customer requirements efficiently.

Hereafter the term "effectiveness" will be used exclusively.

1.6 SIGNIFICANCE OF THE RESEARCH

According to Robbins and Judge (2013:342), teams are increasingly the primary means for organising work in contemporary business firms. They further state that, as organisations have restructured themselves to compete more effectively and efficiently, they have turned to teams as a better way to use employee talents. However, many organisations want to improve performance or organisational effectiveness through the use of effective teams, but teams become effective if the factors for improving team effectiveness are known and managed. Organisations have failed to identify the critical factors that increase team effectiveness, to improve the performance of the organization.

Bateman and Snell (1999:472) state that a real team is formed of people with complementary skills who trust one another and are committed to a common

purpose, common performance goals, and a common approach to which they hold themselves mutually accountable. They further state that management has authority and is responsible to develop teams that are effective to meet organisations' overall performance objectives. However, management may not be able to develop an effective team if they are unaware of the factors that improve team effectiveness. Management at all levels must support team efforts openly and without reservation if it expects the team to succeed. Management and supervisors involvement in team activities will promote trust and cooperation between them and their subordinates and will enhance their own reputation and effectiveness.

It is necessary that the organisation's management knows the factors for improving team effectiveness, and they have to manage properly those identified factors for the benefit of everyone (team members, management etc.) in the organisation. It is the purpose of this research to help identify all the key factors to improving team effectiveness. Some of the factors deal with organisational culture, motivation (monetary and non-monetary motivation), diversity in teams, size of teams, formulation of teams, team leadership, developing team goals, team structures, team member training etc.

Robbins and Judge (2013:359) state that in a team where there is interdependence, the success of the whole depends on the success of each one, and the success of each one depends on the success of the others. Success requires a great deal of coordination between interdependent team members. Work teams may be productive in organisations, although making them successful is not easy.

This study provided an insight into the factors that govern team effectiveness. This knowledge, gained from the literature study, coupled with the data collected from the empirical study was integrated in order to conclude the most critical factors to improving team effectiveness in Transnet Engineering.

1.7 RESEARCH DESIGN

In this section the methodology followed in the research project is described.

1.7.1 Research Methodology

The following procedure was adopted to solve the main and sub problems.

a) Literature study

Factors that improve team effectiveness were identified from the literature study.

b) Empirical Study

Survey

A hand delivered survey was conducted in the delimited area using a questionnaire drawn up by the researcher, to determine the factors to improving team effectiveness.

Measuring instrument

The measuring instrument used in the study was a comprehensive questionnaire, developed by the researcher, to determine the rating of the factors for improving team effectiveness.

Sampling and population

The population comprised supervisors, superintendents, foremen and managers of selected operational business units in Transnet Engineering Koedoespoort plant which is located in Pretoria, Gauteng province.

Statistical analysis of data

The statistical procedures used in interpreting and analysing the data were determined in consultation with a statistician at the time the questionnaire was drawn up.

c) Integration of the literature and empirical studies

The results of the literature study together with the results of the empirical study were integrated to determine the final list of the factors to improve team effectiveness. The list serves as the commandments and guidelines of factors for promoting group and team effectiveness in Transnet Engineering.

1.8 RELIABILITY AND VALIDITY

According to Leedy (1997:35), reliability is seen as the consistency with which the measuring instrument performs. Therefore, apart from delivering accurate results, the measuring instrument must deliver similar results consistently. In this study, a pilot test was conducted on colleagues of similar profile to the recipients of the questionnaire. The aim of the pilot study was to ensure that all questions were understandable and relevant. The reliability was also tested using Cronbach's alpha, which is the method that was agreed upon after consultation with the statistician.

Nkonki (2005), citing Cooper and Emory (1995:148), defines validity as the extent to which a test measures what is actually measured, the extent to which differences found with a measuring tool reflect true differences among respondents being tested. Leedy (1997:32) states that validity is concerned with the soundness and effectiveness of the measuring instrument. Does it measure what it intended to measure? How accurate is that measure? In the case of this study, a pilot test was conducted with colleagues of similar profile to the recipients of the questionnaire. The aim of the pilot study was to ensure that all questions were understandable, relevant and measured what they are supposed to measure.

1.9 ETHICAL CONSIDERATIONS

Ethics clearance form for treatises/dissertations/theses (form E) of the Nelson Mandela Metropolitan University Business School was completed and submitted to Business School, see annexure A.
Permission to conduct research at Transnet Engineering was requested and approval was given, see annexure B.

The research instrument (questionnaire) was accompanied by a covering letter which stated the purpose of the research, and the covering letter also mentioned the issue of confidentiality, see annexure C.

1.10 LIMITATIONS

The study was delimited to operational business units in Transnet Engineering Koedoespoort plant which is located in Pretoria, Gauteng province.

1.11 OUTLINE OF THE STUDY

The research consists of the following chapters:

Chapter 1 - Introduction, problem statement, demarcation of studies, definition of key terms, significance of the study, research design, reliability, validity and ethical considerations.
This chapter also includes an outline of the programme of study.

Chapter 2 - This chapter provides an environmental overview of Transnet Engineering, to give the reader an understanding of the organisation in which the study was conducted.

Chapter 3 - Elaborates on the theory of the work teams in the context of determining the factors promoting team effectiveness and to ensure a clear understanding of concepts.

Chapter 4 – This chapter explains the research methodology followed, the survey method used and the design of the empirical survey is described.

Chapter 5 – This Chapter presents the findings or the results and a discussion of the results follows together with tables and graphs of the relevant data.

Chapter 6 - The findings from the survey are integrated with the literature study in order to finalise the list of the factors that improve team effectiveness in Transnet Engineering, along with recommendations and conclusions.

1.12 CONCLUSION

In this chapter, the problem statement, significance of the study, definition of selected terms, reliability, validity, ethical considerations and general outline of the research design was stated, as well as a general overview of the chapters.

Chapter two will provide a background overview of Transnet Engineering, to give an understanding of the organisation in which the study is conducted.

CHAPTER 2

TRANSNET ENGINEERING OVERVIEW

2.1 INTRODUCTION

This chapter is aimed at giving a general overview of Transnet Engineering, analysis of the business units, functions and tasks, and the overall aim is to indicate that there are groups and teams in Transnet Engineering.

Transnet Engineering (TE), an operating division of Transnet SOC Ltd, is the backbone of South Africa's railway industry with nine product-focused businesses, 132 depots, six main factories and over 150 years of experience in rail, and 13,000 employees countrywide. Transnet Engineering is ideally positioned to service this vital sector (Transnet Engineering, 2013).

2.1.1 Transnet Engineering Business Focus

The business focuses on:

- Refurbishment, upgrading, manufacturing and the maintenance of electrical Alternating Current (AC) and Direct Current (DC) diesel locomotives;
- Manufacturing and maintenance of freight wagons for various commodities;
- Overhaul, upgrading, new build and maintenance of suburban and mainline passenger rail coaches;
- Provision of engineering services to ports and harbours across the SADC region;
- Manufacturing of associated components such as rotating machines, rolling stock equipment, cast components, wheels, tarpaulins, intermodal containers, cleaning and logistic services, port and terminal equipment.

2.2 HISTORICAL OVERVIEW

With origins dating back more than a century to the mechanical engineering department of the former South African Railways and Harbours, this engineering organization has actively supported railways in the expansion of the country's

economy and over the decades has developed some of the most innovative bogies and wagons ever built for 1067mm track. Through the years, Transnet Engineering has become the key supplier of customised rolling stock for the coal, iron-ore, intermodal, agricultural, fuel and cement industries (Transnet Engineering, 2013).

2.3 TRANSNET ENGINEERING EXECUTIVE COMMITTEE

Figure 2.1 Transnet Engineering Executive structure
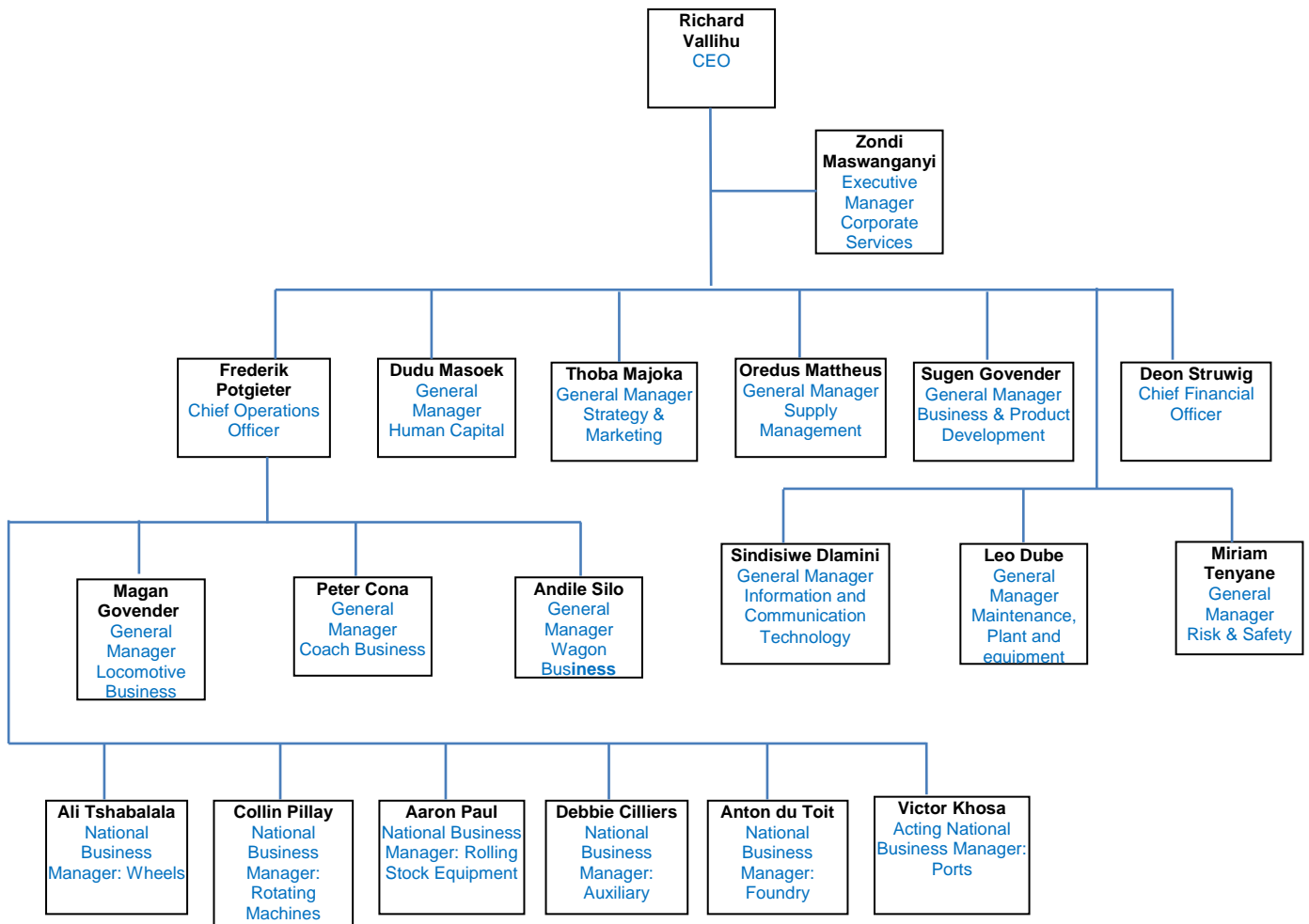
Source: Transnet Engineering (2013)

2.4 TRANSNET ENGINEERING MISSION, VISION AND VALUES

Mandate/Mission

The mandate of Transnet SOC Ltd (Transnet or the Company) is to assist in lowering the cost of doing business in South Africa, enabling economic growth and ensuring security of supply through providing appropriate port, rail and pipeline infrastructure in a cost-effective and efficient manner, within acceptable benchmarks. Transnet's mandate and strategic objectives are aligned with the Government's New Growth Path (NGP) and the Statement of Strategic Intent (SSI) issued by the Minister of Public Enterprises (Transnet Engineering, 2013).

Vision

Transnet is a focused freight transport company, delivering integrated, efficient, safe, reliable and cost-effective services to promote economic growth in South Africa. This is achieved by increasing the Company's market share, improving productivity and profitability and by providing appropriate capacity to customers ahead of demand, within affordability limits (Transnet Engineering, 2013).

Values

Integrity, Honesty, Trust, Respect, Business Excellence, Customer Focus, Commitment, Good Work Ethics, Visionary Leadership, Teamwork, Empowerment, Innovation, Equitable Distribution (Transnet Engineering, 2013).

2.5 TRANSNET ENGINEERING ACHIEVEMENTS

Transnet's achievements include OEM accredited facilities, ISO 9002 with the future aim of achieving ISO 14 000, Centres of Excellence, the award of international wagon building tenders, the securing of the 18E, 9E and 11E locomotive contracts, the obtaining of the 10M motor-coach contract, the formation of strategic alliances with international equipment manufacturers, opening up of new markets on the African Continent and the increase in sales turnover on the domestic and regional markets to Spoornet, SARCC/Metro, COAL link and OREX (Transnet Engineering, 2013).

2.6 TRANSNET ENGINEERING COMPETITIVE ADVANTAGE

Transnet is inextricably linked to the technologies underpinning its position in the railway rolling stock market through the following:

- computerized control of factory costing and processes
- well positioned and equipped factories with technologically advanced machinery
- skilled workforce with experience in the manufacturing, assembly, refurbishing, converting and upgrading of railway rolling stock
- engineering departments with experience in the development of designs, prototypes, jigs and tooling

2.7 TRANSNET ENGINEERING OPERATIONAL BUSINESSES

Transnet Engineering's internal structure comprises nine operational businesses as indicated in fig. 2.2, namely: Wagon, Locomotive, Coach, Rolling Stock Equipment, Rotating Machine, Wheel, Auxiliary, Port and Foundry businesses. The Wagon, Locomotive, Coach and Port businesses are the primary customer-facing entities and revenue generators, while the other five operational businesses provide a supportive role within the organisation with the exception of the auxiliary business which has a substantial portion of its activity directly focused on serving Freight Rail.

Figure 2.2 Transnet Engineering Operational Businesses

Source Transnet Engineering (2013)

These operational businesses are in different Transnet Engineering centres, and the detail discussion of the centres follows in the next section.

2.8 TRANSNET ENGINEERING OPERATIONAL CENTRES

According to (Transnet Engineering, 2013), Transnet Engineering operates in 6 centres, and each centre has different operational and support businesses falling under the specific centre. For the purpose of this paper, focus will be mainly on Koedoespoort centre operational businesses. The operational businesses within the centre report to the respective General Manager or National Business Manager for that specific business. Refer to fig. 2.2 for general managers and national business managers.

These are the Transnet Engineering centres and the centre operational businesses:

Koedoespoort Centre in Pretoria
The Koedoespoort (KDS) centre has the following operational businesses:

Locomotive Upgrade, Locomotive MOP, Locomotive New Build, Locomotive Power Electronics, Coaches, Wheels, Rotating Machines, RM Diesel Engines, Rolling Stock Equipment, Auxiliary and Foundry.

Germiston Centre
Germiston centre has the following operational businesses:

Electric Locomotives Maintenance, Diesel Locomotives Maintenance, Wheels, Auxiliary, Wagons.

Uitenhage Centre
Uitenhage centre has the following operational businesses:
Locomotives, Wagons, Wheels and Rolling Stock Equipment

Durban Centre
Durban centre has the following operational businesses:

Coaches, Richards Bay Coal line Wagons, Southdunes Coal line Wagons, Bayhead Wagons, Wentworth Diesel Locomotives, Umbilo Electric Locomotives, Auxiliary, Rolling Stock Equipment and Wheels.

Bloemfontein centre

Bloemfontein centre has the following operational businesses:

Coaches, Wagon new build, Foundry, Rolling Stock Equipment, Wheels and Locomotives.

Salt River centre

Salt River centre has the following operational businesses:

Coaches, Wheels, Rotating Machines, Rolling Stock Equipment, Auxiliary,

Saldanha – Locomotives, Wagons, Wheels and Support Services, and Bellville – Containers, Wagons and Locomotives

For the purposes of this research paper, focus is on Koedoespoort (KDS) centre main plant which is located in Pretoria. Although there are support service departments within the centre, the focus is on Operational businesses.

2.9 KOEDOESPOORT CENTRE OVERVIEW

The vast mechanical workshops at Koedoespoort, officially opened in October 1954, still rank among the favorite showpieces of the South African railways industry. The massive Koedoespoort facility encompassing 94 hectares (230 acres) of workshops, foundries, offices and stores buildings was ranked the largest and most modern railways workshops in Africa, (Transnet Engineering, 2013)..

Construction of the workshops was divided into three portions, with the southern portion or machine shop block covering eight acres, the boiler shop block covering nine acres and the erecting shop block covering another nine acres. Stores buildings, boiler-house steaming and weighing sheds, the compressor house, electric sub-stations, transport garages, production control office, laboratories, the

automatic telephone exchange, the police station and the main administrative buildings also had to be catered for.

The northern portion of the layout was to consist of the coach shop and sawmills, paint shop and trimming shop, although this was still under construction at the time.

Careful planning and efficient quality assurance played a major part in the production processes on the shop floor. Artisan staff requirements were to be taken care of by apprentice training schools and the machinery, the finest and most modern available, was estimated to cost £5 557 000, (Transnet Engineering, 2013).

The main workshop buildings had the latest monitor roof, which allowed maximum lighting and ventilation – certainly quite a progressive move at the time. Favorable natural light was achieved by glazing the full length of the bay monitor and the setting of large windows in the brick side walls. Roller shutter doors were fitted to all the large doorways – another innovation that still works extremely well today.

The Koedoespoort Centre also known as the Flagship of Transnet Engineering is situated in Pretoria right opposite to the Transnet Engineering Corporate office. The Centre is erected on 100 hectares of land, with over 64 technologically advanced operational workshops with state of the art equipment and machinery, a couple of office buildings, training centre, two canteen facilities, a Clinic, Library and employee assistance programme (EAP) centre (Transnet Engineering, 2013).

2.9.1 Koedoespoort Centre Operational Businesses

Fig. 2.3 below indicates the number of operational businesses in Koedoespoort, and it also indicates the Business Manager who is accountable and responsible for managing the section. Each business indicated on the diagram has within it various teams and groups, who are grouped together to perform certain activities to produce the final product. Each business unit in the centre has various managers and supervisors who are responsible and accountable for managing various teams and functions of the business to achieve organizational goals and meet customer requirements. Business units have Business manager, Production manager(s), Production supervisors, Quality assurance supervisors, Logistics manager, Quality manager, Customer Service manager, etc.

Each operational business has a Support business providing services in Human Capital, Risk and Safety, Maintenance of Plant and Equipment, Assets, Product development, Finance, Project management and Corporate governance. However, this paper focuses only on operational businesses.

Figure 2.3 Koedoespoort Centre Operational Businesses

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                        ┌──────────────────┐
                        │  KDS Centre      │
                        │  Operational     │
                        │  Businesses      │
                        └──────────────────┘
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| Locomotive Upgrade Business **Alfred Kota** | Locomotive New Build Business **Sterra Mbotyi** | Locomotive MOP Business **Theunis Engelbrecht** | Locomotive Power Electronic Business **Martin Slabbert** | Coach Business **Tebogo Mabena** |

| Wheels Business **Justice Bisholo** | Rotating Machines Business **Nomaweza Ngxonono** | Rolling Stock Equipment Business **Charles Moeng** | RM Diesel Engines Business **Sondaha Maivha** | Auxiliary Business **Zak Khoza** | Foundry Business **Geloep Snyman** |

Source: Transnet Engineering (2013)

2.9.2 Description of Koedoespoort Centre Operational Businesses

These are the operational business units in which the study was conducted.

- **Locomotive Upgrade Business**

The Koedoespoort Plant was established in the 1950s to refurbish steam locomotives. After the steam era, the plant was adapted in the 1970s to refurbish electric locomotives and motor coaches. In 1999, a major change in strategy took

place and it was decided to get involved in the upgrading of locomotives. The upgrade business focused on installing new technologies to the older locomotives to extend the life of the aging fleet. The evolution in the area of upgrading started with the 6E1 to 17E Upgrade and thereafter to the evolved current 18E upgrade. To date more than 500 x 18E locomotives have been built in the facility, which forms the largest base fleet in Transnet Freight Rail General Freight Business. In 2007, the factory started the upgrade of diesel locomotives (Transnet Engineering, 2013).

- **Locomotive MOP Line**

The MOP line was established in 2002 to take care of the refurbishing process and has now expanded into the repair of wrecked locomotives. The MOP business also has a bogie production line where bogies are supplied to locomotive businesses (Transnet Engineering, 2013).

- **Locomotive New Build**

In 2008, a step was taken to move into the locomotive new build market. Fifty GM39-200 Class locomotives were successfully built and delivered to Transnet Freight Rail. Now the New Build line includes the GE 43 Class Diesel Locomotives and is producing Electric Locomotives (Transnet Engineering, 2013).

- **Locomotive Power Electronics**

One of the strategic businesses, The Power Electronic Business was established from the Semi-conductor Chopper Business which was initially started to assist in the repair of chopper controls. This Business supports the entire fleet of locomotives within South Africa, with the repair of all manner of electronic cards as well as rendering a service to the mining industry. The Locomotive Business has modernised, through capital investments, to become the leading player in the wreck repair, upgrading and new-build market in South Africa and Africa (Transnet Engineering, 2013).

- **Coach Business**

The Coach Business provides repair, refurbishing, upgrade and manufacturing services for suburban electric train sets and mainline coaches. Modernisation of South Africa's large Direct Current (DC) suburban fleet is one of the Business's main markets and its modular upgrade designs extend the economic lifespan of the sets. During upgrades, passenger and driver ergonomics are enhanced wherever possible, while safety and operating performance are increased. Designs include dining, lounge and kitchen cars, sleeper and sitter coaches and power units.

- **Wheel Business**

The Wheel Business specialises in the manufacturing and refurbishing of all types of railway wheel sets for the Southern African region. Equipped with the latest technology, including wheel-profiling portal lathes and laser measuring equipment, the Wheel Business has the capacity to refurbish in excess of 100 000 wheel sets annually for diesel or electric locomotives, passenger coaches and freight wagons. The main activities comprise wheel re-profiling, machining of axles, centres and tyres, fitting of wheel bearings, driving gears and motor suspension tubes as well as centre re-tiring, journal burnishing and crack detection through ultra-sonic testing from factories and depots on the main cargo routes (Transnet Engineering, 2013).

- **Rolling Stock Equipment Business**

The Rolling Stock Equipment Business manufactures parts and sub-assemblies for locomotives, coaches and wagons. Processes involve laser cutting, bending, welding, forging and fabrication of carbon and stainless steel. The Business also repairs and upgrades components to extend the lifespan of rolling stock. This includes refurbishing of brake valves and cylinders, couplers, pantographs and the overhaul of diesel engines, turbo-chargers and compressors.

- **RM Diesel Engine Facility**

The centre of excellence (C.O.E) diesel engine facility (EMD and GE), was established to rebuild and upgrade the locomotive diesel engines.
Currently engines are re-built for only one client which is the Locomotive business.
The future plan for this facility is not only to rebuild diesel engines for internal clients, but also for external clients such as Port Net, Mines and neighbouring countries.

- **Rotating Machine Business**

The Rotating Machines Business refurbishes and upgrades traction motors, auxiliary motors, compressors and exhausters for both the electric as well as diesel locomotives. Traction motors are qualified and load tested to full capacity on the back-to-back motor test facilities. Electrical work includes repair and manufacture of traction IP and field coils, complete rebuilding, rewinding and repair of armatures.

- **Auxiliary Business**

The Auxiliary Business offers both products and services for rail cargo as well as container refurbishing and wagon cleaning. Supplying newly manufactured, repaired and washed tarpaulins and accessories, product diversity extends to cargo canopies, scotches, lashing chains, road trailer tarpaulins, boat covers, tents and other PVC material products, trimming and cargo protection equipment (Transnet Engineering, 2013).

- **Foundry Business**

The Foundry Business provides a range of cast products for the rail industry from locomotive, wagon and passenger coach parts through to permanent way components. Other industry sectors are also served, such as mining, automotive and marine. Based at Koedoespoort and Bloemfontein, the facilities are well equipped with state-of-the-art furnaces and moulding machines. Metals cast include brass, copper, tin and lead alloys, carbon steel as well as spheroidal graphite and grey iron.

At Koedoespoort, the workshop is equipped with two energy-efficient induction furnaces and a semi-automated CT3 moulding machine for producing greensand moulds. The facility has its own sand plant and also has heat treatment ovens. In addition, the foundry men have a full suite of equipment for fettling, shot blasting and finishing. There are also copper and brass furnaces as well as ingot making machines (Transnet Engineering, 2013).

In summary, it is important to note that in each of the operational businesses mentioned above there is a team of managers, a Business manager who manages the whole business and a team of managers who report to him/her, Production managers who oversee that production targets are met and manage the team of Supervisors under their control. Supervisors manage the production floor teams, Logistics managers manage a team of production and material planners to ensure material is available for production. Quality manager is responsible for managing a team of Quality controllers who ensure that a good quality product is delivered to the customer. The Customer service manager is responsible for marketing and sales, and customer relationship management.

2.9.3 Description of Koedoespoort Centre Support Businesses

The following Koedoespoort Centre Support Businesses info was obtained from Transnet Engineering (2013).

- **Human Capital**

Human Capital management is the strategic support function responsible for the recruitment and maintenance of human resources for Transnet Engineering. The function is divided into the following interdependent areas geared towards supporting the business in general and operations in particular:
a) Recruitment and Selection.
b) Change Management.
c) Employee Relations.
d) Performance Management.
e) Training and Skills Development (School of Engineering).

- **Risk and Safety**

The Risk and Safety department is a critical support functions for all the Operational businesses and Support functions within Transnet Engineering.

Transnet Engineering operates in an environment that can be turbulent as a result of the nature of the activities, size and complexity of operations that often lead to incidents such as injuries, occupational diseases, environmental pollution and business risks. In order to respond to these risk factors, the department is structured into the following portfolios:-

a) Railway Safety

b) Occupational Safety and Health

c) Environment

d) Enterprise Risk Management

These portfolios render various critical services that seek to reduce or eliminate any significant impact of a possible incident within the working environment. The department further plays a facilitation role in the development and implementation of the strategic controls and mitigation measures to avoid the recurrence of the associated risks and exposures.

- **Strategy and Marketing**

The Strategy and Marketing division plays a critical role in ensuring Transnet Engineering is positioned for growth and there are opportunities identified for this growth.

The Strategy and Marketing department is divided into these four following areas:-

a) Corporate Marketing

Focuses on the development of markets and sales, guides the efforts of the national sales teams, develops the strategy for business and corporate planning, negotiates

with customers and concludes contracts for domestic and international supply of products and services. This unit is involved in the tendering process and assists the national businesses in realising new sales volumes.

b) Projects Support Office

The Projects Support Office ensures strategic alignment to the goals and developmental objectives of Transnet Engineering in line with overall Transnet SOC, Ltd. This unit ensures proficiency in operations through investment programmes aimed at short and long-term business sustainability and assists businesses in project management from identification of improvement opportunities to implementation and realization of such opportunities.

c) Commercial

The commercial division plays a dual role of firstly maintaining commercial governance structures through the TE Commercial Committee, development and implementation of standardised commercial practices and the management of commercial risks. The second role relates to providing support to Marketing in the form of proposals compilation, commercial review and negotiation of agreements, ensuring market related pricing that meets the shareholder requirements, maintaining a database of market intelligence, managing customer relationships and providing capability building services to both marketing and customer relationship management team. Furthermore, they increase the global recognition of Transnet Engineering as an organisation through the management of CSDP initiatives.

d) Lean Six Sigma

The primary focus of Lean Six Sigma is to apply the breakthrough business strategy and world class methodology, to drive change, increasing productivity and improving efficiencies, thereby leading to reduction in costs of doing business with valued customers and providing services and commodities at world class standards. Lean Six Sigma empowers and allows employees to take ownership of continuous business improvements through identifying value added to non-value added activities at their respective workplaces.

- **Corporate Services**

Corporate services is a support function established as a strategic enabler within Transnet Engineering, in the Office of the Chief Executive, to primarily create an enabling environment for businesses to streamline their performance information and regularly report against the set targets in line with the Corporate Plan and Strategy. The function also specialises in the provision of legal support, advice and compliance strategy to businesses throughout the organisation and further monitors its compliance to the BBBEE legislative framework.

- **Supply Management**

Supply Management's role is to purchase goods and services for Transnet Engineering business in order to ensure rolling stock availability and reliability through strategic and tactical buying methods. In ensuring that the process is carried out efficiently, the department is structured as follows:

a) **Supplier Development:** champions the Transnet Engineering Supplier Development Strategy which includes Customer Supplier Development Programme (CSDP) and Preferential Procurement;

b) **Procurement Operations:** Procures goods or services according to demand at the best possible cost to meet the needs of the businesses in terms of quality, quantity, time, and location;

c) **Contract Management:** Secures the supply of material and services through the establishment of contracts that support the product-focussed businesses to achieve the goals and objectives of national businesses. Furthermore, it manages the contract life cycle through interventions that will enable Transnet Engineering to maximise benefits derived from contracts established;

d) **Strategic Sourcing:** Explores and implements initiatives that result in Total Cost of Ownership savings for Transnet Engineering and monitors the Procurement savings that result therefrom. In addition, where sole suppliers exist, sources alternative suppliers and have them approved by Transnet Engineering's Technical Team. Equally, Strategic Sourcing needs to remain abreast of industry demand and supply and new technologies available for the commodities that are

procured. In conclusion, they develop improved relationships with suppliers of strategic items, thereby increasing flexibility and ease of doing business;

e) **Continuous Improvement:** Develop and deploy best practice of supply management strategies in order to maximise efficiencies and optimise resources while instilling compliance, and maintain vendor master and support the Supplier Relationship Management System.

- **Finance**

Through constant interaction with various role players, the Finance Department strives to:

a) Develop and coordinate financial planning and budgeting;

b) Provide cost effective, fast, efficient and independent transaction processing;

c) Provide accurate, analysed and timely financial information for decision making;

d) Ensure sound governance through controls, systems and audits;

e) Assist with target setting and efficiency calculations (Lean Six Sigma); and

f) Be involved in task driven teams to support Transnet Engineering to be the world class business it wants to be.

- **Business and Product Development**

Business and Product Development is responsible for the design, development and testing of new products as well as the modernisation and upgrading of existing products. The department is divided into Locomotive, Wagon, Coach and Component development sections in order to fully address the needs of the business. These are supported by Mechanical and Electrical Design Offices, specialising in the technology and intellectual property that exists in Transnet Engineering designs through a dedicated group of professionally qualified engineers, technologists and technicians. Business and Product Development is in essence, the engineering core of the organisation.

- **Information Communication and Technology (ICT)**

ICT is responsible for providing technological support for all activities involving information in order to assist Transnet Engineering to achieve operational excellence. The business focuses on the following areas:

a) SAP – Logistics, Human Capital, and Finance.
b) Management Information Systems.
c) Infrastructure and Architecture.

- **Maintenance, Plant and Equipment**

Maintenance Plant and Equipment (MPE) develops and implements asset management strategies and principles in line with world benchmarks to ensure optimum cost effectiveness in availability, reliability and utilisation of assets during their life cycle.

- **Corporate Quality**

The role of the Corporate Quality support function is to establish / support a quality culture in Transnet Engineering and to develop and maintain processes and systems that support quality in the operational businesses in Transnet Engineering. Corporate Quality's mandate is to align quality policy with Transnet Engineering's strategic objectives as an enabler of organisational direction and success. Corporate Quality supports Transnet Engineering operational and support businesses to ensure they retain their ISO certification. This includes day to day support in a consulting role, as well as engaging an external service provider that conducts ISO 9001:2008 audits to certify / re-certify said businesses.

Corporate Quality develops, implements and documents processes to ensure quality is embedded across business functions in support of the production value chain – from the sourcing of raw material / components to the managing of customer complaints received for non-conforming final products delivered. Corporate Quality also plays a role in supplier and enterprise development through audits and technical investigations.

2.10 CONCLUSION

The purpose of this Chapter was to give the reader an overview of Transnet Engineering, mainly the Koedoespoort Centre where the study is based, and to indicate its functional areas, roles and responsibility. Transnet Engineering Koedoespoort operational businesses are grouped into various functional areas (see fig 2.3), and within these functional areas there are various teams which are responsible for producing the final product which must meet customer requirements.

Supervisors manage the teams on the production floor, Supervisors report to Production Managers, Logistics managers manage a team of production and material planners to ensure material is available for production, and the Quality manager is responsible for managing a team of Quality controllers who ensure that a good quality product is delivered to the customer. The Customer service manager is responsible for marketing and sales, and customer relationship management.

The environment within which the study will take place has been clearly described in an effort to make it easy for the reader to understand the parameters under which the study is conducted. The next chapter presents a literature review study to identify the factors that are contributing towards improving group and team effectiveness.

CHAPTER 3

A LITERATURE REVIEW OF FACTORS TO IMPROVE TEAM EFFECTIVENESS

3.1 INTRODUCTION

In this chapter, the theories of the factors that are most critical to improving group and team effectiveness are investigated from the literature of various authors and publications. The chapter begins with an overview of group/team theory to determine what is a group or team.

After the theoretical overview of groups and teams, an examination of the factors to improving group and team effectiveness is investigated using literature. This Chapter ends with a summary list of the factors that will be investigated using a questionnaire.

3.2 THEORETICAL OVERVIEW OF GROUP AND TEAMS

Nel, Werner, Poisat, Sono, Du Plessis, Ngalo, van Hoek and Botha (2011:335) state that a group consists of people who come together to share information and assist each other to perform. Group performance is the summation of the individual inputs from group members. They further state that a team refers to two or more individuals with complementary skills interacting with each other according to a specific strategy to achieve specific goals, and who share a common identity and have common norms. Nel et al (2011:335), citing Robbins and Judge (2009:357), state that a team exerts positive energy and synchronises efforts towards the attainment of a common goal, achieving a level of performance that is greater than the sum of the individual inputs.

Thomas, Ravlin and Barry (2000:11) state that introducing self-managing teams is a complex affair which involves changing work methods, compensation systems, levels of employee involvement and the role of the first level supervisor.

3.2.1 Functions of groups and teams

Before discussing the factors to improving group and team effectiveness let us look at the functions of groups and teams in an organisation. Bateman and Snell (1999:471) state that groups are formed because they are useful, and in organisations, groups serve numerous functions. Some of the functions benefit the organisation directly, others benefit the group members.

Table 3.1 Functions served by groups in organisations

For the organisation	For the individual
1. Accomplish tasks that could not be done by individuals working alone.	1. Aid in learning about the organisation and its environment.
2. Bring multiple skills and talents to bear on complex tasks.	2. Aid in learning about oneself.
3. Provide a vehicle for decision making that permits multiple and conflicting views to be aired and considered	3. Provide help in gaining new skills.
4. Provide an efficient means for organisational control of individual behaviour.	4. Obtain valued results that are not accessible through individual initiative.
5. Facilitate changes in organisational policies or procedures.	5. Directly satisfy important personal needs, especially needs for social acceptance.

Source: Bateman and Snell (1999:471)

3.3 A MODEL FOR WORK TEAM EFFECTIVENESS

Harvey, Millett and Smith (1998), citing Nicholas (1994), state that an effective team knows what it must do and commits to doing it, members are never confused about why the team exists or what their role is.

Figure 3.1 A model for team effectiveness

Organizational Context	Types of team	Team Processes	Team Effectiveness
• Vision and Mission • Values • Strategy • Formal structure • Organization culture • Technology • HR Processes	• Formal/functional • Problem solving • Cross-functional • Self-managed • Virtual • Informal **Team Structure** • Leadership • Roles • Norms • Composition • Size • Status	• Group development • Communication • Conflict	• Quality • Customer satisfaction • Personal satisfaction • Knowledge management

Source: Nel et al (2011:337)

Teams do not operate in isolation, but within the broader external and internal organisational environment. Fig. 3.1 above presents a model for work team effectiveness. Cohen and Bailey (1997) also identified factors for improving team effectiveness to be operating at organisational, individual, group (team) and business unit level.

Below are factors affecting team effectiveness as indicated on Fig. 3.1:

3.3.1 Organisational context

Nel et al (2011:336) state that teams function within an organisational context, which can either enhance or limit effective team functioning. The organisational vision, mission, values and strategy provide direction for team functioning and ideally all team goals, processes and behaviours should be aligned with the strategic direction of the organisation. Organisations that utilise teams normally have flatter structures as decision making is decentralised and distributed.

Nel et al (2011) further state that a constructive organisational culture that endorses values of collaboration, team work, knowledge sharing and excellence, as well as

supportive technology and HR processes (including reward processes), will create a more fertile environment for effective group functioning.

3.3.2 Team Context

Under team context factors that affect team effectiveness, focus is on:

3.3.2.1 Types of Teams

Nel et al (2011:336) mention that managers determine what type of team is required to attain organisational goals, and who are responsible for the implementation of teams. Informal teams can also develop spontaneously as members of the organisation informally collaborate to achieve goals and satisfy social and personal needs. As managers need to understand the type of team required to achieve organisational goals, it is also crucial to understand the dynamics that come with each team type.

Nel et al (2011:337) describes the type of work teams as:

Problem solving teams

Problem-solving teams, often called quality circles, comprise employees who meet on a weekly basis to discuss ways of improving the quality of products, efficiency of work methods, and work environment. The Supervisor usually leads these groups. Members identify problems, brainstorm alternative solutions, and present their suggestions to management. These groups work best in organisations where quality, engagement, empowerment, open sharing, and a team spirit are encouraged as part of the organisational mission, objectives and culture.

Cross-functional teams

Cross-functional teams are very popular in the motor manufacturing industry, where project teams comprise representatives from a cross-section of the organisation: manufacturing, engineering, marketing, research and development, and traders. The

cross-functional team will have a specific task to accomplish, such as to develop a new product. These teams allow people from diverse areas to analyse problems, exchange information, develop creative ideas, solve problems, and coordinate complex projects. It is a challenging task to build trust and cohesion in such a complex team. The group leaders should have a clear understanding of group processes and provide a sense of direction for the group.

Self-managed work teams

Self-managed work teams are formed to take accountability for a complete work process that was previously perceived to consist of separate jobs, often performed by separate departments. The team manages an entire mini-business, where the process starts from buying raw materials from an external vendor, and ends with delivering the finished product or service to an external customer. The team enjoys autonomy over how it meets the customer's demand. The team is accountable for cost, quality, and rate of production.

Lawler (1996:167) and Potgieter (2007:133), as cited by Nel et al (2011:338), highlight a few crucial points for a team-based system to be successful:

- The core work done by the team must be interdependent and relatively complex.
- The team must share a common vision and goals that are aligned to organisational goals.
- The team must be able to accomplish tasks and solve problems without supervision.
- Team members must be multi-skilled.
- A high level of trust must exist in the group.
- The team must have autonomy to make important decisions about work, people, and the internal allocation of tasks through a process of consensus.
- The team must decide on recruitment and disciplinary issues.
- Team leaders must understand group processes and provide direction.
- Human Resources Management reward and information systems need to provide the right kind of training, feedback, and recognition for teams.

- The location of the members of a team, and its size are crucial to its effectiveness.
- Teams must take responsibility for satisfying their customers.

Virtual teams

Global competition, information technology, and excessive travel expenses have given rise to virtual teams that transcend distance, time zones, and organisational boundaries. Virtual team members are generally in different locations and different time zones. Virtual team members communicate mainly through electronic media. The success of the virtual team depends a lot on the structure and management of the team.

Earnhardt (2009) defines virtual teams as "individuals collaborating in geographically dispersed work teams who may reside in different time zones and countries". These teams have become a vital option for organisations that need to work in multiple locations at once and draw on vast global expertise.

Multicultural teams

International business strategies necessitate the establishment of multicultural teams. These teams can be very challenging, as language and behavioural differences could compromise excellence. Typical problems encountered in diverse teams are increased ambiguity, complexity, confusion, mistrust, miscommunication, difficulty in reaching agreements, difficulty in reconciling diverse perspectives, difficulty in reaching consensus, and decreased cohesion. Building an effective multicultural team often starts with diversity training. Group members should acknowledge cultural differences, and minimise stereotyping.

Effectiveness of a multicultural team can be increased by:

- A clear sense of common purpose
- A common language or procedure
- Identifying and building on successes

- Openly addressing issues flowing from cultural differences
- Understanding one's own cultural programming and its impact on individual and group behaviour
- Having fun

Ulloa and Stephanie (2004), citing Simon (2001), mention that clearly defined goals are quantifiable and commonly agreed upon statements that define the actions to be taken by the team. Team members need to know and understand what has to be done by the team. The goal has to be tied to specific objectives that lead the team to achieve its goal. Also, team members should be committed to the goal and should participate in its development.

Therefore, the team can be multicultural, but as long as it has a common goal and vision shared by all team members, the team stands a good chance of being successful.

Researchers, such as Hackman (1990) and Tannenbaum, Beard and Salas

(1992), as cited by Borrill, Carletta, Carter, Dawson, Garrod, Rees, Richards, Shapiro and West (1999), in the National Health Service (NHS) report have also asserted the above to be among the contextual factors that influence team effectiveness.

3.3.2.2 Team structure

Nel et al (2011:336) state that group structure is created through leadership, norms and roles and provides the framework within which teams function to ensure that the group does not disintegrate into chaos. They further state that the composition of the team is very important as factors such as diversity, complementary skills and attitudes can have a tremendous impact on the success of the team.

Nel et al (2011:343) mention that there are various factors under team structure as shown on fig. 3.1 which affect group effectiveness, such as:

3.3.2.3 Group leadership

Nel et al (2011:343) state that a leader is someone who has the ability to inspire group members to achieve group goals voluntarily and enthusiastically. Leadership influence depends on the type of power that a leader can exercise over followers. The most important point here is that each group has a leader at any given time, and that the person who is formally appointed is not necessarily the leader. Effective leaders have a concern for the task as well as for the members of the group. Task behaviours expected from leaders include planning, decision making, organizing, and monitoring. To function successfully, leaders need technical expertise, good communication skills, and a willingness to be accountable for the group.

According to Construction Excellence (2004), leadership is critical to teamwork. The team leader is the person responsible for ensuring that members work effectively together to achieve their goal or objective and must facilitate the co-operation necessary for the team to perform well. The leader must also ensure that the team has the resources and information necessary to complete its task.

3.3.2.4 Roles

Nel et al (2011:343) state that, in effective groups, the members play different roles that help the group function optimally and achieve its goals. They further state that a role refers to a set of expected behaviour patterns associated with someone in a given position in a group. Each role has associated attitudes and behaviours that create role identity, i.e. a machine operator who has been promoted to a supervisory role will be expected to have a change in behaviour and attitude, most of the time the promoted machine operator will adopt a pro-management attitude and orientation.

3.3.2.5 Group norms

According to Nel et al (2011:344), over time, the interaction within the group leads to the development of group norms. A norm is a generally accepted standard of behaviour that each member of the group is supposed to maintain. The strongest norms apply to the forms of behaviour that the group members regard as the most important. Robbins and Judge (2009:326), as quoted by Nel et al (2011:344), say

that "Norms can be defined as acceptable standards of behaviour within the group that are shared by the group's members." A norm that is regarded as important by one group may be unimportant to another.

3.3.2.6 Status

According to Nel et al (2011:346), status refers to the relative social position a person has in comparison to others in the group. Status is important because it is a motivational factor and also influences the behaviour of those who experience disparity between what they believe their status is, and what they believe others perceive their status to be. The authors further state that status differences can either facilitate or hinder group interaction. They facilitate interaction when members perceive status differences as equitable, that is, they believe those with higher status rightfully deserve more status, therefore, in this case, lower status members will be more willing to follow directives from high status members.

3.3.2.7 Group size

Nel et al (2011:346) state that the size of the team influences a team's overall performance, however, it also depends on the purpose of the group. Large groups make it more difficult for team members to interact with all the team members. Large groups (12 or more members) are generally preferred when a group has to produce divergent ideas or alternatives. A larger group offers greater combined experience and ideas. Individual efforts working in a team must be identifiable and measurable; this will prevent social loafing, where individuals can lessen their input knowing or hoping that others' efforts will cover for them. Bergh and Theron (2009:198), cited by Nel et al (2011:346), mention that research has shown that groups of five to seven members are preferable.

Team size can affect team functioning and create problems such as complicating communication and coordination. It is suggested that team size should be limited to a minimum number in accordance with the team's goals. If a team is too large, the quality of interaction between its members decreases and this impairs team

effectiveness which results in high costs and process losses Duygulu and Ciraklar (2008), citing Diskul (2000). .

A group small enough avoids domination, the formation of cliques and inhibited participation, but it is large enough to allow for diverse input.

3.3.2.8 Group composition

Nel et al (2011:347) state that group composition relates to the extent to which group members are alike. A homogeneous group shares a number of similar characteristics such as race, gender, socio-economic background, education, age, work experience or cultural orientation. A heterogeneous group on the other hand, is composed of individuals who have few or no similar characteristics. In South Africa, work groups are more likely to be heterogeneous than homogeneous.

There is considerable agreement that heterogeneity of skills in teams performing complex tasks is good for effectiveness, heterogeneity of skills and knowledge automatically implies that each team member will bring a different knowledge perspective to the problem, a necessary ingredient for creative solutions (Sternberg & Lubart, 1990; West, 1997, as cited by Borrill, Carletta, Carter, Dawson, Garrod, Rees, Richards, Shapiro and West, 1999) in the NHS report.

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The above team context factors, if identified and managed correctly, will provide the following benefits.

Swanepoel, Erasmus and Schenk (2008:202) state that the benefits of an effective team-based approach, if correctly used, may provide the organisation and the individuals with benefits such as:

- Reduced duplication of effort
- Reduced costs
- Increased cooperation
- Enhanced innovation
- Better, wiser and more complete decisions
- More motivated colleagues
- Improved product and service quality
- Higher standards of performance

- More speed in terms of delivery

- Increased productivity and profits

- Added flexibility to allow easier adaptation to changing circumstances

- Increased commitment to implementation

- Reduced destructive conflict, and

- Improved interpersonal and inter-unit relations and communication.

According to Construction Excellence (2004), the following are benefits of successful teams:

- Improvements in participants' confidence, attitudes, motivation and personal satisfaction

- Greater clarity in expressing ideas through group discussion

- Better understanding by individuals of the nature of their contribution – and of the needs of other team members

- More efficient use of resources – especially time

- Greater optimism – by focusing on positive outcomes and putting less weight on problems

- A wider range of ideas rather than individuals working in isolation

- More effective responses to changes – improved trust and communication help a team to adapt to new circumstances.

3.3.3 Team processes

Nel et al (2011:336) state that team processes such as group development, communication, collaboration, information sharing, problem identification/ solving and healthy conflict create a high performing team. Team processes are enablers of team effectiveness, this goes together with the management support that must be given to teams to make them effective.

As shown in figure 3.1, team processes have the following elements which affect team effectiveness:

3.3.3.1 Communication

Nel et al (2011:348) say that the only way through which we can establish and maintain relationships with other people is through communication. The more easily people in a group communicate with each other, the more cohesion will be experienced. The authors further state that cohesiveness refers to the extent to which group members are attracted to each other and vote to stay in the group. Should it be noticed that communication is a problem in a group, it should not be left unattended, but addressed through training.

According to Construction Excellence (2004), good communication between members is essential if a team is to collaborate successfully and make the best use of its pooled knowledge. Team identity and group cohesiveness benefit from good communication. Conversely, lack of communication – where members work too much on their own and lose touch with how their work relates to others – can reduce team effectiveness.

3.3.3.2 Conflict

Nel et al (2011:349) state that in all groups some conflict is inevitable. Conflict can be defined as the process during which individuals feel that other individuals have frustrated their ability to achieve their goals. Conflict in groups can be either positive or negative, depending on its consequences. Positive conflict is an energising force that spurs members to better alternatives and higher goals. It stimulates creative thinking and innovation.

Members agree on a goal to achieve, but disagree on how to achieve it. Nel et al, further state that, in groups where there is no or very little conflict owing to high levels of cohesion and conformity, performance tends to be low because the status quo is seldom challenged.

Negative conflict on the other hand, occurs when goal attainment is frustrated because energy is spent on highlighting or resolving interpersonal differences rather than on goal attainment. This can lead to chaos and a negative attitude that hinders constructive problem solving.

3.3.3.3 Group development

Nel et al (2011:340) go on to say that knowledge about the development of groups is very useful to assist groups in progressing towards goal attainment. Work groups are effective only if a spirit of cooperation and combined action towards achieving goals exists. They further state that in a dynamic working environment where quick action is required, groups cannot afford to waste time on conflict and other unproductive behaviour.

Nel et al (2011:340) maintain that there are five stages of group development in order of sequence, namely:

- **Forming:** This stage is characterised by uncertainty, members do not know what is expected of them, and they are often scared that they may not be accepted by other group members, they are also unsure of the structure, leadership, and roles in the group. Groups progress successfully through this stage once members perceive themselves as part of the group.

- **Storming:** This stage is characterised by interpersonal conflict, in the form of fighting or physical or emotional withdrawal. Groups progress successfully through this stage when a leader has been chosen and accepted, members become aware of and accept their roles, and a relatively clear hierarchy exists.

- **Norming:** This stage is marked by cooperation and collaboration. During this stage members become aware of what behaviour is acceptable or not. Members share information openly and are willing to listen to others. Close relationships develop and cohesiveness increases. The group progresses successfully through this stage when the group structure is relatively established, behavioural expectations are clear, and the group is ready to function fully.

- **Performing:** This stage is characterised by full participation of all group members. Energy and efforts are spent on the task at hand. In some groups performance is maintained at a constant level, while in other groups, through the process of learning and development, higher levels of effectiveness and creativity

are reached continuously. The success of this stage is marked by goal attainment.

- **Adjourning:** this stage marks the end of the group's existence. Members look back at what they have achieved and assess their experiences in the group. Emotions vary from satisfaction with achievements to a feeling of loss of friendship.

Not properly following these stages of team development can have a negative impact on team effectiveness.

Additional to the team factors mentioned above, Korn/Ferry Institute (2009) identified the five internal team factors to include:
- Thrust – a common purpose about what needs to be accomplished or team goal(s)
- Trust – in each other as teammates
- Talent – the collective skills of the team members to get the job done
- Teaming Skills – operating effectively and efficiently as a team
- Task Skills – executing successfully or getting the job done

The two external team factors are:
- Team-Leader Fit – the degree to which the team leader satisfies the needs of the team members
- Team Support from the Organisation – the extent to which the leadership of the organisation enables the team to perform

3.3.4 Team effectiveness

Nel et al (2011:336) state that team effectiveness can be measured in terms of quality outputs, customer satisfaction, personal satisfaction and the ability of teams to continuously learn and adapt to new demands (knowledge management). One of the cornerstones of Total Quality Management (TQM) is teamwork. Team work has been introduced in many organisations globally to increase performance levels, and employee and customer satisfaction. However, these goals can be achieved only if attention is first focused on the internal functioning of groups and teams.

Quality within the team must first be achieved before quality in the organisation can be achieved.

3.3.4.1 Characteristics of successful work teams

According to Nel et al (2011:337) the following characteristics describe a high performing work team:

- The group has a clear vision and goal, which are internalised by each member.
- The group consists of a diverse group of individuals who, owing to their unique characteristics, make unique contributions to the group's success.
- They are led by high performance leaders and have members who act as leaders by embracing responsibility, exerting influence to make things happen and hold each other accountable.
- Even though the group might have a formal leader, leadership shifts from member to member depending on the task at hand.
- Disagreement is considered as constructive, and members are willing to consider all ideas with an open mind.
- Interpersonal relations are relaxed, with ample open communication and mutual support.
- Group members identify strongly with the group, and feel proud of the way the group functions as well as its achievements.
- Change is not feared, but initiated.
- Networking with outside individuals and groups is used to achieve excellence and to build credibility.
- Group members evaluate their own development and performance, and seek opportunities for continuous learning.

According to Mitchell, Wynia, Golden, McNellis, Okun, Webb, Rohrbach, and Von Kohorn (2012) the following are five personal values which characterise the most effective members of high-functioning teams in health care.

Honesty: Team members put a high value on effective communication within the team, including transparency about aims, decisions, uncertainty, and mistakes.

Honesty is critical to continued improvement and for maintaining the mutual trust necessary for a high-functioning team.

Discipline: Team members carry out their roles and responsibilities with discipline, even when it seems inconvenient. At the same time, team members are disciplined in seeking out and sharing new information to improve individual and team functioning, even when doing so may be uncomfortable. Such discipline allows teams to develop and stick to their standards and protocols even as they seek ways to improve.

Creativity: Team members are excited by the possibility of tackling new or emerging problems creatively. They see errors and unanticipated bad outcomes as potential opportunities to learn and improve.

Humility: Team members recognize differences in training but do not believe that one type of training or perspective is uniformly superior to the training of others. They also recognize that they are human and will make mistakes. Hence, a key value of working in a team is that fellow team members can rely on each other to help recognise and avert failures, regardless of where they are in the hierarchy.

Curiosity: Team members are dedicated to reflecting upon the lessons learned in the course of their daily activities and using those insights for continuous improvement of their own work and the functioning of the team.

Other factors stated by Mitchell et al (2012) include shared goals, clear roles, mutual trust, effective communication and measurable processes and outcomes.

From the information above it is evident that many factors influence the effectiveness of teams, however, these factors should be identified and managed continuously. When teams are well managed, they contribute to greater employee commitment and organisational success.

The above model, in fig. 2.1 taken from Nel et al (2011:337), specifies that teams function within an organisation context, which can either enhance or limit effective team functioning. The model presents factors which are critical for team effectiveness.

Nel et al (2011) further identified these factors for an effective team:

- Commitment to the purpose of the system is never perfunctory and motivation is always high.
- Team work is focused on the task. Distinctions between task and process function dissolve. Members develop behaviours that enable them to do what they must do.
- Leadership is strong, clear and never ambivalent. Leaders are reliable and predictable, regardless of style.
- Members have a consciousness that " we are different."
- Goals are clear and specific to give the team direction, and meaningful and acceptable performance measures are in place to measure attainment of goal.
- Teams are provided with a certain level of authority and empowerment with boundaries so as to improve the team's efficiency and effectiveness.
- Team decision making authority comes with accountability and responsibility; however, teams should not be hammered if things go wrong but should be advised on new approaches and methods.
- Training and development are enabling factors that allow team members and leaders to take on new responsibilities. Where team members possess inadequate work skills and knowledge, teams are less likely to succeed.
- Teams operate effectively when they have access to resources. These resources can include money, time, equipment, technology, people and information.
- Middle and upper management support and commitment is necessary for teams to operate effectively. A nurturing environment with a collaborative climate provides the support and encouragement that teams need for job performance.
- A team-based reward system should be implemented to reward successful team performance.

3.3.4.2 Threats to team effectiveness

Kreitner et al (2002:330), state that the root of the problem to why teams fail is because organisations see teams as an end rather than the means, often setting them up where they are not required. There are situations where teams are required,

but managers who do not know how to handle teams can affect their effectiveness. When team work is implemented without proper thought, it can be a nightmare in the organisation.

Here are some of the points that affect team effectiveness:

- **Hidden agendas –** Some team members might work for the benefit of their own careers rather than for the entire team's success.
- **Lack of understanding –** Misconceptions about why a team is formed.
- **Lack of leadership –** the team leader might not have the necessary skills and competencies to lead a team.
- **Wrong mix of team members –** There are 'creative types' who can come with brilliant ideas but cannot implement. There are also 'doers' who do not prefer discussion of ideas but prefer rather to be given something to do. A team that is unbalanced can develop good ideas but fail to implement them, or alternatively it can discover that there are no ideas to implement.
- **Unhealthy team environment –** if decisions are left for the last moment or at the eleventh hour, it can place a team under tremendous pressure, and long hours might be worked to meet deadlines. A nurturing environment with a collaborative climate provides the support and encouragement that teams need for job performance, according to Margulies and Kleiner (1995).
- **Lack of management support -** middle and upper management support and commitment is necessary for teams to operate effectively, according to Margulies and Kleiner (1995). Teams are more effective if management provides the necessary support. Management support for teams is positively related to the task performance of teams, member satisfaction with the team, team cohesiveness, commitment to the team, and team spirit and trust. An organisational culture that clearly supports teams fosters more effective teams, as mentioned by Thomas, Ravlin and Barry (2000).
- **Lack of resources -** For teams to operate effectively, they must have access to resources. These resources can include money, time, equipment, technology, people and information (Robbins 1998).

3.4 WORK TEAM EFFECTIVENESS: AN ECOLOGICAL MODEL

Kreitner, Kinicki and Buelens (2002:322) state that successful organisations are good at building teams and exploiting teamwork. People need to be able to work in teams and their efforts should be directed at making the team successful. Further, successful organisations embrace diversity, respect for individuals, and make decision making more creative and innovative. Such organisations also empower their employees, and decision making is moved to lower levels of the organisation, lower levels of work groups and performance teams.

Figure 3.2 an Ecological Model of Work Team Effectiveness
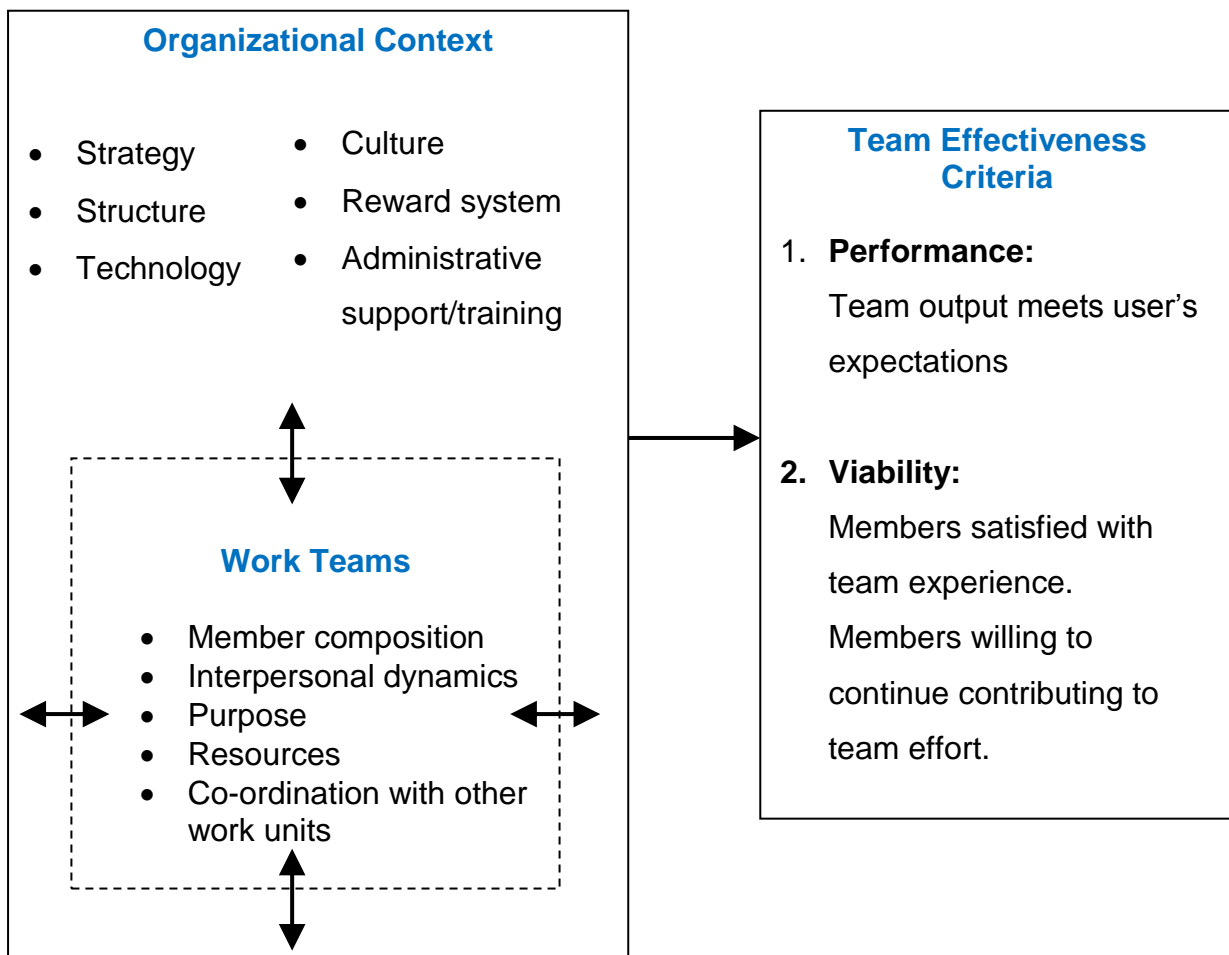
Source: Kreitner, Kinicki and Buelens (2002:328)

According to Kreitner, et al (2002:329), work teams have a much greater chance of being effective if they are nurtured and helped by the organisation. This is the reason

we notice in figure 3.2 that the work team operates inside the organisational context, which supports the statement that teams need to be supported by the organisation in order to be effective.

In the model above, the team's purpose needs to be aligned to the organisation's strategy, the organisational culture needs to support team work, and the values of the team must be aligned to the organisation's values and beliefs. Team factors and organisational factors need to be aligned to breed team work effectiveness and success, and team effectiveness needs to be compensated by a good organisation's reward and recognition system. Team success needs to be celebrated. Teams need to be provided with technological systems that will enhance effectiveness and the attainment of goals. Necessary training must be provided to teams, and that training must enhance the skill, knowledge, experience and competence of individuals within the group/team.

Additional to the factors listed in the model, Holtzman and Anderberg (2011) state that, "for a team to be successful, certain core ingredients are required. These include competence, clear performance metrics, commitment to a common goal, aligned efforts, contribution from every member, and a supportive environment. A team that has all the above-mentioned characteristics has a good chance of becoming successful. If the team, in addition to the essential elements, has members with diverse sets of backgrounds and skill sets an even higher level of performance can be achieved and the likelihood of producing breakthrough innovations increases".

3.4.1 Effective teamwork through cooperation, trust and cohesiveness

In addition to the factors indicated in figure 3.2, these additional work team context factors are critical for the improvement of team effectiveness. Kreitner, et al. (2002:336), lists these factors as:

3.4.1.1 Cooperation

Individuals are said to be cooperating when their efforts are systematically integrated to achieve a collective objective. Greater integration leads to a greater degree of co-operation. In a team setup individualism must be discouraged and competition amongst team members must be discouraged. The mentality that must be instilled is that of one vision and one goal attainment through participative co-operation.

Where there is co-operation there is a complementary of skills, and the team members understand that the sum of the team members' skills is greater than the skill of an individual.

Kreitner, et al. (2002:337), further states that:

- Co-operation is superior to competition in promoting achievement and productivity.
- Co-operation is superior to individualistic efforts in promoting achievement and productivity.
- Co-operation without intergroup competition promotes higher achievement and productivity than co-operation with intergroup competition.

Co-operation can be encouraged by developing and implementing reward systems that reinforce teamwork as well as individual achievement.

3.4.1.2 Trust

According to Kreitner, et al. (2002:338), trust is a reciprocal faith in other's intentions and behaviours. Reciprocal means 'give and take' i.e. when management trust team members, team members will also trust management. It is important for both parties to show willingness to trust because this is another factor to improving team effectiveness. Team members must also behave in a manner which should earn trust, a disorganised team will not give management trust. Management must also stick to promises, because failing to meet team member expectations might destroy trust, and this will affect the team's productivity and effectiveness.

Kreitner et al. (2002:339), gives the following guidelines for building and maintaining trust:

- **Communication –** team members and employees must be informed about policies, organisational changes, strategies, new developments that affect employees, decisions and feedback must be provided about the organisation's performance.
- **Support –** availability and approachability of senior management is critical to building trust. Team members might need help, coaching, advice, or opinions about ideas they want to implement.
- **Respect –** give team members some level of authority to make decisions, show that you trust their judgement. In return the team members will give trust back.
- **Fairness –** give credit and recognition where it is due, if a team does well recognise those who deserve it. Team performance appraisals must be fair and objective.
- **Predictability –** Keep both expressed and implied promises. Be consistent about your standards and maintain fairness in daily affairs.
- **Competence –** managers must keep on learning to develop their level of competence. Managers must display a good business sense, technical ability and professionalism.

3.4.1.3 Cohesiveness

According to Kreitner, et al. (2002:339), cohesiveness is a process whereby a sense of 'we-ness' (togetherness) emerges to transcend individual differences and motives. Members of a cohesive group stick together. They are reluctant to leave the group because they enjoy each other's company, and they need each other to accomplish a common goal.

Kreitner et al. (2002:339), further state that there are two types of group cohesiveness:

- **Socio-economical cohesiveness –** is a sense of togetherness that develops when individuals get a sense of emotional satisfaction from group participation.
- **Instrumental cohesiveness –** is a sense of togetherness that team members feel from knowing that they need each other to achieve team goals. There is that sense of mutual dependency amongst group members to attain a certain goal.

3.4.2 Additional factors for improving team effectiveness

Kreitner et al (2002:329), lists these factors for an effective team:

- **Clear purpose –** the vision, mission and goal of the team must be clearly described and be acceptable to everyone.
- **Informality –** The climate is informal, there is a relaxed and comfortable environment. No tension or red tape.
- **Participation –** Members are encouraged to participate in discussions.
- **Listening –** Members are encouraged to listen to each other's opinions, ideas and feedback. Questioning and comments are encouraged.
- **Civilised disagreements –** Disagreement is allowed, no grudges for difference of opinions. No signs of avoiding, or suppressing difference of opinions.
- **Consensus decisions -** Unanimous agreement through open discussion of team member's ideas, avoidance of voting and compromising.
- **Open communication –** Team members are encouraged to communicate freely, no favouritism, discrimination or prejudice of other ideas.
- **Clear roles and work assignments –** Expectations from each team member are clear, and the role they will play. Work is distributed fairly amongst team members.
- **Shared leadership –** Although there is a formally appointed leader, leadership roles shift from time to time depending on the circumstances, the needs of the group, and the skills of the members.
- **External relations –** The team networks and develops key outside relationships, mobilising resources and building credibility with other players in other parts of the organisation.

- **Style diversity –** the team has a combination of different personalities, and members who emphasize attention to detail, task, goal setting, focus on process.

- **Self-assessment –** Periodically the team stops to reflect and examine how it is performing, and looks at what may be affecting its effectiveness.

According to Assessment Plus Inc. (2013), the Linkage Team Effective Assessment report identified the following factors for highly effective teams. These had previously been identified by Kozlowski and Iglen (2006).

- **Capabilities and infrastructure**

  This factor addresses the question: **"Are we set up for success?** Highly effective teams are supported and have decision authority as well as feedback methods to understand their efforts. Together, the members have the skills, understanding and leadership needed to be successful.

- **Goals and purpose**

  This factor addresses the question: "**Are we focused**?" Highly effective teams are characterized by a deep sense of shared purpose, a clear sense of priority, a mission that demands interdependence, and a clear understanding of each member's accountabilities.

- **Roles and individual expectations**

  This factor addresses the question: "**Do team members have clear expectations and are we fulfilling them?**" Highly effective teams have developed a set of "rules for engagement" which guide individual behaviour and performance on the team. Some team rules can be idiosyncratic to particular teams. However, all teams need to align around some rules that govern how to influence; how members relate to one another, how diversity is leveraged, and how much experimentation is allowed.

- **Interactions and team processes**

  This factor addresses the question: "**Are we aligned**?" Highly effective teams have developed sensible methods and practices for getting the work done. Work and team interactions are coordinated though effective processes conversations, decision making, and conflict. In total, these practices allow the team to stay "in sync".

- **Learning and results**.

  This factor addresses the question: "**Are we thriving**?" Highly effective teams get results and become better at what they do. This leads to further successes in a virtuous cycle. The team receives feedback, adapts to the environment, gets results, and is rewarded.

Managers need to take special attention to focus on the above factors to improving team effectiveness. Focusing on these factors will help organisations improve results, service and output. Teams operate within the organisation and it is critical to look at the organisational environment to determine whether it supports or hinders team effectiveness.

If teams are to be effective, both management and team members must make a concerted effort to think and do things differently. The factors indicated in figure 3.2 for improving effectiveness and attainment of goals must be taken seriously, and steps or action must be taken to avoid team failure.

3.4.3 Factors to consider in analysing poor performance

According to Nel et al. (2011:407), performance management is a process of creating a work environment or setting in which people are enabled to perform to the best of their abilities for the achievement of shared goals.
As mentioned in chapter one, there is a close correlation between effectiveness, productivity and performance.

Performance management process entails:

- Clarification and communication of organisational strategic objectives
- The alignment of individual and group goals with the organisational objectives
- The monitoring and measurement of individual and group performance
- The early identification and reporting of deviations
- The development of action plans to correct the deviations
- The coaching and monitoring of individuals and groups

- The continuous review of individual and group performance, and the re-evaluation of organisational processes and resources.

Figure 3.3 Factors to consider in analyzing poor performance

Input

Does the employee recognize what he or she is supposed to do?

Are the job flows and procedures logical?

Do employees have the resources (tools, equipment, technology, time) needed for successful performance?

Are other job demands interfering with good performance in this area?

Employee Characteristics

Does the employee have the necessary skills and knowledge?

Does the employee know why the desired level is important?

Is the employee mentally, physically, and emotionally able to perform at the expected level?

Feedback

Has the employee been given information about his or her performance?

Is performance feedback relevant, timely, accurate, specific, and understandable?

Performance Standard/Goals

Do performance standards exist?

Does the employee know the desired level of expected performance?

Does the employee believe she or he can reach the performance standards?

Consequences

Are consequences (rewards, incentives) aligned with good performance?

Are the consequences of performance valuable to the employee?

Are performance consequences given in a timely manner?

Do work group or team norms encourage employee not to meet performance?

Source: Nel, et al (2011)

It can be noted from this diagram that there is a very close correlation between effectiveness and performance, both focus on successful outcomes. If these factors can be looked at within the context of groups and teams, the effectiveness of individuals within the group can be improved, and this will result in a more improved output, goal or objective. (Nel et al 2011:414)

3.5 MORE THEORY ON WORK TEAMS AND EFFECTIVENESS

The following factors, which have been identified through the literature review, are also critical for team effectiveness. These are the factors relating to support management must provide in addition to the team process factors discussed above in section 3.3.3.

3.5.1 Training and development

According to Noe, Hollenbeck, Gerhart and Wright (2012:22), a learning organisation embraces a culture of lifelong learning, enabling all employees to continually acquire and share knowledge. Employees need to have the financial, time and content resources (courses, experiences, development opportunities) available to increase their knowledge. Managers must take an active role in identifying training needs and help to ensure that employees use training in their work. Employees should be encouraged to identify problems, make decisions, continuously experiment, and improve. If management can also focus more on training and development of team members within a team, the effectiveness of the group will be enhanced.

3.5.2 Employee engagement

Noe et al (2012:23) mentions that employee engagement refers to the degree to which employees are fully involved in their work and the strength of their commitment to their job and the company. Employees who are engaged in their work and committed to the company work hard to give companies a competitive advantage including higher productivity, better customer service, and lower turnover. In successful organisations, teams are set up to increase the level of employee

engagement, the level of trust between employer and employee increases, and if trust is improved, the team member will become effective in the group.

3.5.3 Talent Management

Noe et al (2012:25), suggest that talent management refers to the systematic planned strategic effort by a company to use bundles of human resource management practices, including acquiring and assessing employees, learning and development, performance management, and compensation to attract, retain, develop, and motivate highly skilled employees and managers.

Management must focus on developing employee skills and come up with strategies to enhance those skills, abilities, knowledge and competence of employees. If this is done, the team effectiveness of the group will be increased.

3.5.4 Recognition, Reward and Celebration

To make the teams effective, management must develop reward strategies and systems that will give recognition and reward to the best performing individuals within the group. Nel et al (2011:237), state that a reward strategy is a long term plan designed by an organisation that aims to attract the best talent to it whilst ensuring that its present employees are operating at optimal levels of job satisfaction so that its strategic goals are achieved.

The achievements by individuals or teams must be celebrated. If team success is celebrated, the more the team will be effective and increase performance, and the more success the organisation will achieve.

Holtzman and Anderberg (2011) state that, "Commitment is also enhanced through rewards. If people understand that promotions, bonuses, or pay increases are associated with their success in achieving the team goal, their commitment will increase. If the team members understand that the boss will get the credit and the vast majority of the monetary rewards, their commitment will prove ephemeral".

3.5.5 Diversity

Noe et al (2012:39), state that to successfully manage a diverse workforce, managers must develop a new set of skills, including:

- Communicating effectively with employees from a wide variety of cultural backgrounds.
- Coaching and developing employees of different ages, educational backgrounds, ethnicity, physical ability, and race.
- Providing performance feedback that is based on objective outcomes rather than values and stereotypes that work against women, minorities, and handicapped persons by prejudging these people's abilities and talents.
- Creating a work environment that makes it comfortable for employees of all backgrounds to be creative and innovative.
- Recognising and responding to generational issues.

Diversity management is important for tapping all employees' creative, cultural and communication skills to provide the organisation with a competitive advantage.

3.5.6 Team building

Kreitner et al (2002:348), state that team building is a catch-all term for a whole host of techniques aimed at improving the internal functioning of work groups. Whether conducted by internal company experts or external consultants, the aim is to strive for greater co-operation, better communication and less dysfunctional conflict. Different techniques and exercises are used to improve team cohesion during team building, such as interpersonal trust exercises, conflict-handling role play sessions and interactive games.

Kreitner et al (2002:349), further state that team building allows team members to wrestle with simulated real life challenges; outcomes are then analysed by the group to determine what group processes need improvement.

Kreitner et al (2002:350), further mention that there are four purposes of team building, namely:

- To set goals and/or priorities
- To analyse or allocate the way work is performed
- To examine the way a group is working and its processes (such as norms, decision making and communication)
- To examine relationships among the people doing the work.

3.5.7 Psychological contract

According to Bateman and Snell (1999:459), a psychological contract is a set of perceptions of what the employees owe the employer, and what the employer owes them. This contract, whether it is seen as being upheld or violated, and whether both parties trust one another or not, have important implications for employee satisfaction and motivation, and the effectiveness of the organisation. According to Noe, Hollenbeck, Gerhart and Wright (2012:22), the psychological contract describes what an employee expects to contribute and what the company will provide to the employee for these contributions. A psychological contract is not written, and it has shaped both the employee's and company's expectations.

People who believe their psychological contract is stable and secure are likely to be angry and dissatisfied when business conditions and company policies change. In today's world the relationship between employer and employee is not stable, it is more accurately described as "no guarantees".
Therefore, it is critical for management to take note of this psychological contract by monitoring the behaviour of employees, and platforms where employees can share or communicate their perceptions must be developed for effective individual and group performance.

3.5.8 Skills Audit

According to Swanepoel, Erasmus and Schenk (2008:454), a skills audit is an investigation which is undertaken to determine the actual skills of the current

workforce in order to define the skills gaps and real skills requirements of the organisation.

This process is also crucial to improving team effectiveness, this skills audit can help identify skills gaps amongst team members, and from that, management can draw a plan on how to close the skills gap.

Swanepoel et al. (2008:454), state that the ultimate aim of the skills audit is to establish:

- What skills actually exist within the organisation
- How these compare with the organisational skills requirements as determined through the workforce planning and job analysis process
- What the skills development priorities are (per occupational group, levels and demographic profile)
- How the skills development priorities may best be addressed through a systematic plan and when
- What the key success indicators/measures of the workplace skills plan will be
- How to implement, track and monitor progress, and
- What to report to management and the relevant SETA.

Management must be realistic, if the objective is to make successful teams, it is important to look at the individual skills within the team. A more effective team is the one that continuously learns and develops new skills.

3.5.9 The working people – 'human beings'

Swanepoel et al (2008:19), state that working people are human beings that bring with them into the organisation all the qualities of homo sapiens. These include demographic variables such as age, gender, race, ethnic roots, cultural background and language. It goes beyond that, though, to include personal attributes related to personality and certain personality traits, personal values, perceptions, attitudes, needs, interests and preferences, and even something like emotions.

These people have certain aptitudes, abilities and competencies. They bring into the organisation certain knowledge, skills, know-how and intelligence, as well as various physical attributes such as height, weight, and so forth. Therefore, all these variables and/or factors mentioned above need to be taken into consideration because the effectiveness of teams and the success of the organisation depend on the people, and the kind of people that join the organisation.

3.6 CONCLUSION

From the literature review conducted in this chapter, it is evident that the factors to improving group and team effectiveness appear in various facets or levels of the organisation, and if these factors are well managed, they can yield better results, outcomes, customer satisfaction, and employee satisfaction. These factors identified are:

1. Organisational context factors
2. Individual context factors
3. Team context factors
4. Management support context factors

Organisational context factors:

- Vision and Mission
- Values
- Strategy
- Formal structure
- Organisation culture
- Technology
- Reward system
- Leadership support
- Training
- Resources

Individual context factors:

- Skills
- Behaviour
- Attitude
- Background
- Values
- Expectations (Psychological contract) that make the individual unhappy
- Learning, growth and development
- Individual effort

Team context factors:

- Leadership
- Roles and responsibilities
- Norms (Standard of behaviour)
- Composition
- Team Size
- Status
- Interpersonal dynamics
- Diversity
- Team purpose and objectives
- Communication
- Trust

Management support context factors:

- Talent Management
- Conflict management
- Change management
- HRM (Human Resource Management) processes
- Team/Group development
- Performance Management

The above factors lead to team effectiveness.

Team Effectiveness factors:

- Improved customer satisfaction
- Improved employee satisfaction
- Improved solutions
- Increased organisational output
- Improved Problem solving
- Co-ordination with other work units

Therefore, if this were to be put in a mathematical formula, it will be like this:

Effective organisational factors + (Effective Individual factors + Effective Team factors) + Effective Management support = Increased Organisational Effectiveness (Better results, Happy customers and Happy employees).

The next chapter explains the research methodology followed and the survey method used, and the design of the empirical survey will be described.

CHAPTER 4

RESEARCH METHODOLOGY

4.1 INTRODUCTION

In the previous chapter, factors for improving team effectiveness were identified from the information gained in the literature study. The researcher identified from the literature study that the factors for improving team effectiveness fall into these categories: organisational context, individual context, team context, management support context and team effectiveness will be realised. The literature study also indicated that management support is important for improving team effectiveness.

The literature study was used to establish the answer to the first sub-problem: What critical factors does the literature reveal will improve group and team effectiveness? Based on the literature study, a list of factors was outlined.

The empirical study will help resolve the second sub-problem: What factors do supervisors and managers at Transnet Engineering believe improve group and team effectiveness?

This chapter explains the manner in which this sub-problem will be addressed.

4.2 RESEARCH METHODOLOGY

In clarifying the basic research method used in this study, the distinction between qualitative and quantitative research is outlined. Before defining these two concepts, it is important to note that this study represents non-experimental research.

Kerlinger (1986:348) defines non-experimental research as follows:

"Non-experimental research is the systematic empirical inquiry in which the scientist does not have direct control of independent variables while in experimental research the researcher attempts to manipulate the independent variable".

Studies that produce data where mathematical analysis can be used, often to reveal statistically significant differences, are classified as quantitative studies (McDaniel & Gates, 2000:98).

According to Bailey, Bemrose, Goddard, Impey, Joslyn and Mackness (1995:50) quantitative research is the kind where you measure things or count them, perhaps use statistical tests on your data, and then write up your results using tables, figures, graphs and bar charts. Qualitative research usually results in verbal descriptions, and might use quotations from people you interviewed or pictures of things happening.

According to Monette, Sullivan, and DeJong (2008:87) qualitative research involves data in the form of words, pictures, descriptions, or narratives, while quantitative research uses numbers, counts, and measures of things.

Leedy (1993:139) states that qualitative research methodologies deal with data that are principally verbal in nature, while quantitative research methodologies deal with data that are principally numerical in nature.

Kleynhans, (2007) citing White, (2003:11) states that quantitative research seeks to explain relationships and the causes of changes in measured social facts.

Kleynhans, (2007) citing White, (2003:12) further explains that:

"Quantitative research is usually based on what is called a positivist philosophy, which assumes that there are social facts with a single objective reality, which is separated from the feelings and beliefs of individuals. This objective reality can be

- Explained
- Controlled; and
- Predicted by natural (cause-effect) laws."

Emanating from the definitions stated above, a quantitative study will be conducted to determine the factors to improving group and team effectiveness at Transnet Engineering.

According to Kleynhans (2007) citing White (2003:6) there are three types of research functions. These are basic research, applied research and evaluation research. Author further states that applied research is the type of research in which the results or findings can be used to solve problems of immediate concern. De Vos (2001:69) defines applied research as being directed towards providing solutions or shedding light on practical problems.

According to the definitions of White and De Vos, this research project is classified as an applied research project. An attempt is made to determine the factors to improving team effectiveness at Transnet Engineering.

According to McMillan and Schumacher (1997:35), cited by Kleynhans (2007), the following table describes the major types of research design.

Table 4.1 Major types of research design

Quantitative		Qualitative	
Experimental	Non-experimental	Ethnographic	Analytic
True experiment Quasi experiment	Descriptive Correlation Survey Ex post facto	Participant Observation Ethnographic interview Document and artefact analysis	Concept analysis Historical analysis Legal analysis

Source: Kleynhans (2007) citing McMillan and Schumacher (1997:35)

Kleynhans, (2007) citing White (2003:62) maintains that:
"Descriptive research is concerned with conditions or relationships that exist, practices that prevail, beliefs, points of view, or attitudes that are held, processes that are going on, effects that are being felt, or trends that are developing".

Hair, Babin, Money and Samouel (2003:61) postulate that a cross-sectional study produces a 'snapshot' of a population at a specific point in time. Babbie and Mouton (2004:92) argue that taking a cross-section of a selected phenomenon at any one time and analysing that cross-section carefully, is classified as a cross-section study.

From the explanations of Hair et al, Babbie and Mouton, and Kleynhans citing White it can be concluded that the study will be a descriptive, cross-sectional study to determine the factors to improve team effectiveness at Transnet Engineering.

Leedy and Ormrod (2005:88) state that although methodologies in conducting research may differ, all research is tested by certain criteria, which must be built into the research design at the planning stage.

These criteria are:

- **Universality** – enabling the research project to be conducted by any competent person other than the researcher, with essentially the same results;

- **Replication** – meaning that any other researcher should be able to achieve the same results by collecting data under the same circumstances and within the same parameters of the original research;

- **Control** – meaning that the factors that are critical to the research are isolated within a demarcated area given by parametric limitations. This is important for replication; and

- **Measurement** – meaning that the data should be susceptible to measurement, which offers possibilities for quantification and evaluation of the data.

In summary, research methodologies can be classified into two major approaches, namely quantitative and qualitative research. Under the descriptive quantitative approach, the survey method was chosen to carry out the research project.

4.3 PLANNING THE EMPIRICAL SURVEY

4.3.1 Survey Method

According to Monette et al (2008: 158), the term survey both designates a specific way of collecting data and identifies a broad research strategy. They further state that survey data collection involves gathering information from individuals, called respondents, by having them respond to questions. Monette et al (2008:158) further state that data in survey research is collected in two basic ways: with questionnaires, or with interviews. A questionnaire contains recorded questions that people respond to directly on the questionnaire form itself, without the aid of an interviewer. An interview involves an interviewer reading questions to a respondent and then recording his or her answers. An important point to note is that surveys measure

people's thoughts, feelings, and behaviours. All surveys involve presenting respondents with a series of questions to answer.

For the purpose of this study, the respondents for this survey are the operational supervisors, superintendents, foremen and managers at Transnet Engineering, and a questionnaire was used as a mode of data collection to determine the factors that could improve team effectiveness at Transnet Engineering Koedoespoort plant.

4.3.2 The Questionnaire

Hair, Babin, Money, Samouel (2003:184) state that a questionnaire is a prepared set of questions (or measures) to which respondents or interviewers record answers. Questionnaire design is a very important phase because data collected with questionnaires is used to improve decision making.

Hair et al (2003:185) outline the five steps that can be followed when designing a questionnaire. They are presented as follows;

Step 1: Initial Consideration
- Clarify the nature of the research problem and objectives.
- Develop research questions to meet research objectives.
- Define target population and sampling frame (identify potential respondents).
- Determine sampling approach, sample size, and expected response rate.
- Make a preliminary decision about the method of data collection.

Step 2: Clarification of concepts
- Ensure the concepts can be clearly defined.
- Select the variables/indicators to represent the concepts.
- Determine the level of measurement.

Step 3: Typology of a questionnaire
- Determine the type of questions to include and their order.
- Check the wording and coding of questions.

- Decide on the grouping of the questions and the overall length of the questionnaire.

- Determine the structure and layout of the questionnaire.

Step 4: Pretesting a questionnaire

- Determine the nature of the pre-test for the preliminary questionnaire.

- Analyse initial data to identify limitations of the preliminary questionnaire.

- Refine the questionnaire as needed.

- Revisit some or all of the above steps, if necessary.

Step 5: Administering a questionnaire

- Identify the best practice for administering the type of questionnaire utilised.

- Train and audit field workers, if required.

- Ensure a process is in place to handle completed questionnaires.

- Determine the deadline and follow-up methods.

In this research study, step 1 of the process above was achieved by considering that the research problem is to identify factors for improving team effectiveness at Transnet Engineering. The respondents are supervisors, superintendents, foremen and managers. The decision taken by the researcher was that a questionnaire would be used to collect data. Research questions are developed from the literature study. The researcher decided to use a questionnaire as a tool to collect data. Step 2 of the above process was achieved by creating clear and simple questions according to the factors or concepts identified from the literature study, and a suitable five point Likert-type rating scale was used to measure variables.

Step 3 was achieved by grouping the questions of the questionnaire according to the categories under which the factors for improving team effectiveness fall, that is, organisational context factors, individual context factors, team context factors, management support and team effectiveness. The questionnaire had two sections: section A was for collecting biographic information and section B had statements to identify factors for improving team effectiveness at Transnet Engineering. Questions are coded according to the numbering system and sequence. A simple structure was

developed so that the respondent will find it easy to follow the flow of the questionnaire.

Step 4 and 5 was achieved by piloting the questionnaire using a target group that represents the sample to be studied, and a statistician, together with the research supervisor, was contacted before the final questionnaire was distributed. During the development of the questionnaire, the researcher ensured that the questionnaire was short, clear and simple language was used, attractive and professional looking, it provided clear instructions, coding was made simple, and most importantly, the researcher checked whether the questionnaire addressed the needs of the research. The researcher decided to hand deliver and collect the questionnaire to and from the respondents to save on time.

Leedy and Ormrod (2005:190) provide twelve guidelines for developing a questionnaire that encourage people to be co-operative and yield responses that a researcher can use and interpret.

These are:
- Keep it short.
- Use simple, clear, unambiguous language.
- Check for unwarranted assumptions in your questions.
- Word your questions in ways that do not give clues about preferred or desirable outcomes.
- Check for consistency.
- Determine in advance how you will code the responses.
- Keep the respondent's task simple.
- Provide clear instructions.
- Give a rationale for any items whose purpose may be unclear.
- Make the questionnaire attractive and professional looking.

4.3.2.1 Question content and format

According to Monette et al (2008:162), questions should be developed with great care and without ambiguity that can cause substantial trouble. Researchers should keep questions simple and direct to the point, and avoid complex statements that express more than one idea. Researchers should estimate the reading capability of the respondents. They further state that researchers should avoid using technical terms in the questions because the respondents might interpret these incorrectly. Researchers should avoid the use of slang terminology because slang tends to arise in the context of particular groups and subcultures.

In this study, the researcher gave direction to the respondents that the answer to questions should be marked with an "X"; a brief introduction to each section of the questionnaire was also given by the researcher to give insight into the item that is researched. Close ended questions were used in this study because respondents are provided with a fixed set of alternatives from which to choose, respondents are not given a leeway to provide their own answers, for each question, a rating scale is used and respondents need to select what they feel is the best answer that describes their view or belief. A Likert rating scale of 1 to 5 is used, one being strongly agree, two is agree, three is uncertain, four is disagree and 5 being strongly disagree. The questionnaire was piloted by the researcher to ensure that question content is clear, format is clearly understood, and the rating format is understood. The question content used in the questionnaire by the researcher is clear, simple and unambiguous, and no slang or jargon is used to make it easier for the respondents to understand and answer the questions.

4.3.2.2 Advantages and disadvantages of questionnaires

An advantage of using a questionnaire for this research paper is that it is an inexpensive form of collecting data, and it is quicker than to do interviews. Interviews need a lot of time and to schedule them is not an easy task because the researcher has to fit into the busy schedule of the respondents. Another advantage of using a questionnaire is that participants can respond to questions with the assurance that their responses will be anonymous, and so they may be more truthful than they

would be in a personal interview, particularly when sensitive and controversial issues are asked, explains Monette et al (2008:172).

Disadvantages are that the language used in the questionnaire might not be understood by respondents, and the degree of literacy might have an influence on the response rate. Instructions on how to answer questions might be misunderstood and, when using the questionnaire the researcher is not there to provide clarity. Lastly, the researcher has no assurance that the person who should answer the questionnaire is the one who actually does, explains Monette et al (2008:172).

4.3.3 Administering the questionnaire

Permission to distribute the questionnaire was obtained from Mr D. Kala (National Capacity Building Manager) and Mr S. Matlou (National Corporate Employee Relations Manager), who was acting General Manager Human Capital at the time, and both are senior managers at Transnet Engineering. A copy of approval letter to distribute the questionnaire is shown in Annexure B.

The researcher hand delivered the questionnaires to the sample population that was selected to take part in the study. A covering letter accompanied the questionnaire, it stated that answering the questionnaire should not take more than 15 minutes of the respondents' time, it requested completion of the questionnaire within the allocated time frame, it explained briefly the aim of the study, confirmed confidentiality of the respondents, and it also notified the respondents of the availability of the summary of the findings should respondents be interested. The due date for the questionnaire was 31 October 2013. The covering letter and questionnaire is shown in Annexure C and D respectively.

4.3.4 Pilot Study

A pilot study of the questionnaire was conducted to establish the reliability and validity of the statements. The pilot study was conducted with three supervisors and five managers whose profiles closely represent the population that is used for the study. Hair, et al (2003:168-175) state that reliability is concerned with the consistency of the research findings. They further mention that validity is the extent

to which a construct measures what is supposed to be measured. The pilot study assisted in checking content validity and the validity of the scales used to measure what is supposed to be measured.

4.3.5 The validity, reliability and practicality of the questionnaire

According to Leedy (1997:32), validity and reliability are terms used in connection with measuring instruments. The integrity of the research is based on the validity and reliability of that piece of work and, as such, it is important that the study should meet the demands of validity and reliability.

Nkonki (2005), citing Cooper and Emory (1995:148), identifies three criteria for evaluating a measurement tool; they are validity, reliability and practicality. A good measurement tool will therefore be characterised by how valid, reliable and practical it is in measuring what it is purported to measure.

4.3.5.1 Validity

Nkonki (2005), citing Cooper and Emory (1995:148), defines validity as the extent to which a test measures what is actually measured, the extent to which differences found with a measuring tool reflect true differences among respondents being tested. Leedy (1997:32) states that validity is concerned with the soundness and effectiveness of the measuring instrument. Does it measure what is intended to measure? How accurate is that measure? In the case of this study, does the questionnaire measure what it was supposed to measure?

Monette et al (2008:111) states that there are several types of validity which are:

- **Face validity:** involves assessing whether a logical relationship exists between the variable and the proposed measure. Face validity refers to whether the questions seem appropriate.
- **Content validity:** has to do with whether a measuring device covers the full range of the meanings or forms that are included in a variable to be measured.

This is related to face validity and is where the accuracy of the instrument in measuring the factors of concern to the study is gauged.

- **Criterion validity:** establishes validity by showing a correlation between a measurement device and some other criterion or standard that we know or believe accurately measures the variable under consideration.

- **Predictive validity:** in which an instrument predicts some future state of affairs.

- **Construct validity:** involves relating an instrument to an overall theoretical framework to determine whether the instrument is correlated with all the concepts and propositions that comprise the theory. Leedy (1997) states that construct validity is the degree to which the content of the study is measured by the questionnaire.

- **Internal validity:** This is the freedom from bias in formulating conclusions based on the data received (Leedy 1997).

- **External validity:** This is the degree to which the conclusions reached in the study may be generalised (Leedy 1997).

In this study, face validity, content validity and construct validity were applied.

4.3.5.2 Reliability

Nkonki (2005), citing Cooper and Emory (1995:148) defines reliability as the accuracy and precision of a measurement procedure; it is concerned with estimates of the degree to which a measurement is free of random or unstable error. According to Leedy (1997:35), reliability is seen as the consistency with which the measuring instrument performs. Therefore, apart from delivering accurate results, the measuring instrument must deliver similar results consistently. In this study, a pilot test was conducted on colleagues of similar profile to the recipients of the questionnaire. The aim of the pilot study was to ensure that all questions were understandable and relevant. Bless and Higson-Smith (1997) state that the most commonly used statistic for internal reliability is the Cronbach's alpha. The Cronbach's alpha has a range of 0 -1, where 0 is no internal consistency and 1 is the maximum internal consistency. The general rule of thumb for determining what

constitutes a good internal reliability is 0.75. In this study, Cronbach's alpha is used to test reliability.

De Vos (2001:85), citing Hudson (1981), defines reliability as the accuracy or precision of an instrument. Reliability is the degree of consistency or agreement between two independent sets of scores. Reliability is also the extent to which the independent administrations of the instrument will yield similar or the same results under comparable situations.

4.3.5.3 Practicality

Practicality refers to the economy, convenience and interpretability of the instrument (Nkonki (2005), citing Cooper and Emory (1995:148)). The questionnaire was hand delivered to the respondents to save on time and cost, and it was explained by the researcher to the respondents to ensure it was interpreted correctly. A covering letter accompanied the questionnaire. The covering letter stated the purpose of the research and that it would not take more than 15 minutes to complete, and issues of confidentiality were also stated.

4.4 POPULATION AND SAMPLING

Collis and Hussey (2009:209) state that the population is a body of people or collection of items under consideration for statistical purposes. They further state that if the population is relatively small, a researcher can select the whole population. A sample is a subset of a population. In positivist research, a random sample is chosen to provide an unbiased subset that represents the population.

In this research project, the survey population is the operational business unit's supervisors, superintendents, foremen and managers at Transnet Engineering Koedoespoort plant which is in Pretoria. Although within the main plant there are support service businesses such as human resources, risk and safety, maintenance, product development, training, project management, etc., the focus of the research is on operational businesses to make the study manageable. The entire population of operational business supervisors, superintendents, foremen and managers was

studied since it is not large. Population size studied was 147 and is indicated on table 4.2 below.

Table 4.2 Population size.

OPERATIONAL BUSINESS UNIT	No. OF SUPERVISORS, SUPERINTENDENTS AND FOREMEN	No. OF MANAGERS
Locomotives Upgrade	15	6
Locomotives MOP	12	6
Locomotives Power Electronics	8	4
Locomotives New Build	5	8
Rolling Stock Equipment	12	6
Wheels Business	6	6
Rotating Machines Diesel Engines	3	4
Rotating Machines	9	7
Coaches	10	7
Auxilliary	1	2
Foundry	6	4
TOTAL	**87**	**60**

Source: Transnet Engineering (2013)

4.5 CONCLUSION

In this chapter, the researcher described the type of research conducted, survey method used, construction of a questionnaire, advantages and disadvantages of using a questionnaire, population size, pilot study, how the questionnaire was administered and topics of reliability and validity were also discussed.
The next chapter is the presentation of results and the analysis thereof.

CHAPTER 5

RESEARCH RESULTS

5.1 INTRODUCTION

Chapter four described the research methodology used in this study. This chapter presents the results from the empirical research of the study conducted at Transnet Engineering. The results were analysed in order to deduce the factors to improving team effectiveness. Reliability analysis, factor analysis and correlation analysis are also presented in this chapter.

Responses from the respondents to the questionnaire are arranged in graphical form and are presented in the same sequence as the questions in the survey questionnaire.

The data will be analysed and interpreted in terms of the questionnaire:

- Section A – demographic information
- Section B – Seeks to identify supervisors, foremen and managers' perceptions whether the organisational environment at Transnet Engineering supports team work, whether the individual's unique factors such as age, gender, race, cultural background, language, personality, attitudes, skills, ability, etc. affect team effectiveness, whether team factors promote or prevent team effectiveness, whether management at Transnet Engineering support teams to perform effectively, and lastly, to identify if teams at Transnet Engineering are effective or not.

5.2 THE RESEARCH RESPONSE

The questionnaire was delivered on the 23 October 2013 and the responses were collected on the 31 October 2013. The response was 94 out of 147 questionnaires delivered which is a 63.9 percent response rate.

5.3 QUANTITATIVE RESULTS OF THE DEMOGRAPHIC DATA OF SECTION A OF THE QUESTIONNAIRE

Section A of the questionnaire required the respondents to provide information with regard to gender, age, race, academic qualifications, how many employees they manage or supervise, how many years they have been in supervisory or management positions, and in which operating business they work.

5.3.1 Respondents gender

Question 1 of section A required respondents to indicate their gender. Figure 5.1 indicates the number of responses according to gender.

Figure 5.1 Responses according to the gender of respondents
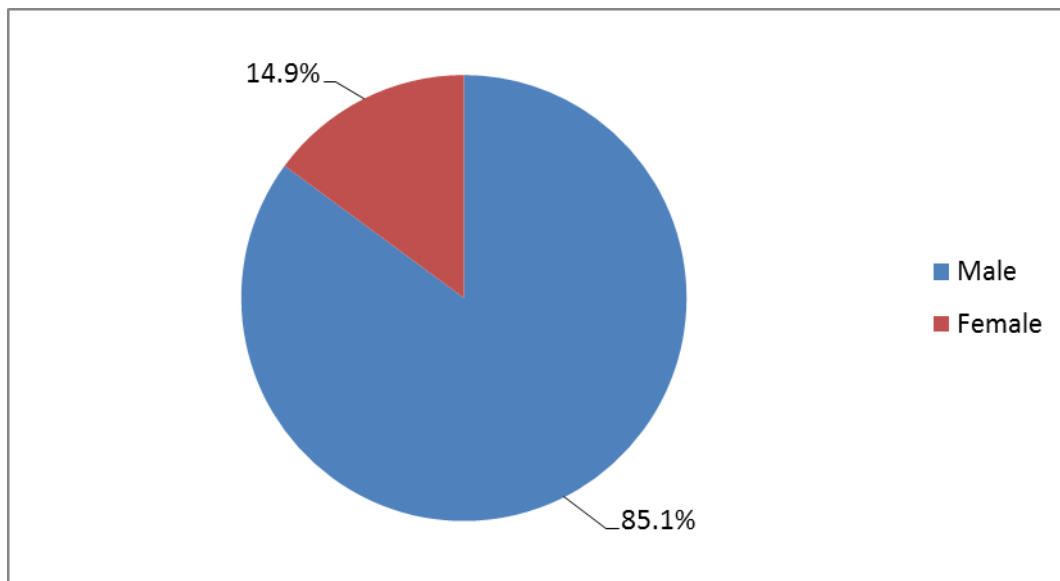
From the responses received, 85.1% responses were from males and 14.9% was from females. Transnet Engineering is in a rail industry which is still dominated by males and hence there are few female respondents.

5.3.2 Operating business respondents work in

Figure 5.2 Responses according to the operating business
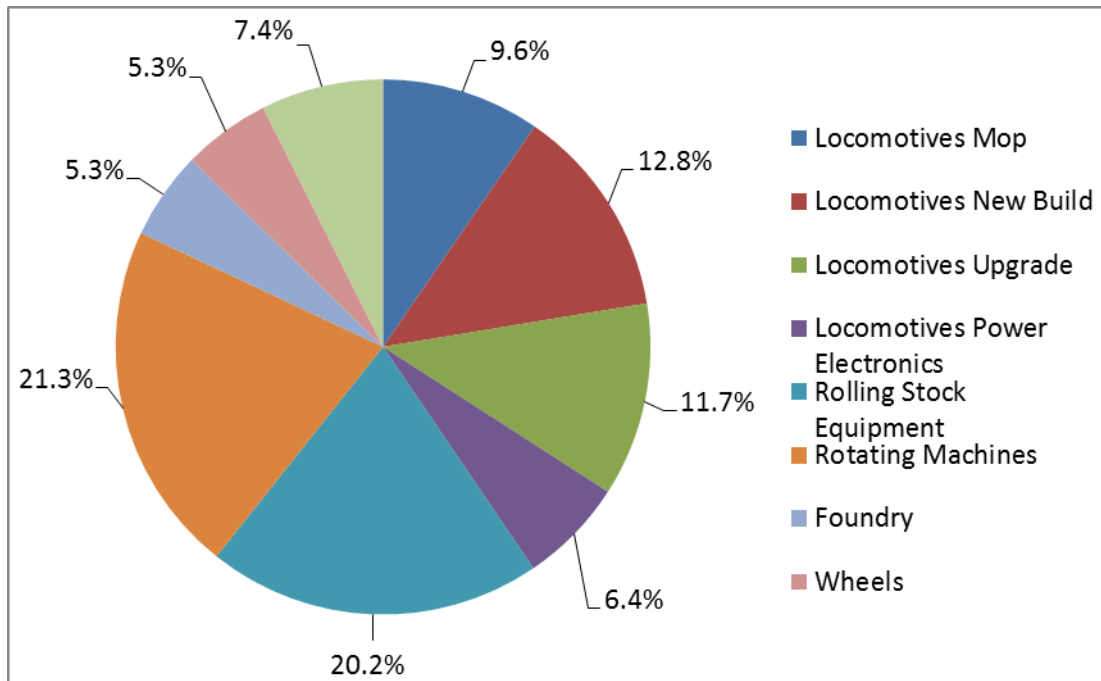
Question 2 of section A of the questionnaire required respondents to indicate the operating business in which they are working. Figure 5.2 shows that 9.6% of respondents came from Locomotives MOP business unit, 12.8% from Locomotives New build, 11.7% from Locomotives upgrade, 6.4% from Locomotives power electronics, 20.2% from Rolling stock equipment, 21.3% from Rotating Machines, 5.3% from Foundry, 5.3% from Wheels and 7.4% from Coaches business unit.

5.3.3 Position occupied by respondents

Question 3 of section A required the respondents to indicate their position. Figure 5.3 indicates the number of responses according to the position.

Figure 5.3 Responses according to the position occupied.
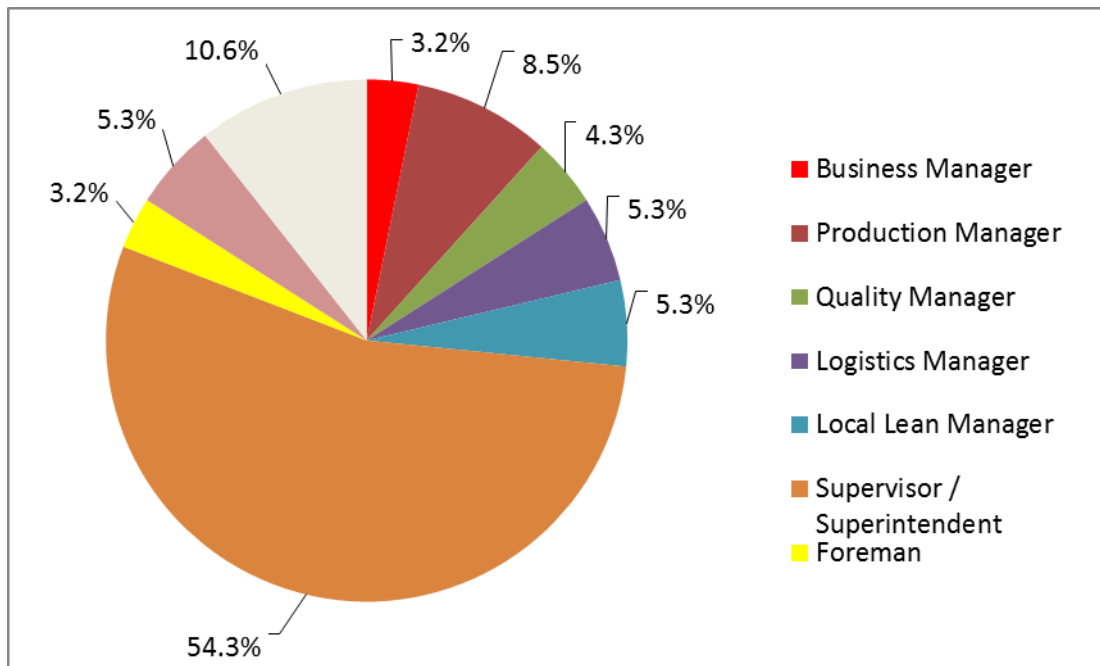
Figure 5.3 indicates that 3.2% of the respondents were Business managers, 8.5% Production managers, 4.3% Quality managers, 5.3% Logistics managers, 5.3% Local lean managers, 54.3% Supervisors and Superintendents, 3.2% Foremen, 5.3% Customer service managers and 10.6% represented other (acting supervisors and acting managers). Managers form 31.9% of the respondents, 57.5% supervisors, superintendents and Foremen. 10.6% is other respondents who are acting supervisors and managers. Each business unit has one Business manager, one Production manager, one Local lean manager, one customer service manager, one Quality manager, and it can have several supervisors/superintendents and foremen ranging between 5 to 15 per business unit. Therefore, for the purposes of this research paper the number of managers, supervisors, superintendents and foremen is fairly distributed for the analysis.

5.3.4 Number of employees managed by the respondent

Question 4 of section A required respondents to indicate the number of employees in their team that they manage or supervise. Figure 5.4 indicates the number of responses according to the number of employees in the respondent's team.

80

Figure 5.4 Responses according to the number of employees the respondent manages or supervises
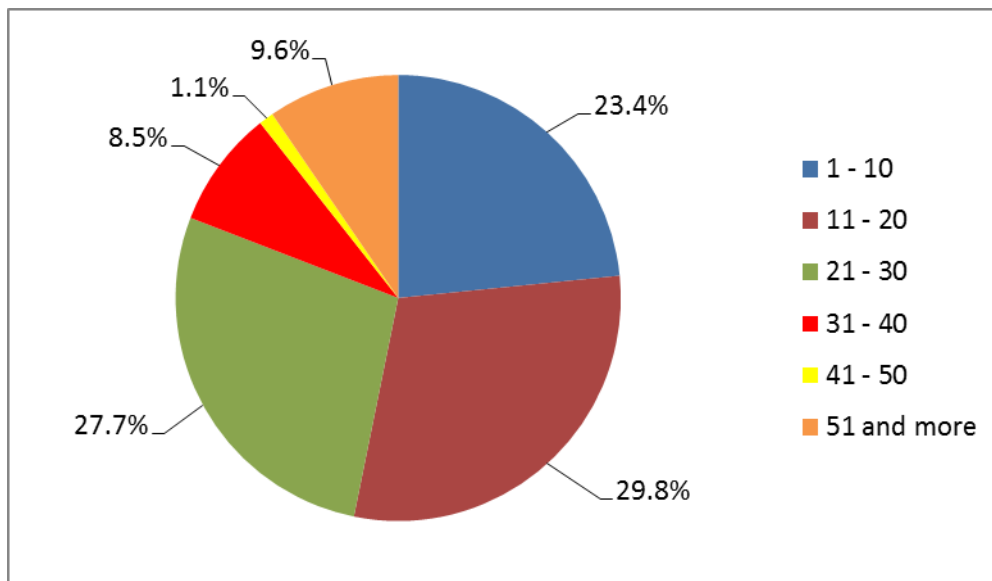
Figure 5.4 indicates that 23.4% of respondents manage or supervise between one to 10 employees, 29.8% manage or supervise between 11 to 20 employees, 27.7% of respondents manage or supervise between 21 to 30 employees, 8.5% of respondents manage or supervise between 31 to 40 employees, 1.1% of respondents manage or supervise between 41 to 50 employees, and 9.6% of respondents manage or supervise between 51 and more employees. Thus, for adequate analysis the study was conducted amongst managers or supervisors who manage or supervise a diverse number of employees in their team.

5.3.5 Number of years in management or supervisory position

Question 5 of section A required respondents to indicate the number of years the respondent has been in management or a supervisory position. Figure 5.5 indicates the number of responses according to the number of years the respondent has been in management or a supervisory position.

Figure 5.5 Responses according to the number of years in management or a supervisory position
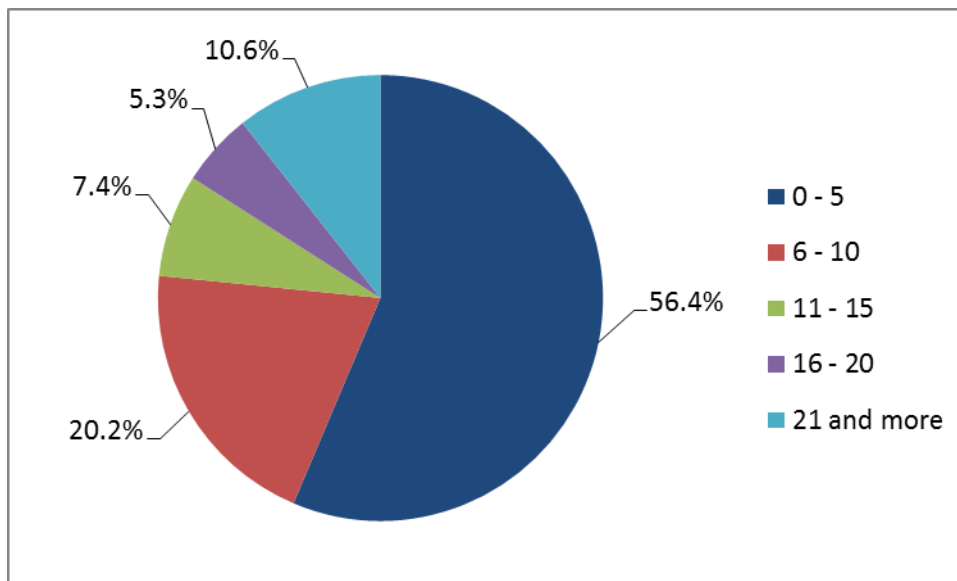
Figure 5.5 indicates that 56.4% of respondents have been in management or a supervisory position for 0 to 5 years, 20.2% have been in position for 6 to 10 years, 7.4% have been in position for 11 to 15 years, 5.3% have been in position for 16 to 20 years, and 10.6% have been in management or a supervisory position for more than 21 years. 43.6% of respondents have more than 5 years of experience, and 56.4% of respondents have less than 5 years of experience. Therefore, for this study the less experienced and the more experienced are adequately represented for analysis.

5.3.6 Age of respondents

Question 6 of Section A required respondents to indicate their age. Figure 5.6 indicates the number of responses according to age.

Figure 5.6 Responses according to the age of respondents
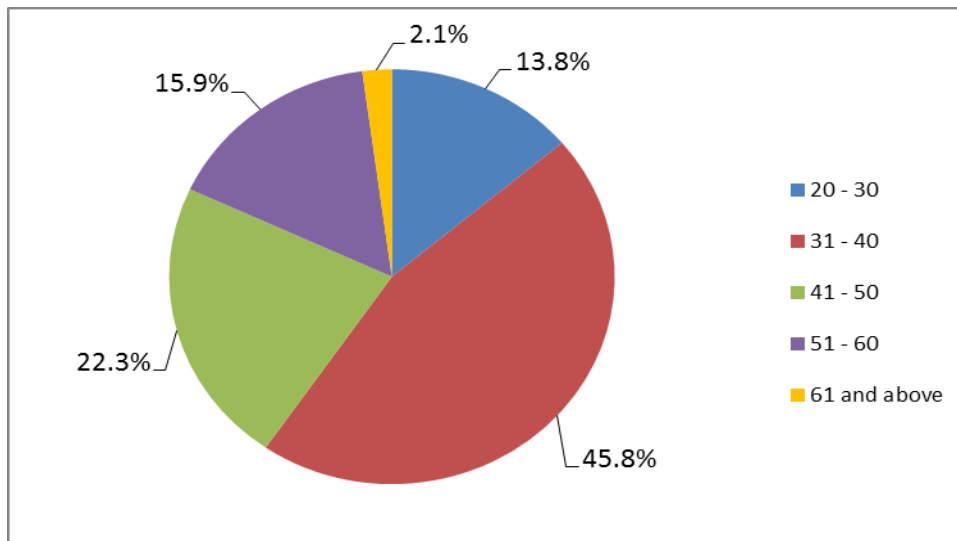
Figure 5.6 indicates that 13.8% of respondents are between the age of 20 to 30 years, 45.8% of respondents are between the age of 31 to 40 years, 22.3% are between the age of 41 to 50 years, 15.9% are between the age of 51 and 60 years, and 2.1% of respondents are aged 61 and above. 40.4% of respondents are above the age of 40 years while 59.6% of respondents are below the age of 40 years. Most of the respondents are between the age of 31 and 40 with a percentage of 45.7%.

5.3.7 Race of respondents

Question 7 of Section A required respondents to indicate their race. Figure 5.7 indicates the number of responses according to race.

Figure 5.7 Responses according to the race of respondents
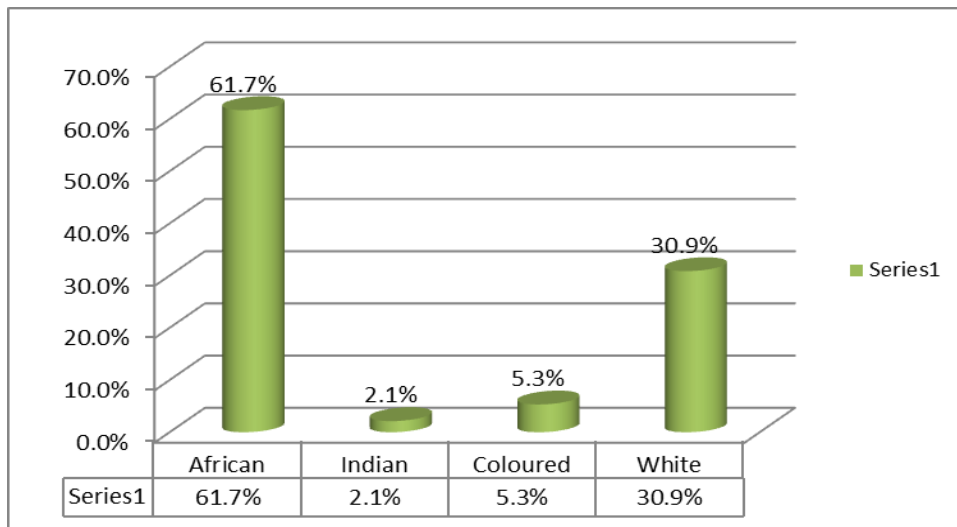
According to figure 5.7, 61.7% of respondents are African, 2.1% Indian, 5.3% Coloured and 30.9% White. Most responses came from the Africans with 61.7%, followed by the White group with 30.9%. There are a lot of Africans in supervisory, foremen and management positions.

5.3.8 Highest academic qualification respondents possess

Question 8 of section A required respondents to indicate their highest academic qualification. Figure 5.8 indicates the number of responses according to the highest academic qualification.

Figure 5.8 indicates that 6.4% of the respondents have less than a matric (grade12), 36.2% have matric (grade 12), 31.9% have a diploma, 10.6% have a degree, and 14.9% have other qualifications which are N3, N4 and artisan trade certificates. 42.5% of respondents have degree and diploma, however, the study indicates that the analysis was conducted across people with different educational backgrounds.

Figure 5.8 Highest academic qualification respondents possess
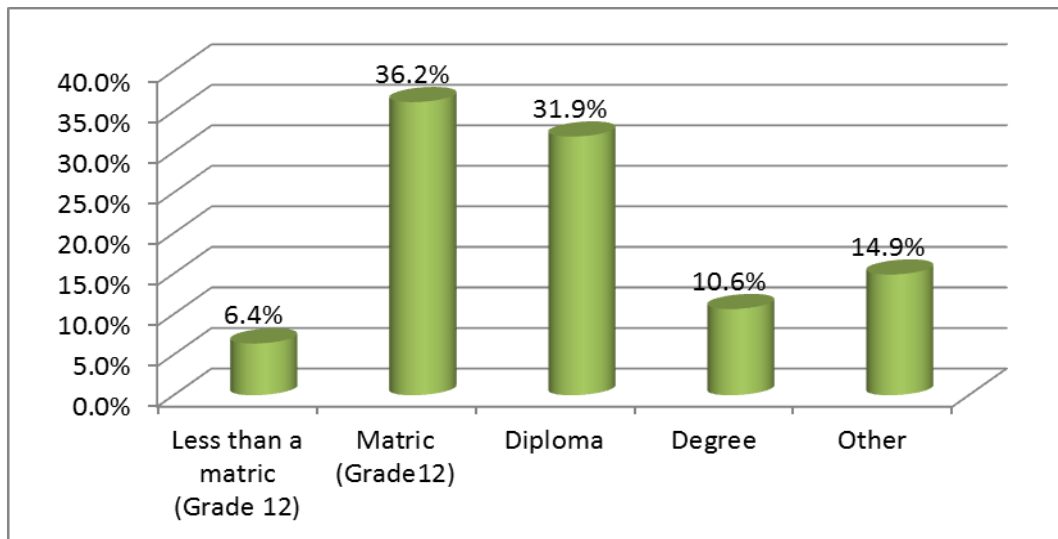
5.4 PRESENTATION AND ANALYSIS OF THE RESULTS OF SECTION B OF THE QUESTIONNAIRE

This study was based on the premise that there are certain factors that are critical for improving work team effectiveness in organisations. This study was conducted among Transnet Engineering Koedoespoort plant operational businesses. The researcher concerned with this study identified a list of factors from a literature review that influence team effectiveness.

This questionnaire was designed to identify whether there was any agreement between the managers', supervisors', superintendents' and foremen's perceptions about the factors that improve their team's effectiveness, and what has been identified from the literature review as the factors for improving team effectiveness.

Section B seeks to identify supervisors', foremen's and managers' perceptions whether organisational environment at Transnet Engineering supports team work, whether the individuals unique factors such as age, gender, race, cultural background, language, personality, attitudes, skills, ability, etc. affect team effectiveness, whether team factors promote or prevent team effectiveness, whether management at Transnet Engineering support teams to perform effectively, and lastly to identify if teams at Transnet Engineering are effective or not.

A Likert scale was used to determine responses: 1 = strongly agree, 2 = agree, 3 = uncertain, 4 = disagree and 5 = strongly disagree.

5.4.1 Organizational context

Figure 5.9 Transnet Engineering provides necessary resources for teams to operate effectively.
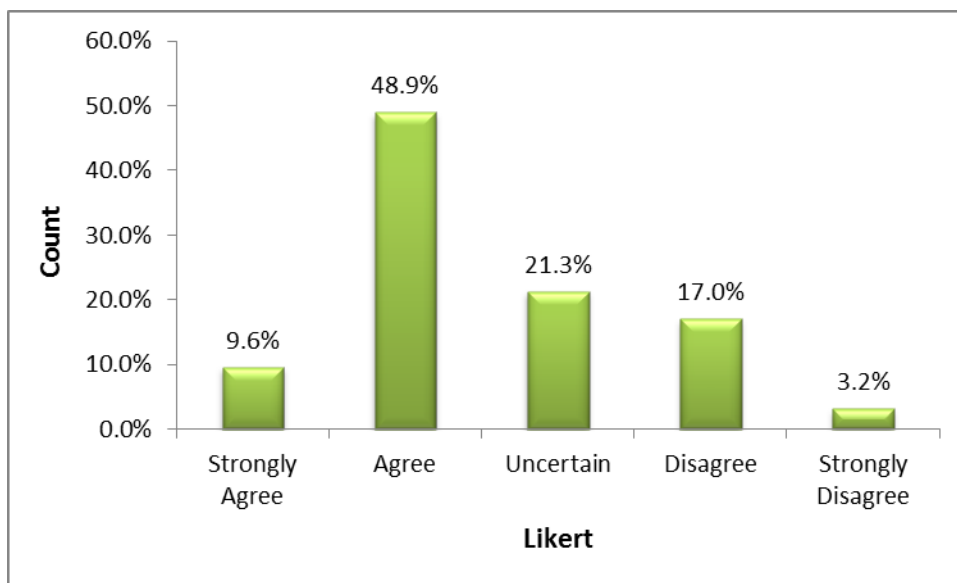
Figure 5.9 indicates that 48.9% of respondents agree and 9.6% strongly agree with the statement. However, 17% disagree and 3.2% strongly disagree that Transnet Engineering provides necessary resources for teams to operate effectively. Results from the literature study indicated that for teams to operate effectively they should be provided with resources. It is a concern that 21.3% of respondents are uncertain; perhaps, they did not understand the statement or the term 'resources'.

Figure 5.10 Transnet Engineering's vision, mission, values and strategy provide direction for functioning of teams.
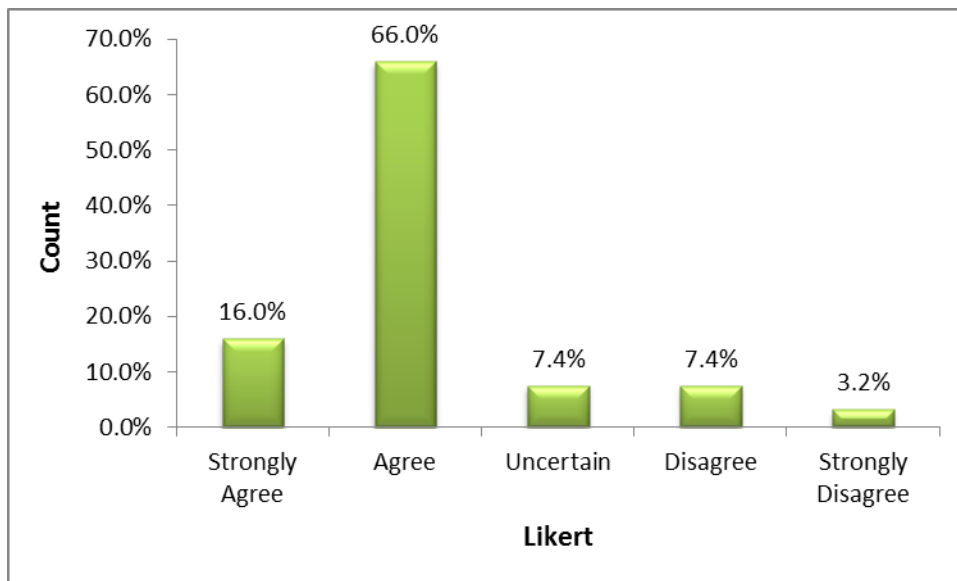
Figure 5.10 indicates that 66% of respondents agree and 16% disagree that Transnet Engineering's vision, mission, values and strategy provide direction for functioning of teams. However, 7.4% disagree and 3.2% strongly disagree. Nel et al (2011:336) state that teams function within an organizational context, which can either enhance or limit effective team functioning. The organisational vision, mission, values and strategy provide direction for team functioning and ideally all team goals, processes and behaviours should be aligned with the strategic direction of the organization. It is good that most of the respondents show that Transnet Engineering's vision, mission, values and strategy provide direction for functioning of teams.

Figure 5.11 Organisational culture at Transnet Engineering supports team work, collaboration, knowledge sharing and excellence.
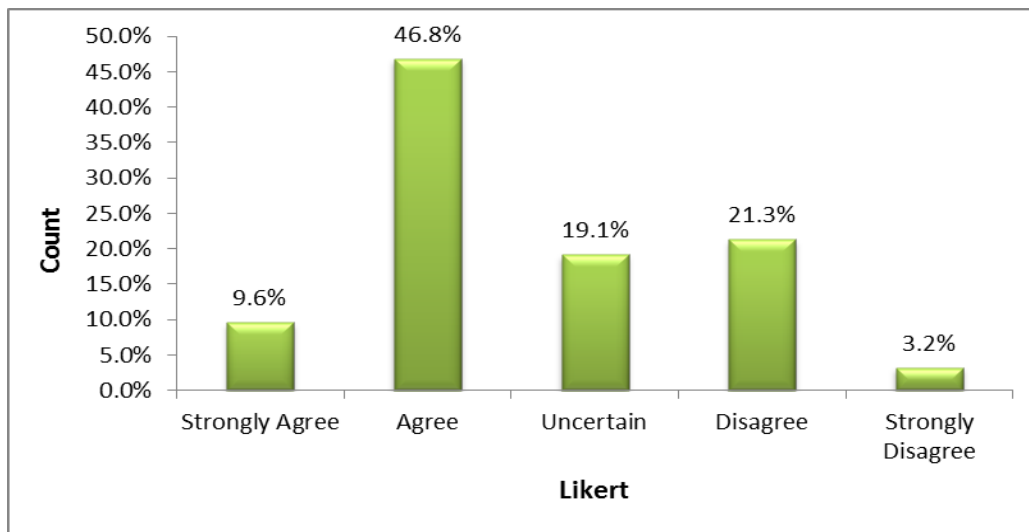
Figure 5.11 indicates that 46.8% of respondents agree and 9.6% strongly agree that Organisational culture at Transnet Engineering supports team work, collaboration, knowledge sharing and excellence. However, 21.3% disagree and 3.2% strongly disagree. The literature study under organisational context highlighted that "a constructive organizational culture that endorses values of collaboration, team work, knowledge sharing and excellence, as well as supportive technology and HR processes (including reward processes), will create a more fertile environment for effective group functioning", (Nel et al 2011). Therefore organisational culture plays an important role in the effectiveness of teams. Figure 5.11 indicates that most respondents believe that at Transnet Engineering there is a culture that supports team work, collaboration, knowledge sharing and excellence.

Figure 5.12 Transnet Engineering leadership (EXCO) nurtures and helps teams to be effective.
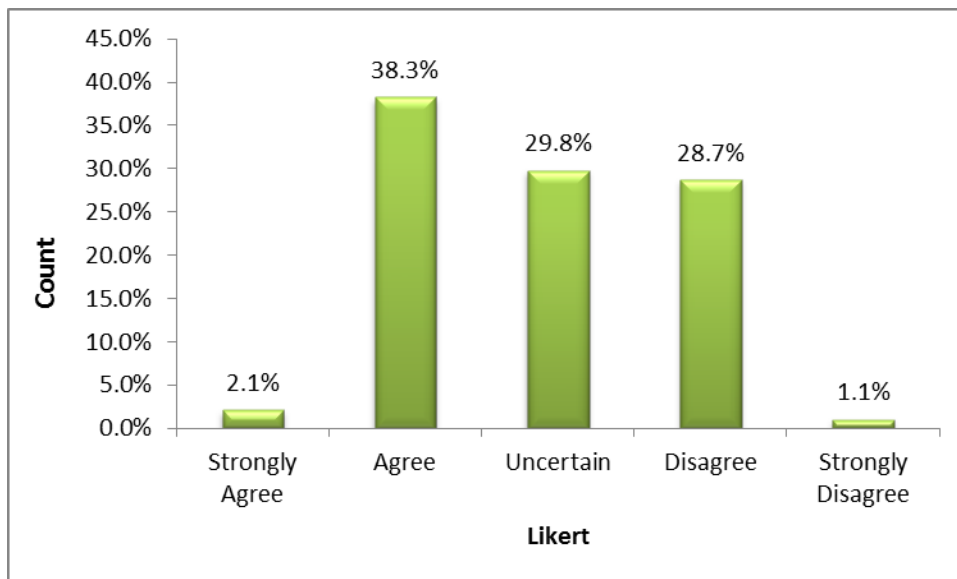
Figure 5.12 indicates that 38.3% of respondents agree and 28.7% disagree that Transnet Engineering leadership (EXCO) nurtures and helps teams to be effective. However, 29.8% respondents said they are uncertain. The results indicate that leadership at Transnet Engineering does not support teams when looking at the respondents that are uncertain and the respondents that disagree. According to Construction Excellence (2004) leadership is critical to teamwork. The team leader is the person responsible for ensuring that members work effectively together to achieve their goal or objective and must facilitate the co-operation necessary for the team to perform well. According to Nel et al (2011:337), effective teams are led by high performance leaders and have members who act as leaders by embracing responsibility, exerting influence to make things happen and hold each other accountable. Therefore, it is evident from the literature study that leadership can influence members to work effectively to achieve common goals.

Figure 5.13 A good reward and recognition system for effective teams exists at Transnet Engineering.
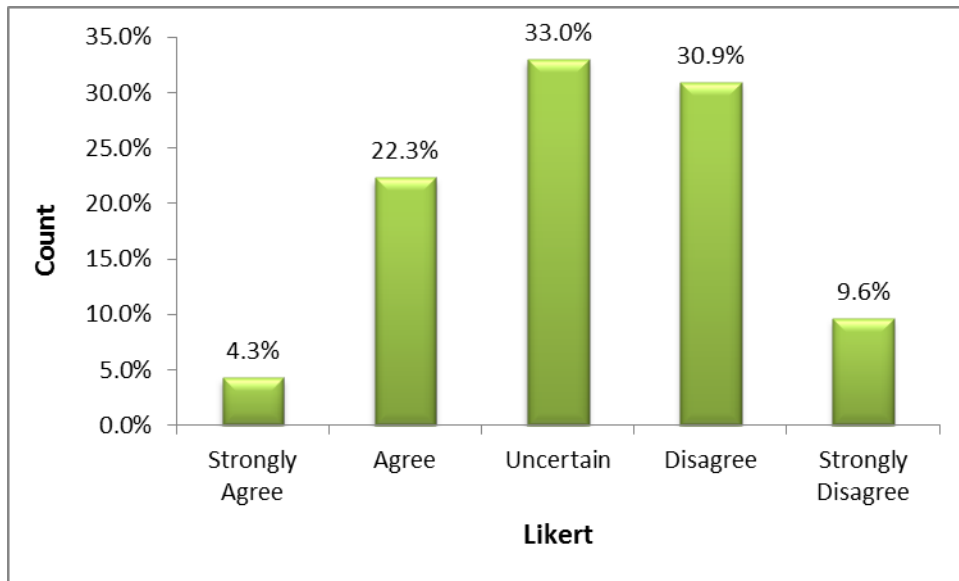
Figure 5.13 indicates that 33% of respondents are uncertain, 30.9% disagree and 22.3% agree that a good reward and recognition system for effective teams exists at Transnet Engineering. Judging from the respondents that are uncertain, disagree and strongly disagree it can be concluded that a reward system for team effectiveness at Transnet Engineering is non-existent. Results from the literature study indicated that team effectiveness needs to be compensated by a good organization's reward and recognition system.

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Figure 5.14 Transnet Engineering does provide training opportunities to enhance skill, knowledge, experience and competence of team members.
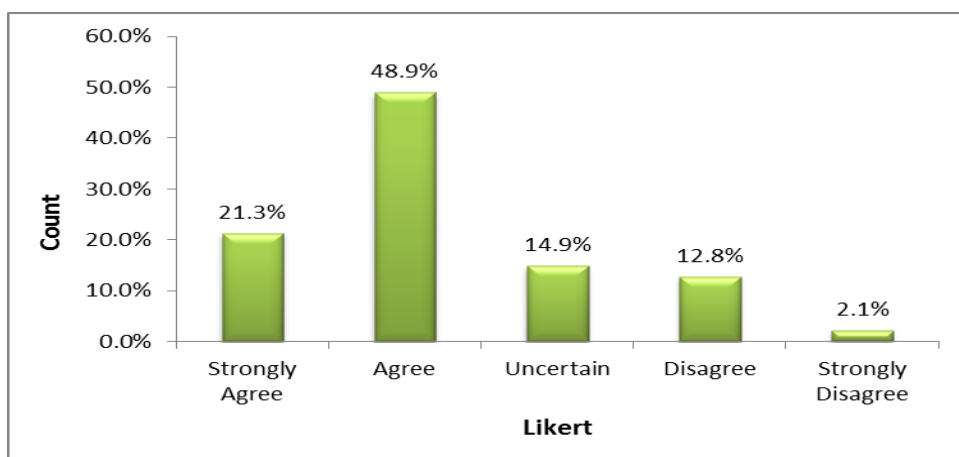
Figure 5.14 indicates that 48.9% of respondents agree, 21.3% strongly agree and 12.8% disagree and 14.9% are uncertain that Transnet Engineering does provide training opportunities to enhance skill, knowledge, experience and competence of team members. According to Noe, Hollenbeck, Gerhart and Wright (2012:22), a learning organization embraces a culture of lifelong learning, enabling all employees to continually acquire and share knowledge. Therefore, the researcher can conclude that at Transnet Engineering training opportunities are given to teams to improve the team's effectiveness.

Nel et al (2011) mention that training and development are enabling factors that allow team members and leaders to take on new responsibilities. Where team members possess inadequate work skills and knowledge, teams are less likely to succeed.

Figure 5.15 Transnet Engineering does inform employees about policies, organisational changes, strategies, and new developments that affect employees. Decisions and feedback is provided about the organisation's performance.
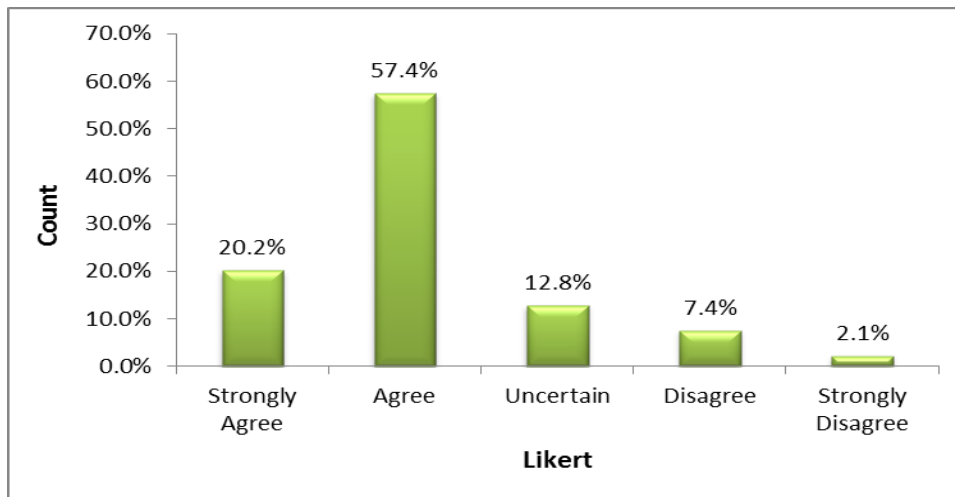
Figure 5.15 indicates that the majority of the respondents (57.4%) agree that Transnet Engineering does inform employees about policies, organisational changes, strategies, and new developments that affect employees. Decisions and feedback is provided about the organisation's performance. Open and transparent communication enhances effectiveness of teams.

It is good to note that at Transnet Engineering, there is open communication. Decisions and feedback are provided about the organisation's performance.

In summary, the research revealed in figures 5.9 to 5.15 that most of the respondents agree that Transnet Engineering provides necessary resources for teams to operate effectively. Transnet Engineering vision, mission, values and strategy provide direction for the functioning of teams, and organizational culture at Transnet Engineering supports team work, collaboration, knowledge sharing and excellence. Most respondents also believe that Transnet Engineering does provide training opportunities to enhance skills, knowledge, experience and competence of team members. Most respondents also agreed that Transnet Engineering does inform employees about policies, organisational changes, strategies, new developments that affect employees. Decisions and feedback is provided about the organisation's performance. Furthermore, the research also indicates that a good reward and recognition system for effective teams does not exist at Transnet Engineering because most of the respondents disagreed or were uncertain that it exists. The support provided by leadership (EXCO) to nurture and help teams to be effective seems not to be existent as many respondents were uncertain and disagreed. There are organisational context factors that need to be attended to to improve team effectiveness at Transnet Engineering.

5.4.2 Individual context factors

Figure 5.16 Differences in age, gender and race of team members affect your team effectiveness.
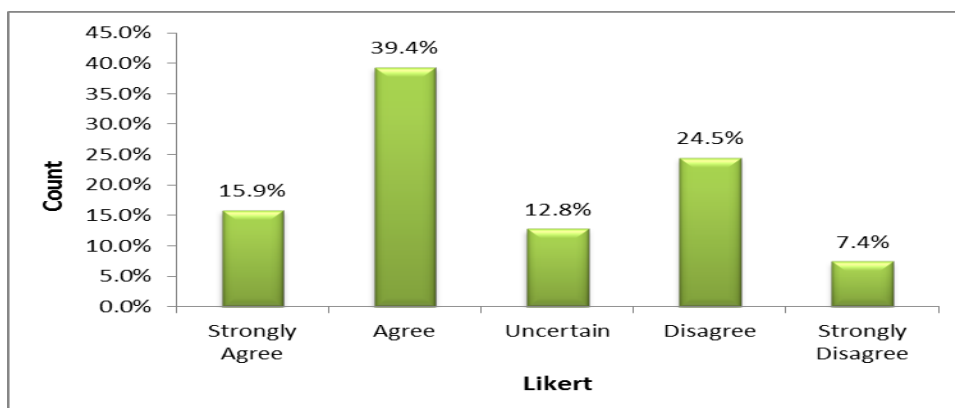
Figure 5.16 indicates that 39.4% of respondents agree, 15.9% strongly agree, 24.5% disagree and 7.4% strongly disagree that differences in age, gender and race of team members affect their team effectiveness. Age, gender and race are an issue at Transnet which needs attention, and these factors affect team effectiveness.

Figure 5.17 Diverse cultural background and language of team members affects your team effectiveness negatively.
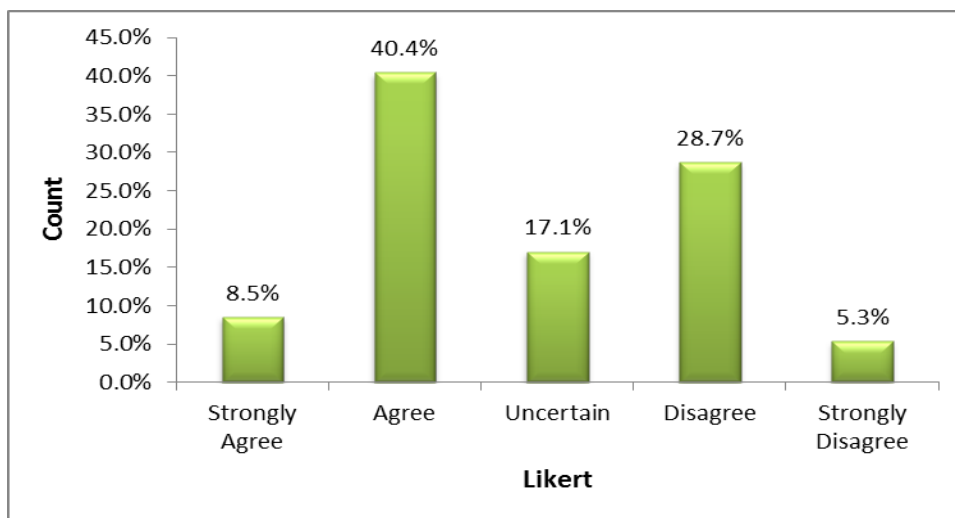
Figure 5.17 indicates that 40.4% of respondents agree and 8.5% strongly agree that a diverse cultural background and the language of team members affect team effectiveness negatively, however, 28.7% disagree and 5.3% strongly disagree. Most respondents agree that a diverse cultural background and the language of team members affect team effectiveness negatively. This indicates a point of concern.

Figure 5.18 below indicates that 52.1% of respondents agree and 29.8% strongly agree that individuals in their team that have the right skills, knowledge, abilities, aptitude and competencies improve team effective. The results of the empirical study agree with the literature study that skills, knowledge, abilities, aptitude and competencies affect team effectiveness.

Figure 5.18 Individuals in your team that have the right skills, knowledge, abilities, aptitude and competencies make your team effective.
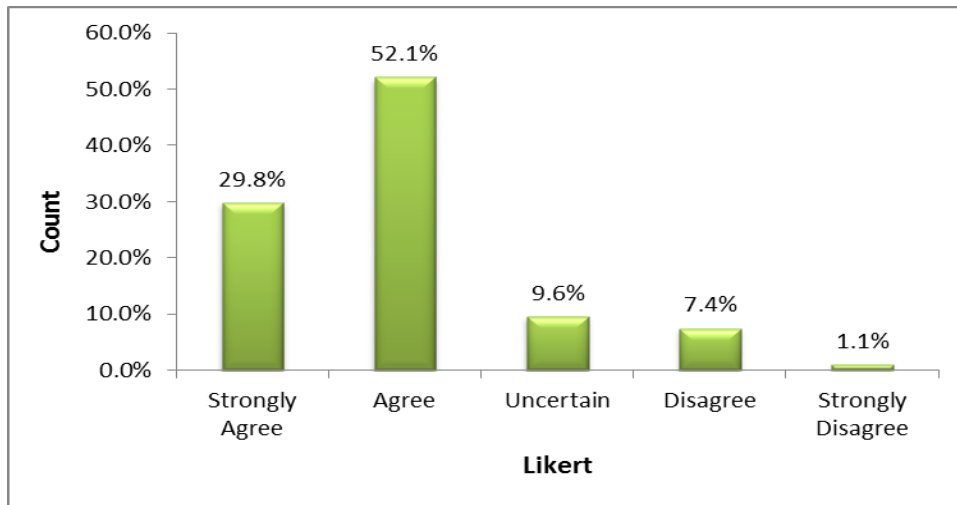
Figure 5.19 Individuals with a positive attitude in your team enhance teamwork and team effectiveness.

Figure 5.19 indicates that 42.5% of respondents agree and 41.5% strongly agree that individuals with a positive attitude in their team enhance teamwork and team effectiveness. However, 9.6% were uncertain and 6.4% disagreed. As it was indicated from the literature study that individuals' attitude affects team effectiveness, the results of the empirical study seem to suggest that positive attitude affects team work and team effectiveness.

Figure 5.20 A mentally, physically and emotionally able team member performs at the required level of performance.
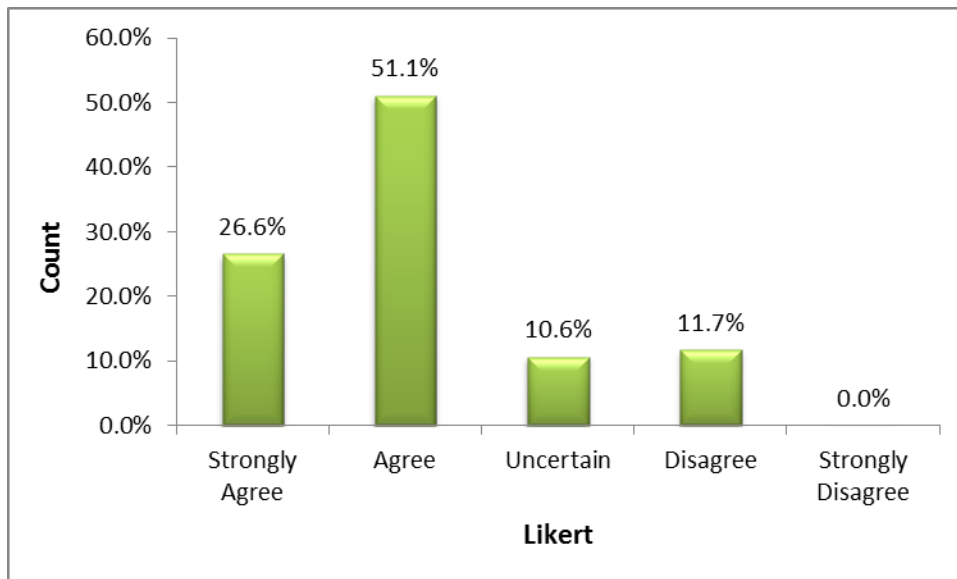
Figure 5.20 indicates that 51.1% of respondents agree, 26.6% strongly agree that a mentally, physically and emotionally able team member performs at the required level of performance. However, 11.7% disagree and 10.6% were uncertain. Most respondents indicated that a mentally, physically and emotionally able team member performs at the required level of performance. This empirical result is in agreement with the literature study.

Figure 5.21 An individual in your team who feels unhappy and is always complaining affect your team effectiveness.
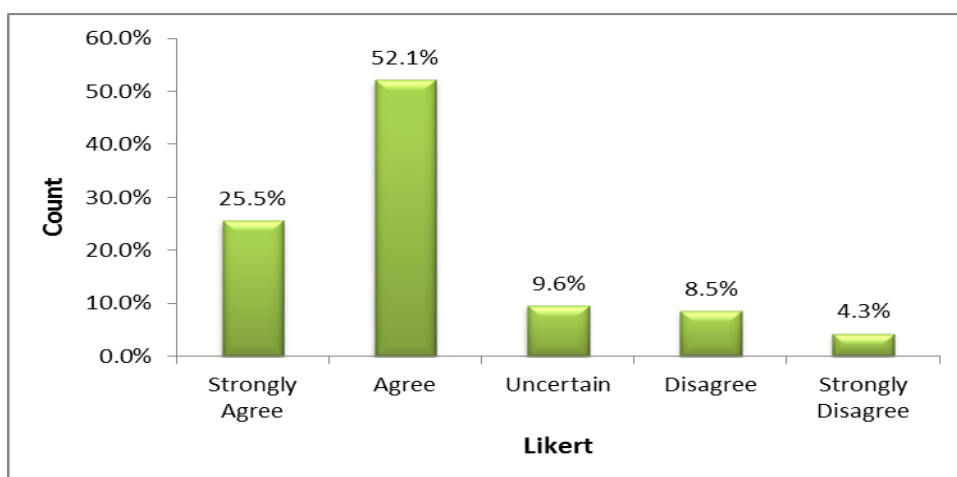
Figure 5.21 indicates that 52.1% of respondents agree, 25.5% strongly agree that an individual in their team who feels unhappy and is always complaining affects team effectiveness. Most respondents agree that an unhappy employee affects the team effectiveness. This is like the saying that says, one rotten potato spoils the whole bag.

Figure 5.22 Individuals in your team that seek more learning, growth and development have a positive impact on your team effectiveness.
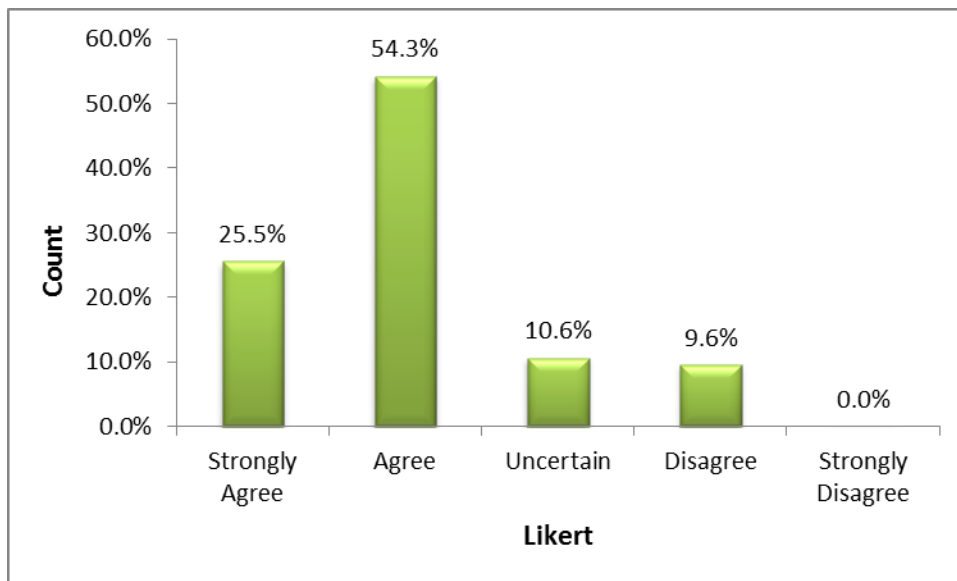
Figure 5.22 indicates that 54.3% of respondents agree and 25.5% strongly agree that individuals in their team that seek more learning, growth and development have a positive impact on the team effectiveness. However, 9.6% disagree and 10.6% were uncertain. Therefore, the empirical results indicate that this is an important factor which must be focused on at Transnet Engineering because most respondents agree that individuals in teams who seek more learning, growth and development have a positive impact on the team effectiveness.

Figure 5.23 Individuals bring their effort to achieve a collective goal and that improves team effectiveness.
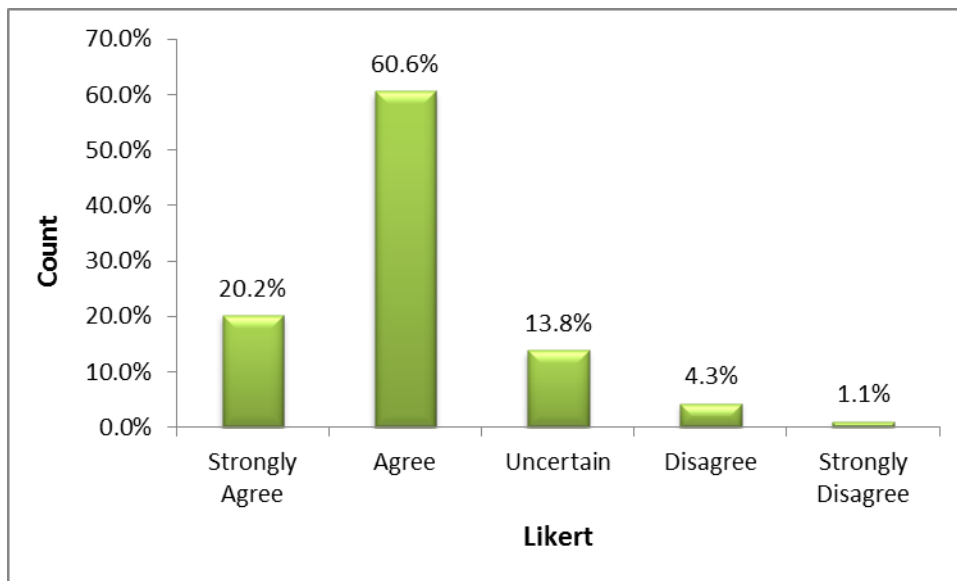
Figure 5.23 indicates that 60.6% of respondents agree and 20.2% strongly agree that individuals who bring their effort to achieve a collective goal improve team effectiveness. The success of a team depends on each individual's contribution. Respondents agree with this factor that individuals bring their effort to achieve a collective goal and that improves team effectiveness.

In summary, the individual context factors responses are displayed in figures 5.16 to 5.23 and research shows that in Transnet Engineering differences in age, gender and race of team members affect team effectiveness, and more respondents also believe that diverse cultural backgrounds and the language of team members affects team effectiveness. Research also points out that individuals in teams that have the right skills, knowledge, abilities, aptitude and competencies make a team effective, and individuals with a positive attitude in the team enhance teamwork and team effectiveness. More respondent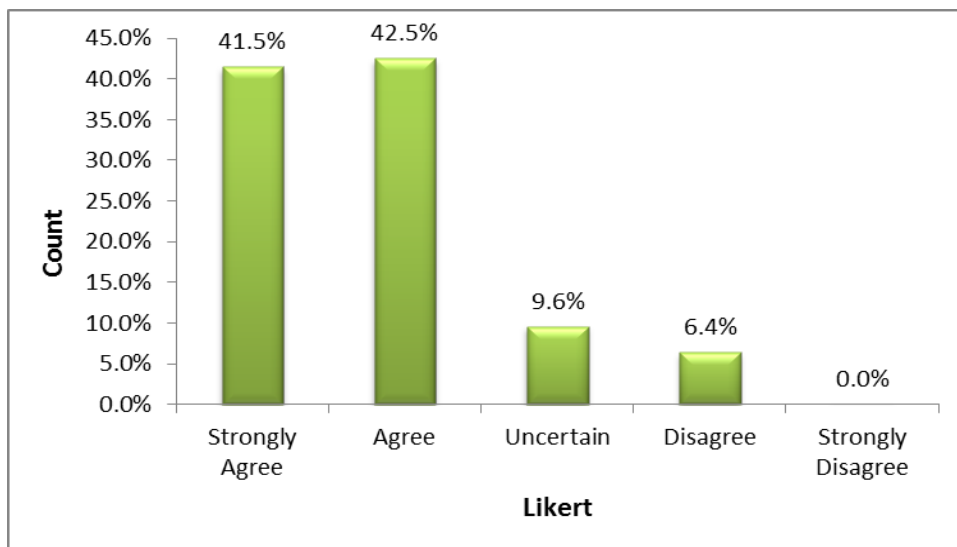s also supported the statement that a mentally, physically and emotionally able team member performs at the required level of performance, and an individual in the team who feels unhappy and is always complaining affects team effectiveness.

Furthermore, most respondents noted that individuals in the team that seek more learning, growth and development have a positive impact on team effectiveness, and individuals bring their effort to achieve a collective goal and that improves team effectiveness.

5.4.3 Team context factors

Figure 5.24 Your team objectives are aligned to organisational strategy and objectives.
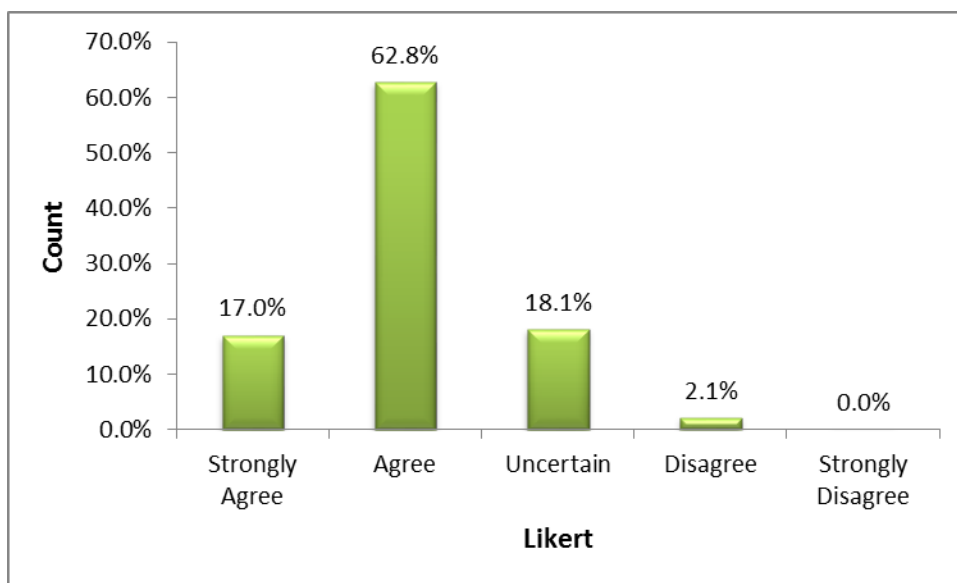
Figure 5.24 indicates that 62.8% of respondents agree and 17% strongly agree that their team objectives are aligned to organisational strategy and objectives. However, 18.1% are uncertain and 2.1% disagree.

The empirical results agree with the literature study results that team objectives must be aligned to organisational strategy and objectiveness for the overall effectiveness of the organisation.

Figure 5.25 Roles and responsibilities are clearly defined, and work is fairly distributed in your team.
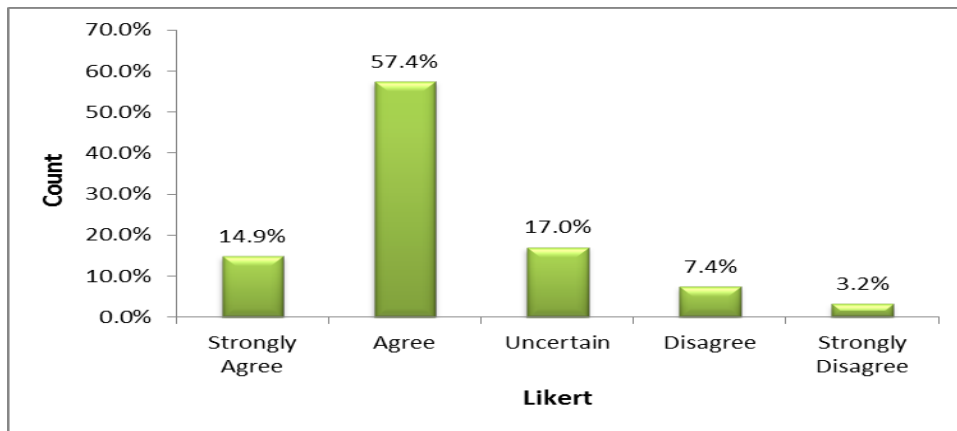
Figure 5.25 indicates that 57.4% of respondents agree and 14.9% strongly disagree that roles and responsibilities are clearly defined, and work is fairly distributed in their team. However, 17% are uncertain, 7.4% disagree and 3.2% strongly disagree. Most respondents indicated that roles and responsibilities are clearly defined, and work is fairly distributed in the team. This is an important factor for team effectiveness because if roles are not clear, not defined and fairly distributed, team effectiveness will be affected. At Transnet Engineering the data indicates that roles and responsibility are clearly defined.

Figure 5.26 Your team members have open communication and are encouraged to communicate freely, no favouritism, discrimination or prejudice.
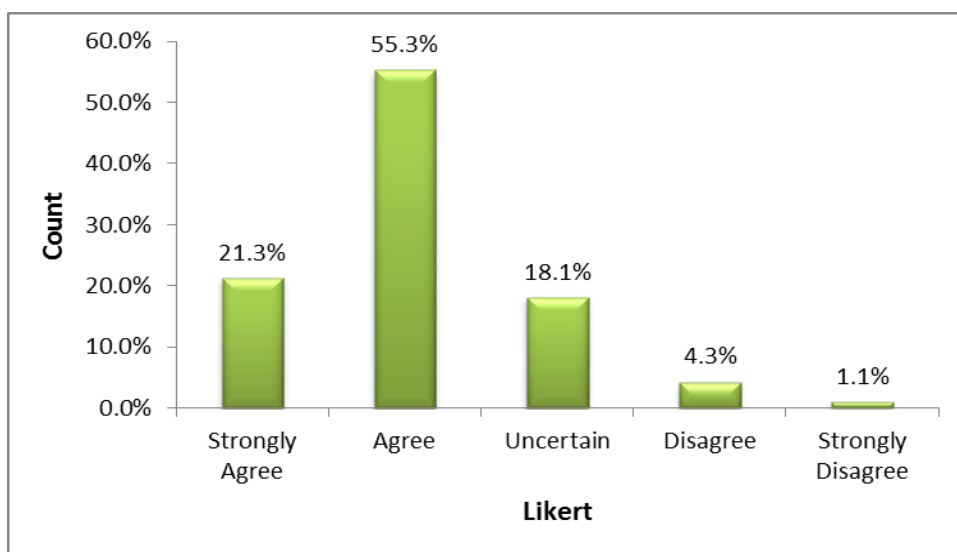
Figure 5.26 indicates that majority of respondents (55.3%) agree and 21.3% strongly agree that their team members have open communication and are encouraged to communicate freely, no favouritism, discrimination or prejudice. Communication is an important factor for improving team effectiveness, and the empirical results indicate that at Transnet Engineering teams communicate openly and freely.

Figure 5.27 Size of your team affects team effectiveness.
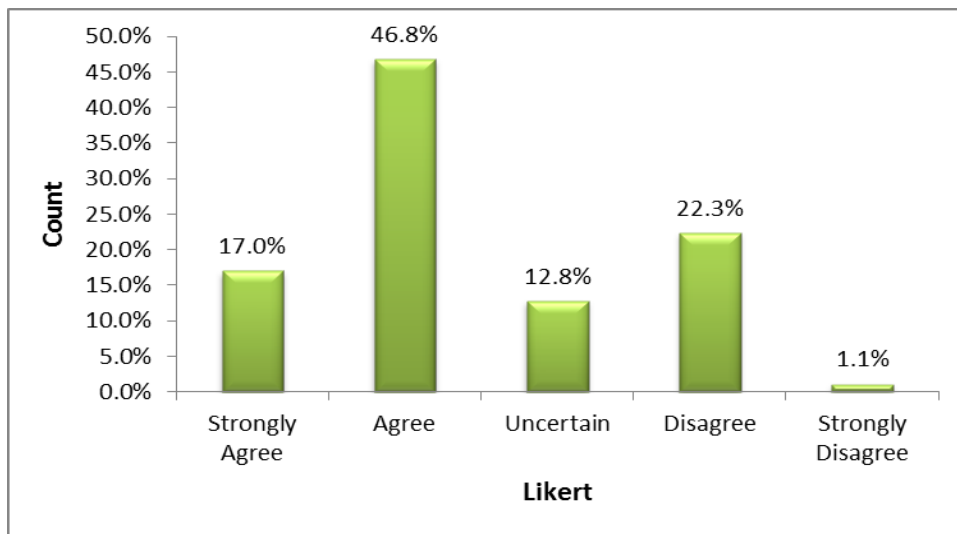
Figure 5.27 indicates that 46.8% of repondents agree and 17% strongly disagree that size of their team affects team effectiveness. However, 22.3% disagree, 12.8% are uncertain and 1.1% strongly disagree. At Transnet Engineering, size of the team matters, as indicated by the results. Team size can affect team functioning and create problems such as complicating communication and coordination. It is suggested that team size should be limited to a minimum number in accordance with the team's goals (Nel, et al. 2011:346).

Figure 5.28 Positive norms (acceptable standards of behaviour) in your team do promote team effectiveness.
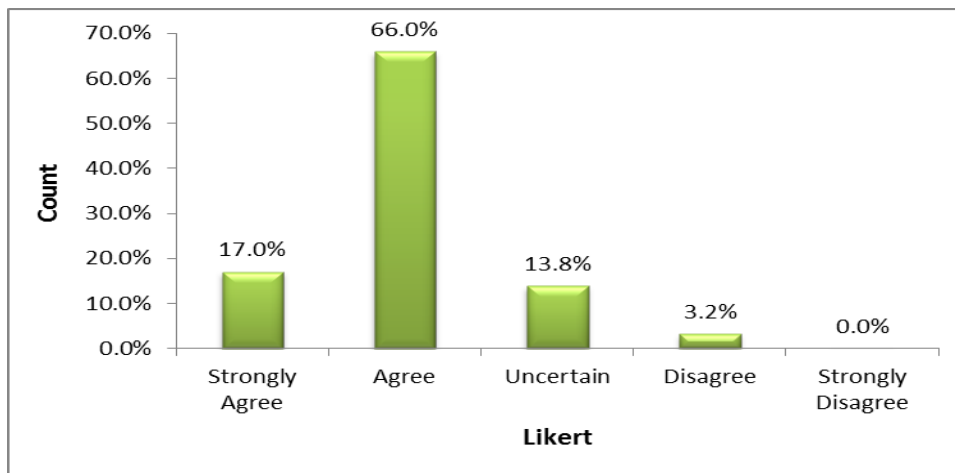
Figure 5.28 indicates that 66% of respondents agree and 17% strongly agree that positive norms (acceptable standards of behaviour) in their team do promote team effectiveness. Most respondents indicated that positive norms promote team effectiveness. This might be an indication that at Transnet Engineering teams are encourage to display good and acceptable standards of behaviour, and this might also indicate that teams have acceptable standards of behaviour.

Figure 5.29 High levels of trust in your team improve team effectiveness.
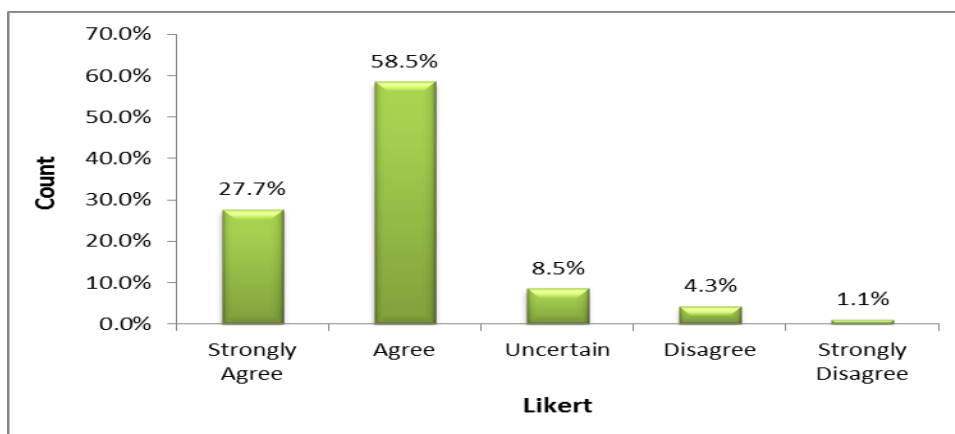
Figure 5.29 indicates that 58.5% of respondents agree and 27.7% strongly agree, whereas 4.3% disagree, 1.1% strongly disagree and 8.5% are uncertain that high levels of trust in their team improve team effectiveness.

The empirical results indicate that trust is an important factor in improving team effectiveness. According to Kreitner et al (2002:338) trust is a reciprocal faith in others' intentions and behaviours. Reciprocal means 'give and take' i.e. when management trust team members, team members will also trust management. It is important for both parties to show willingness to trust because this is another factor to improving team effectiveness.

Figure 5.30 Acceptance of diversity and avoidance of conflict in your team improves team effectiveness.
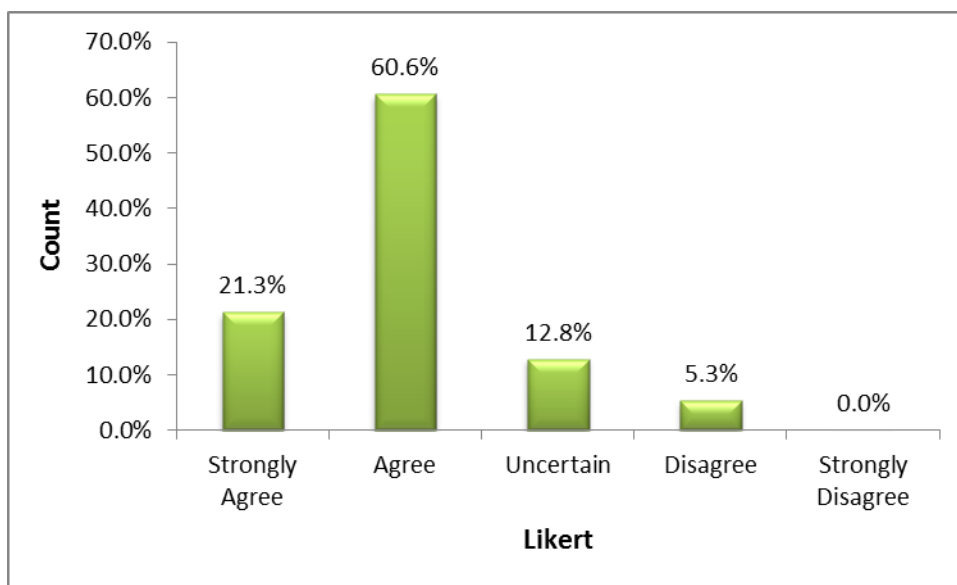
Figure 5.30 indicates that 60.6% of respondents agree and 21.3% strongly agree that acceptance of diversity and avoidance of conflict in their team improves team effectiveness. However, 5.3% disagree and 12.8% are uncertain. Empirical results indicated that acceptance of diversity and avoidance of conflict is an important factor to improving team effectiveness at Transnet Engineering. The literature study indicated that diversity and conflict are factors that can affect effectiveness of a team.

Figure 5.31 Your team is multicultural and diverse, and it has more miscommunication, mistrust and difficulty in reaching agreements.
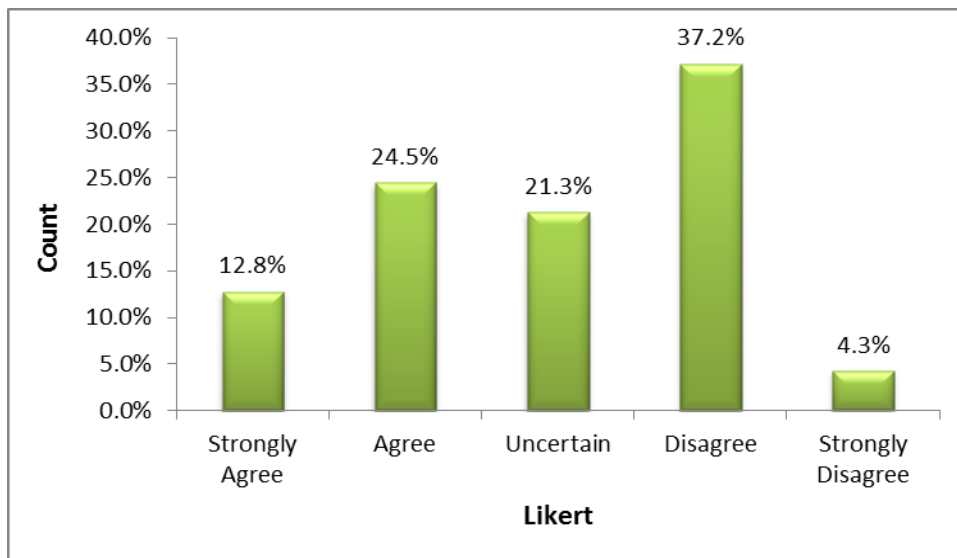
Figure 5.31 indicates that 37.2% of respondents disagree and 4.3% strongly disagree that their teams have more miscommunication, mistrust and difficulty in reaching agreements because of diversity. Results indicate that diversity and the fact that teams are multicultural is not that much of an issue although other respondents seem to indicate that it is an issue. This result also indicated that miscommunication, mistrust and difficulty in reaching agreements are not caused by multicultural teams.

In summary, the team context factors are displayed from Figure 5.24 to 5.31 and research indicates that most of the respondents agree that their team objectives are aligned to organisational strategy and objectives, roles and responsibilities are clearly defined, and work is fairly distributed in their team, team members have open communication and are encouraged to communicate freely, and no favouritism, discrimination or prejudice, or size of the team affects team effectiveness. The research also indicates that positive norms (acceptable standards of behaviour), high levels of trust in the team and acceptance of diversity and avoidance of conflict do promote team effectiveness. However, there is a split in responses about whether miscommunication, mistrust and difficulty in reaching agreements is because of diversity and multicultural teams.

5.4.4 Management support context

Figure 5.32 Management supports teams with conflict management.
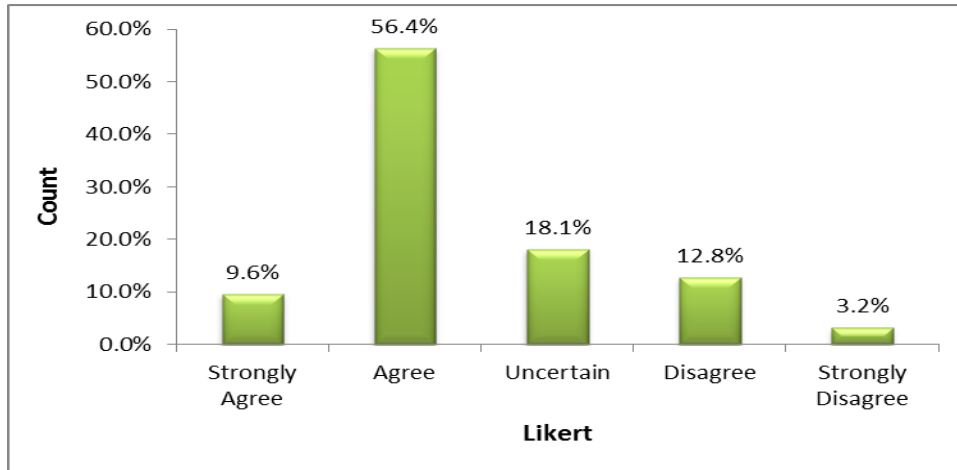
Figure 5.32 indicates that 56.4% of respondents agree and 9.6% strongly agree that management supports teams with conflict management. However, 18.1% are uncertain, 12.8% disagree and 3.2% strongly disagree. At Transnet Engineering, management supports teams with conflict management. This is in line with the results of the literature study. Management ought to be available to support teams so that teams can be effective. Nel et al (2011) mentioned that middle and upper management support and commitment is necessary for teams to operate effectively. A nurturing environment with a collaborative climate provides the support and encouragement that teams need for job performance.

Figure 5.33 Management supports teams with change management.
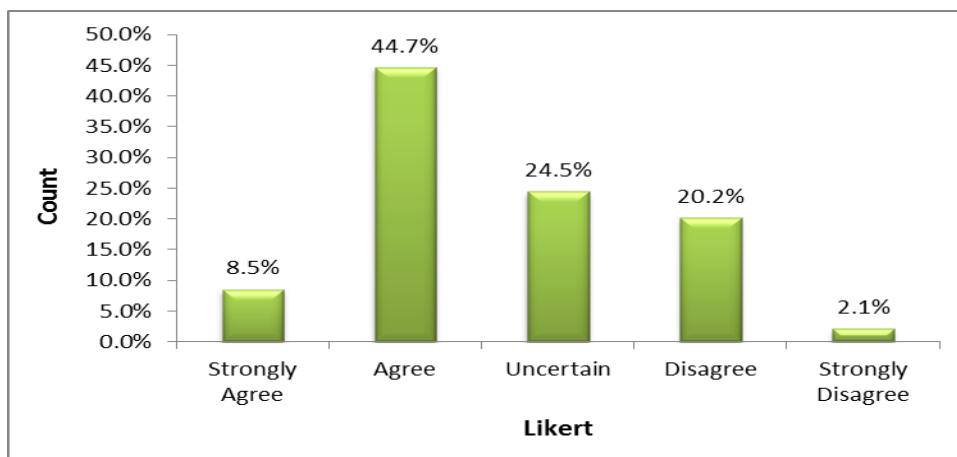
Figure 5.33 indicates that 44.7% of respondents agree, 8.5% strongly agree, 24.5% are uncertain, 20.2% disagree and 2.1% strongly disagree that management supports teams with change management. At Transnet Engineering, management supports teams with change management because, as indicated in the empirical results, most respondents agreed with the statement. However, the level of uncertainty and disagreements indicate that there is room for improvement to show management support of change management.

Figure 5.34 Management supports teams with talent management (identify skills gap and retention of talent).
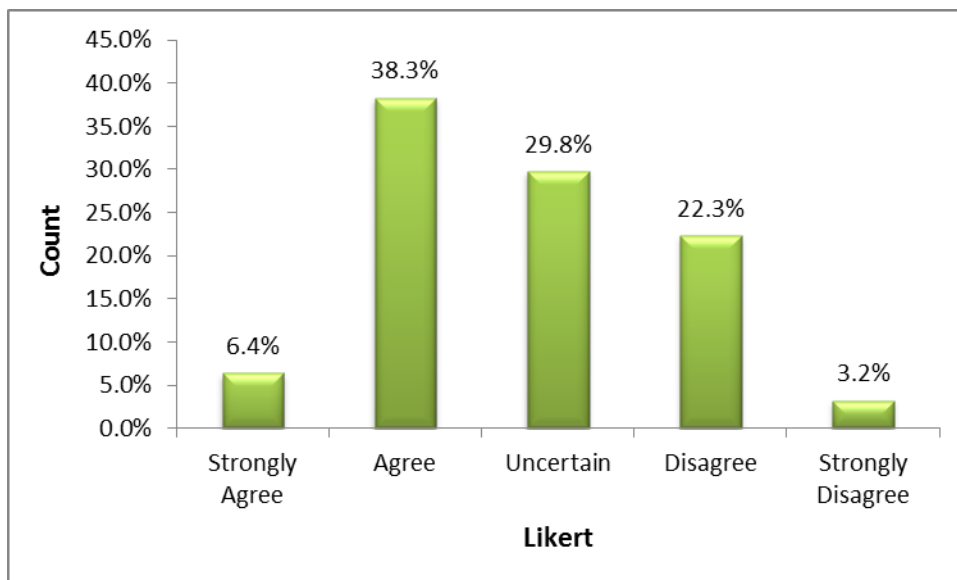
Figure 5.34 indicates that 38.3% of respondents agree, 6.4% strongly agree, 29.8% are uncertain, 22.3% disagree and 3.2% strongly disagree that management supports teams with talent management (to identify skills gap and retention of talent). At Transnet Engineering, management supports teams with talent management because, as indicated in the empirical results, most respondents agreed with the statement. However, the level of uncertainty and disagreements indicate that there is room for improvement to show management support of talent management.

Figure 5.35 Management supports teams with human resource management.
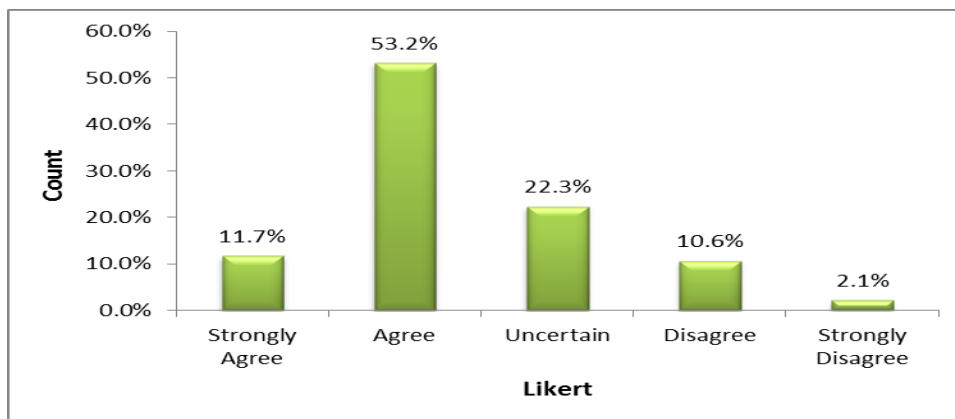
Figure 5.35 indicates that 53.2% of respondents agree, 11.7% strongly agree that management supports teams with human resource management. However, 22.3% are uncertain, 10.6% disagree and 2.1% strongly disagree. At Transnet Engineering, management supports teams with human resource management because, as indicated on the empirical results. most respondents agreed with the statement. Swanepoel et al (2008:19) state that working people are human beings that bring with them into the organisation all the qualities of homo sapiens. These include demographic variables such as age, gender, race, ethnic roots, cultural background and language. Management support is vital in assisting with the management of these different people for the teams to be effective. Management must develop policies and codes of conduct to govern these team members. Human resource management is a vital factor in improving team effectiveness.

Figure 5.36 below indicates that 51.1% of respondents agree and 12.8% strongly agree that managers support teams with performance management (goal setting and performance reviews). However, 9.6% disagree, 5.3% strongly disagree and 21.3% are uncertain. At Transnet Engineering, management supports teams with performance management because, as indicated on the empirical results, most respondents agreed with the statement. As indicated in the literature study, management must set targets, define what needs to be done, identify skills required to perform tasks, measure performance and reward good results.

Figure 5.36 Managers support teams with performance management (goal setting and performance reviews).
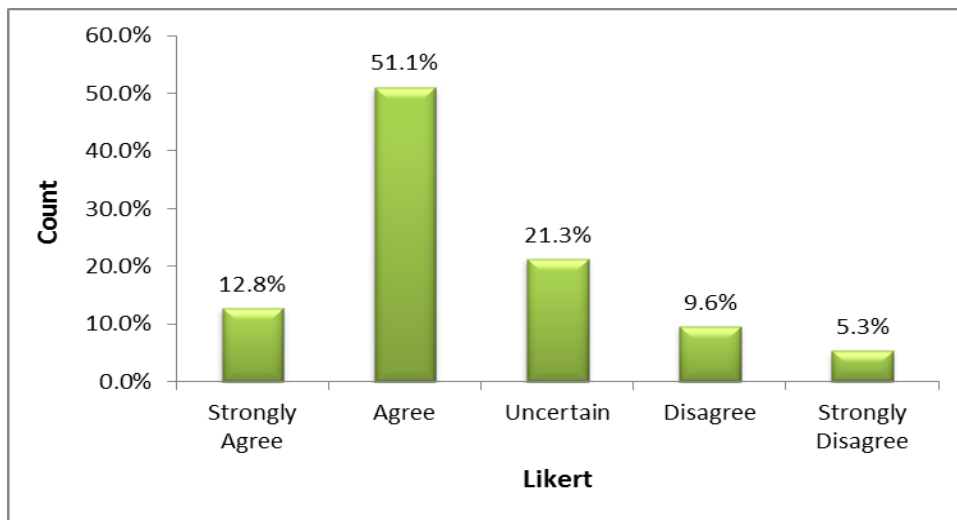
Figure 5.37 Managers support teams with team development dynamics, and guide teams to achieve team synergy.
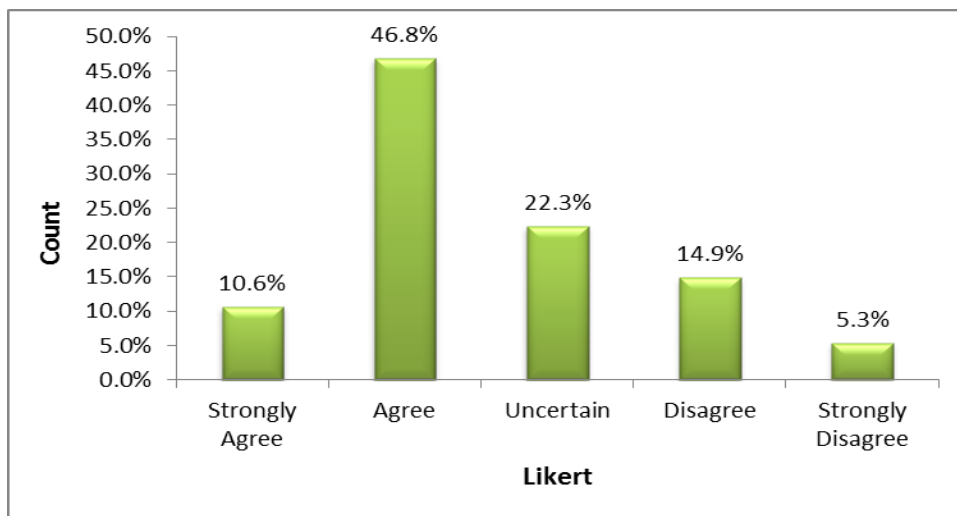
Figure 5.37 indicates that 46.8% of respondents agree and 10.6% strongly agree that managers support teams with team development dynamics, and guide teams to achieve team synergy. However, 22.3% are uncertain and 14.9% disagree. At Transnet Engineering, management supports teams with team development because, as indicated on the empirical results, most respondents agreed with the statement. However, the level of respondents that are uncertain and the respondents

that disagree indicate that more can still be done at Transnet Engineering to improve on team development support from management. As indicated in the literature study, the wrong mix of team members can affect team effectiveness. Therefore, management must help with team development.

Figure 5.38 Managers support teams with strategic management (alignment of corporate and team vision).
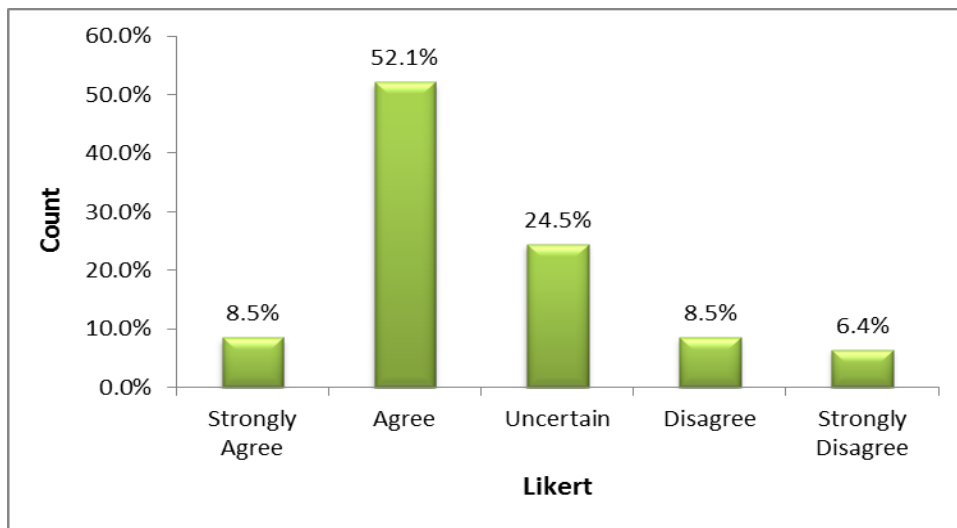
Figure 5.38 indicates that 52.1% of respondents agree and 8.5% strongly agree that managers support teams with strategic management (alignment of corporate and team vision). However, 8.5% disagree, 6.4% strongly disagree and 24.5% are uncertain. The empirical results indicate that managers at Transnet Engineering support teams with strategic management because most respondents agreed with the statement. As indicated in the literature study, corporate strategy and goals should be aligned to team objectives and goals.

Figure 5.39 Foremen, supervisor or business manager support teams to perform effectively.
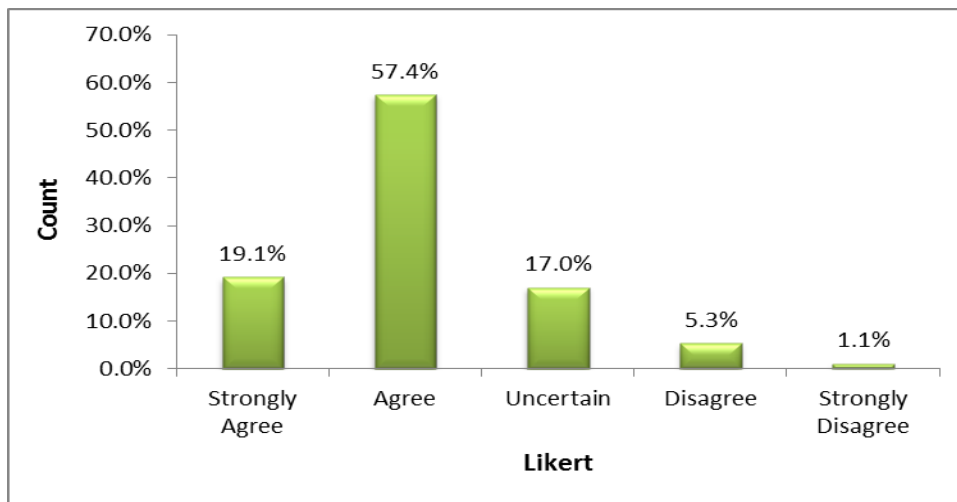
Figure 5.39 indicates that 57.4% of respondents agree, 19.1% strongly agree, 5.3% disagree, 1.1% strongly disagree and 17.0% are uncertain that foremen, supervisor or business manager supports teams to perform effectively. Overall, the empirical results indicate that foremen, supervisor or business manager support teams to perform effectively. Teams are more effective if management provides the necessary support. Management support for teams is positively related to the task performance of teams, member satisfaction with the team, team cohesiveness, commitment to the team, and team spirit and trust. An organisational culture that clearly supports teams fosters more effective teams (Thomas, Ravlin and Barry 2000).

In summary, the research conducted on management support factors is displayed in Figures 5.32 to 5.39, and reveals that most respondents agree that foremen, supervisor or business manager support teams to perform effectively and management supports teams with human resource management, with performance management (goal setting and performance reviews), conflict management and strategic management (alignment of corporate and team vision). However, a significance number of respondents are split between uncertainty and disagree with regards to whether management supports teams with talent management (to identify skills gap and retention of talent), and team development dynamics, and whether management guides teams to achieve team synergy.

5.4.5 Team effectiveness context

Figure 5.40 Your team is able to achieve good results.
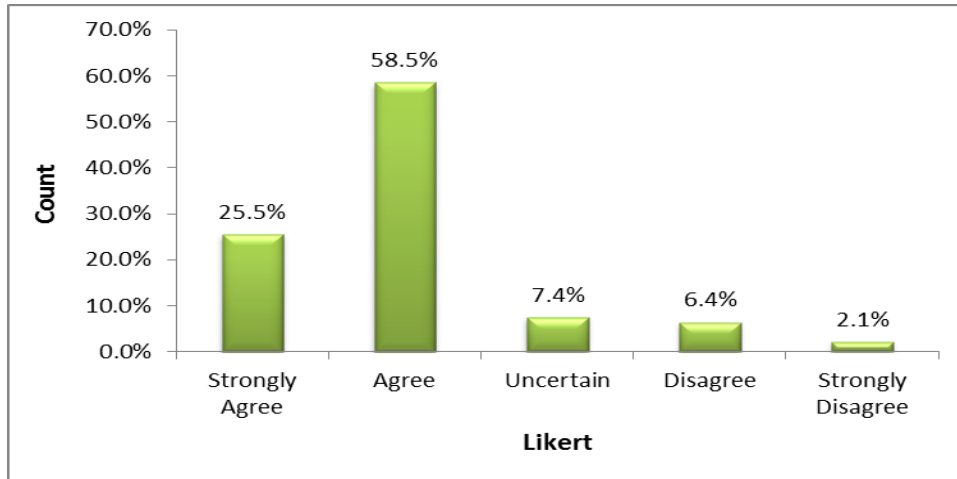
Figure 5.40 indicates that 58.5% respondents agree, 25.5% strongly agree, 6.4% disagree, 2.1% strongly disagree and 7.4% are uncertain that their team is able to achieve good results. The empirical results indicate that teams at Transnet Engineering achieve good results.

Figure 5.41 Your team is able to solve problems.
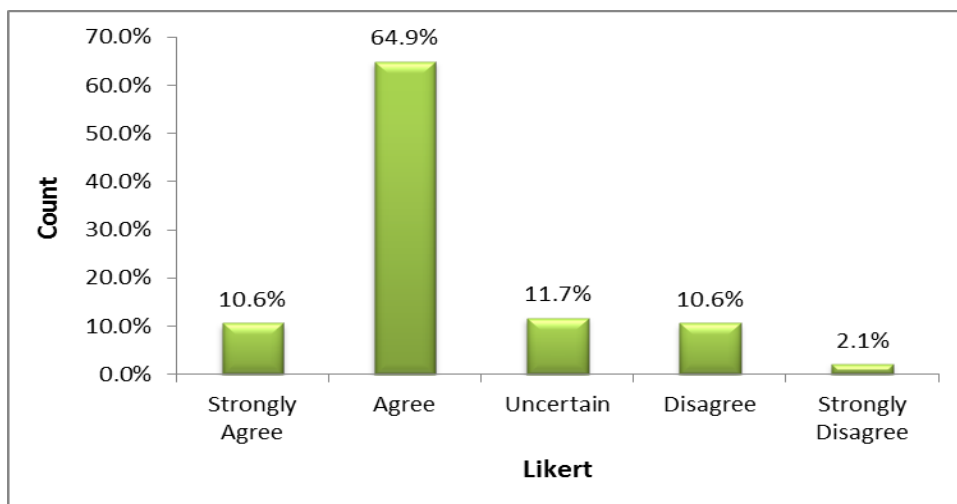
Figure 5.41 indicates that 64.9% of respondents agree, 10.6% strongly agree, 10.6% disagree, 2.1% strongly disagree and 11.7% are uncertain that their team is able to

solve problems. The empirical results indicate that generally teams at Transnet Engineering are able to solve problems.

Figure 5.42 Your team easily adapts to new or increased demand (customer demands and/or management demands).
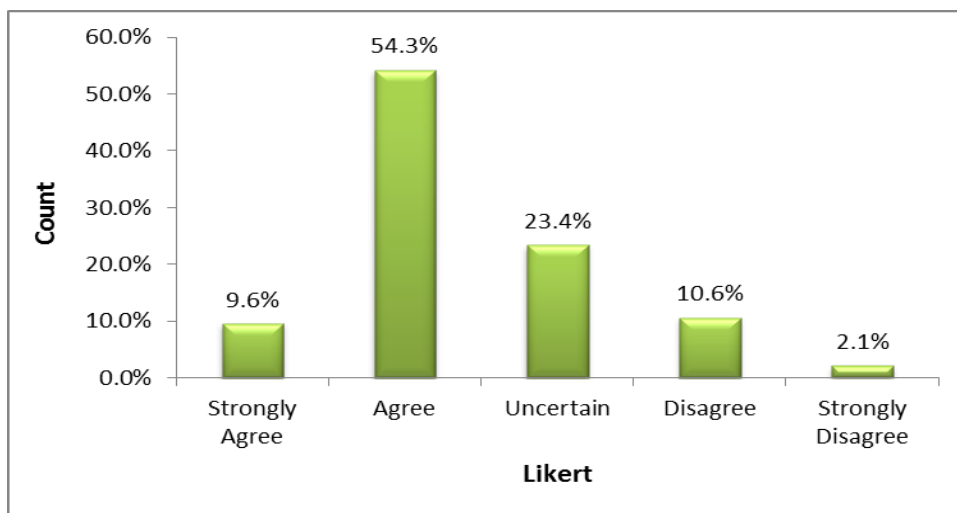
Figure 5.42 indicates that 54.3% of respondents agree, 9.6% strongly agree, 10.6% disagree, 2.1% strongly disagree and 23.4% are uncertain that their team easily adapts to new or increased demand (customer demands and/or management demands). The empirical results indicate that generally teams at Transnet Engineering easily adapt to increased demand (customer demands and/or management demands).

Figure 5.43 Your team is committed to achieving team goals and helping Transnet Engineering succeed.
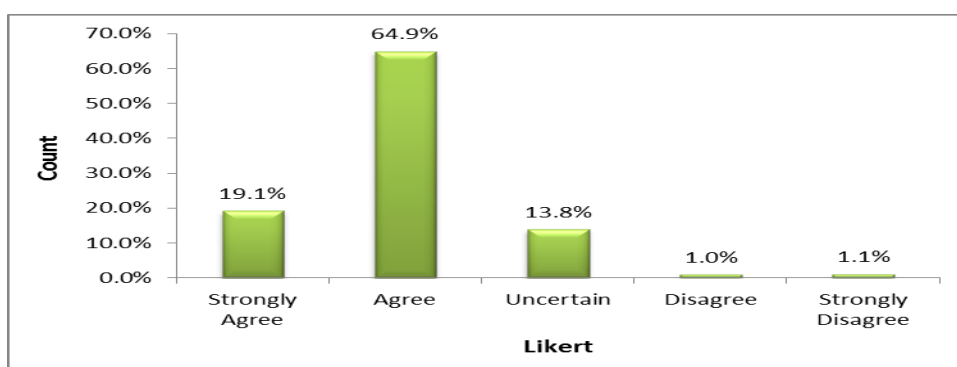
Figure 5.43 indicates that 64.9% respondents agree, 19.1% strongly agree, 1% disagree, 1.1% strongly disagree and 13.8% are uncertain that their team is committed to achieving team goals and helping Transnet Engineering succeed. From the empirical study, the researcher deduced that teams at Transnet Engineering are committed to achieving team goals and helping Transnet Engineering succeed. The literature study indicated that team members need to know and understand what has to be done by the team. The goal has to be tied to specific objectives that lead the team to achieve its goal. Also, team members should be committed to the goal and should participate in its development. The researcher concluded that, at Transnet Engineering, team members understand goals and objectives and are committed to achieving these goals, and that is why the results also indicate that these teams are effective in achieving results, solving problems and are creative and innovative.

Figure 5.44 Your team is creative and innovative.
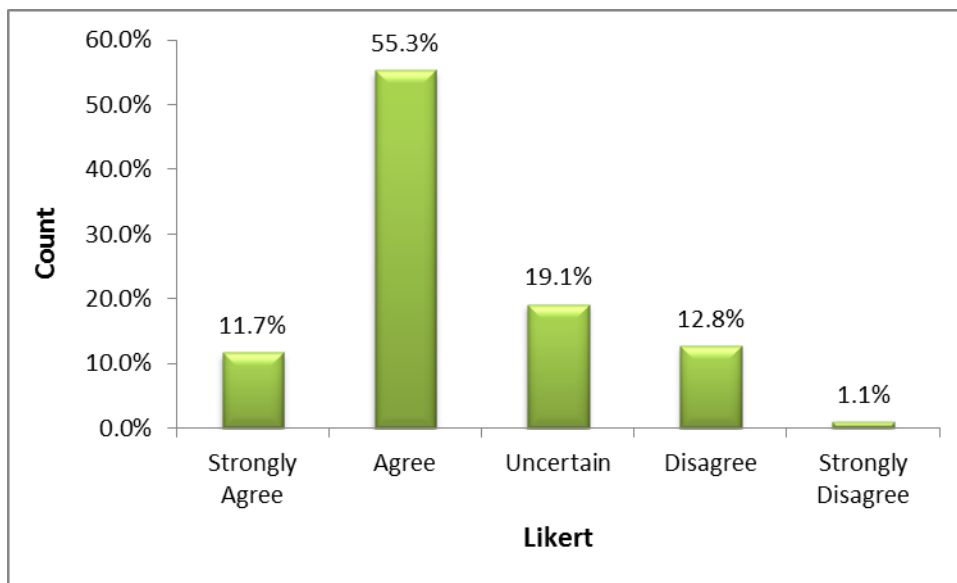
Figure 5.44 indicates that 55.3% of respondents agree, 11.7% strongly agree, 12.8% disagree, 1.1% strongly disagree and 19.1% are uncertain that their team is creative and innovative. From the empirical study, the researcher deduced that teams at Transnet Engineering are creative and innovative.

Figure 5.45 Your team has good interpersonal and inter business unit relations and communication.
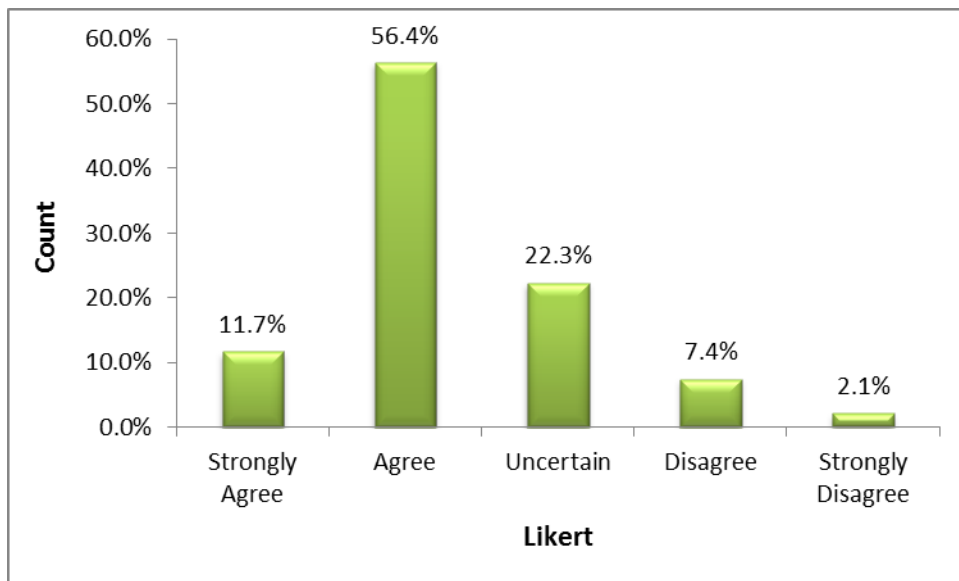
Figure 5.45 indicates that 56.4% respondents agree, 11.7% strongly disagree, 7.4% disagree, 2.1% strongly disagree and 22.3% are uncertain that their team has good interpersonal and inter business unit relations and communication. At Transnet Engineering, teams have good interpersonal and inter business unit relations and communication. Nel et al (2011:348) state that the only way through which we can establish and maintain relationships with other people is through communication. The more easily people in a group communicate with each other the more cohesion will be experienced.

Figure 5.46 Teams at Transnet Engineering are involved in department or organisation decision making.
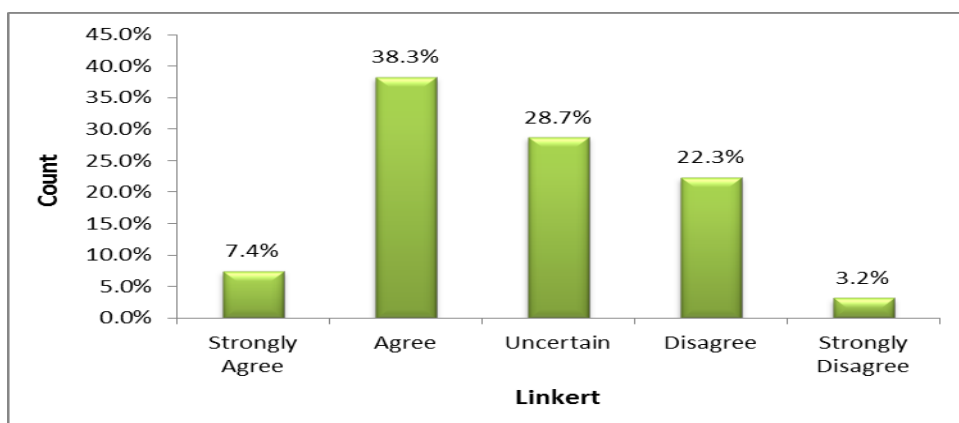
Figure 5.46 indicates that 38.3% of respondents agree, 7.4% strongly disagree, 22.3% disagree, 3.2% strongly disagree and 28.7% are uncertain that teams at Transnet Engineering are involved in department or organisation decision making. Looking at the results, the researcher concludes that at Transnet Engineering teams are not that involved in department or organisation decision making. This the researcher concludes because of the number of respondents who disagree, strongly disagree and are uncertain.

Nel, et al (2011) state that teams are provided with a certain level of authority and empowerment with boundaries so as to improve the team's efficiency and effectiveness. Team decision making authority comes with accountability and responsibility; however, teams should not be hammered if things go wrong but should be advised on new approach and method.

**Figure 5.47** Team performance at Transnet Engineering is measured.
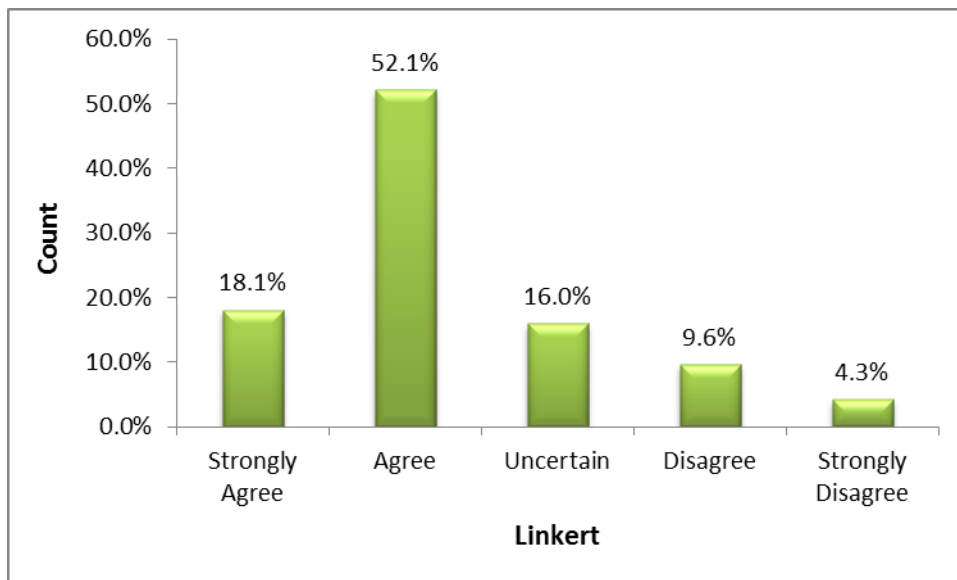
Figure 5.47 indicates that 52.1% of respondents agree, 18.1% strongly agree, 9.6% disagree, 4.3% strongly disagree and 16% are uncertain that team performance at Transnet Engineering is measured.

In summary, the research conducted on team effectiveness context is displayed in figures 5.40 to 5.47 and reveals that most of the respondents agree that their team is able to achieve good results, able to solve problems, the team is creative and innovative, the team easily adapts to new or increased demand (customer demand and/or management demand), and the team is committed to achieving team goals and to helping Transnet Engineering succeed. The respondents agree that their team has good interpersonal and inter business unit relations and communication, although some respondents disagree and are uncertain. The research also points out that there is a split in respondents about whether teams in Transnet Engineering are involved in department or organisation decision making as most respondents disagree and are uncertain. The research indicates that most respondents agree that team performance at Transnet Engineering is measured. Team work has been introduced in many organizations globally to increase performance levels and employee and customer satisfaction; however, these goals can be achieved only if attention is first focused on the internal functioning of groups and teams. Quality within the team must first be achieved before quality in the organization can be achieved.

5.5 RELIABILITY ANALYSIS

Cronbach's alpha was used to measure the reliability and consistency of the questionnaire in relation to factors and team effectiveness. Cronbach's alpha is an index of reliability associated with the variation accounted for by the true score of the underlying construct. Construct is the hypothetical variables (organizational context factors, individual context factors, team context factors, management support factors and team effectiveness) that are being measured (Cooper and Schindler, 2011:216-217). More specific, Cronbach's alpha measures how well a set of items (or variables) measures a single uni-dimensional latent construct. A reliability test (Cronbach's alpha) was done on the statements (items) made for measuring the organizational context factors, individual context factors, team context factors, management support factors and team effectiveness factors.

Cronbach (1951) and Nunnally (1978), cited in Li, Liu, & Zhao (2006), note that typically, reliability coefficients of 0.70 or higher are considered adequate.

Thus the suggested minimum cut-off value for Cronbach's Alpha is 0.70 and increasing the value of Cronbach's Alpha is dependent upon a number of variables in the scale. A Cronbach's alpha coefficient of 0.70 or above is considered acceptable in most cases, will prove a questionnaire to be reliable and consistent, and means a good internal consistency of the variables in the scale.

According to George and Mallery (2003), cited in Gliem & Gliem (2003), the following Table 5.1 depicting rule of thumb for Cronbach's Alpha was provided.

Table 5.1: Cronbach's Alpha rule of thumb adapted from George & Malley (2003)

Cronbach's Alpha	α ≥ 0.9	0.8 ≤ α < 0.9	0.7 ≤ α < 0.8	0.6 ≤ α < 0.7	α < 0.5
Internal consistency	Excellent	Good	Acceptable	Questionable	Poor

5.5.1 Organizational context factors reliability

The research instrument measured 7 factors under organizational context and the results are indicated below:

Table 5.2 Summarised Cronbach's alpha coefficient for the 7 organizational context factors

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.816	0.816	7

The questionnaire proves to be reliable and consistent when measuring organizational context factors in relation to team effectiveness.

Table 5.3 Cronbach's alpha coefficient if item is deleted from organizational context factors.

Statements	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
1.1 Transnet Engineering provides necessary resources for teams to operate effectively.	0.59	0.439	0.785
1.2 Transnet Engineering vision, mission, values and strategy provide direction for functioning of teams.	0.582	0.408	0.787
1.3 Organisational culture at Transnet Engineering supports team work, collaboration, knowledge sharing and excellence.	0.746	0.633	0.755
1.4 Transnet Engineering leadership (EXCO) nurtures and helps teams to be effective.	0.604	0.497	0.784
1.5 A good reward and recognition system for effective teams exists at Transnet Engineering.	0.454	0.261	0.81
1.6 Transnet Engineering does give training opportunities to enhance skill, knowledge, experience and competence of team members.	0.542	0.322	0.794
1.7 Transnet Engineering does inform employees about policies, organisational changes, strategies, and new developments that affect employees. Decisions and feedback is provided about organisation's performance.	0.379	0.21	0.819

Table 5.3 indicates that if any item 1.1 to 1.7 of the questionnaire is deleted, Cronbach's alpha will still be above the acceptable 0.70, which means the questionnaire will still remain reliable and consistent. The corrected item total correlations are all reasonably high (above 0.379) confirming that all the questions should be kept.

5.5.2 Individual context factors reliability testing

The research instrument measured 8 factors under individual context and the results are indicated below:

Table 5.4 Summarised Cronbach's alpha coefficient for the 8 individual context factors

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.65	0.667	8

Cronbach's alpha coefficient is below 0.70 which proved the questionnaire not to be reliable and consistent when measuring the individual context factors. There is inconsistency in answering these factors, perhaps the respondents lacked understanding of the context of the questions hence the Cronbach's alpha is below an acceptable 0.70. These individual context factors will be rearranged into different factor groups after the factor analysis is conducted below.

Table 5.5 Cronbach's alpha coefficient if item is deleted from individual context factors.

Statements	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
2.1 Differences in age, gender and race of team members affect your team effectiveness.	0.358	0.364	0.619
2.2 Diverse cultural background and language of team members affects your team effectiveness.	0.175	0.364	0.668
2.3 Individuals in your team that have the right skills, knowledge, abilities, aptitude and competencies make your team effective.	0.422	0.511	0.601
2.4 Individuals with positive attitude in your team enhance teamwork and team effectiveness.	0.482	0.536	0.587
2.5 A mentally, physically and emotionally able team member performs at the required level of performance.	0.439	0.282	0.595
2.6 An individual in your team who feels unhappy and is always complaining affects your team effectiveness.	0.37	0.23	0.612
2.7 Individuals in your team that seek more learning, growth and development have a positive impact on your team effectiveness.	0.189	0.209	0.654

2.8 Individuals bring their effort to achieve a collective goal and that improves team effectiveness.	0.387	0.312	0.612

Table 5.5 indicates that deleting any statement 2.1 to 2.8 of the questionnaire will not improve Cronbach's alpha coefficient to 0.70 or above, therefore deleting an item will not improve reliability of the factors under individual context, and factor analysis might be required to redistribute these statements into other groups of factors.

Statement 2.2 and 2.7 have low (less than 0.19) corrected item total correlation, removing one at a time does not help - perhaps the removal of both might increase Cronbach's alpha, which can be checked in the factor analysis.

5.5.3 Team context factor's reliability

The research instrument measured 8 factors under team context and the results are indicated below:

Table 5.6 Summarised Cronbach's alpha coefficient for the 8 team context factors

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.714	**0.75**	**8**

The questionnaire proves to be reliable and consistent when measuring team context factors in relation to team effectiveness. Cronbach's alpha coefficient is above 0.70.

Table 5.7 Cronbach's alpha coefficient if item is deleted from team context factors.

Statements	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
3.1 Your team objectives are aligned to organisational strategy and objectives.	0.539	0.468	0.666
3.2 Roles and responsibilities are clearly defined, and work is fairly distributed in your team.	0.395	0.44	0.688
3.3 Your team members have open communication and are encouraged to communicate freely, no favouritism, discrimination or prejudice.	0.51	0.35	0.664
3.4 Size of your team affects team effectiveness.	0.306	0.159	0.713
3.5 Positive norms (acceptable standards of behaviour) in your team do promote team effectiveness.	0.496	0.364	0.673
3.6 High levels of trust in your team improves team effectiveness.	0.511	0.358	0.665
3.7 Acceptance of diversity and avoidance of conflict in your team improves team effectiveness.	0.516	0.406	0.666
3.8 Your team is multicultural and diverse, and it has more miscommunication, mistrust and difficulty in reaching agreements.	0.193	0.085	0.748

Table 5.7 indicates that if items 3.1, 3.2, 3.3, 3.5, 3.6 and 3.7 of the questionnaire are deleted, Cronbach's alpha will be below 0.70, which means that the questionnaire will be unreliable and inconsistent in relation to team effectiveness. Item 3.4 and 3.8 will increase Cronbach's alpha to above acceptable 0.70 if deleted.

5.5.4 Management support context factor's reliability

The research instrument measured 8 factors under management support context and the results are indicated below:

Table 5.8 Summarised Cronbach's alpha coefficient for the 8 management support context factors

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.927	**0.927**	**8**

The questionnaire proves to be reliable and consistent when measuring management support factors. Cronbach's alpha coefficient is above 0.70 which is excellent.

Table 5.9 Cronbach's alpha coefficient if item is deleted from team context factors.

Statements	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
4.1 Management supports teams with conflict management.	0.647	0.602	0.926
4.2 Management supports teams with change management.	0.779	0.73	0.916

4.3 Management supports teams with talent management (identify skills gap and retention of talent).	0.696	0.574	0.922
4.4 Management supports teams with human resource management.	0.759	0.605	0.917
4.5 Managers support teams with performance management (goal setting and performance reviews).	0.821	0.759	0.912
4.6 Managers support teams with team development dynamics, and guide teams to achieve team synergy.	0.819	0.79	0.912
4.7 Managers support teams with strategic management (alignment of corporate and team vision).	0.833	0.775	0.911
4.8 A foreman, supervisor or business manager supports teams to perform effectively.	0.659	0.502	0.924

Table 5.9 indicates that if any item 4.1 to 4.8 of the questionnaire is deleted, Cronbach's alpha will still be above acceptable 0.70, which means the questionnaire will still remain reliable and consistent.

5.5.5 Team effectiveness context factor's reliability

The research instrument measured 8 factors under team effectiveness context and the results are indicated below:

Table 5.10 Summarised Cronbach's alpha coefficient for the 8 team effectiveness factors

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.845	**0.85**	**8**

The questionnaire proves to be reliable and consistent when measuring team effectiveness factors because Cronbach's Alpha is above acceptable 0.70.

Table 5.11 Cronbach's alpha coefficient if item is deleted from team effectiveness factors.

Statements	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
5.1 Your team is able to achieve good results.	0.452	0.481	0.842
5.2 Your team is able to solve problems.	0.6	0.496	0.824
5.3 Your team easily adapts to new or increased demand (customer demands and/or management demands).	0.6	0.408	0.824
5.4 Your team is committed to achieving team goals and helping Transnet Engineering succeed.	0.637	0.502	0.823
5.5 Your team is creative and innovative.	0.638	0.495	0.819

5.6 Your team has good interpersonal and inter business unit relations and communication.	0.695	0.564	0.812
5.7 Teams at Transnet Engineering are involved in department or organisation decision making.	0.558	0.485	0.83
5.8 Team performance at Transnet Engineering is measured.	0.51	0.34	0.837

Table 5.11 indicates that if any item 5.1 to 5.8 of the questionnaire is deleted, Cronbach's alpha will still be above acceptable 0.70 which means the questionnaire will still remain reliable and consistent. The study indicates that all these statements 5.1 to 5.8 can remain because there is consistency of the variables within the scale.

5.6 FACTOR ANALYSIS

A factor analysis was performed on the statements of the questionnaire to investigate the factor structure underlying the set of statements that represent the measurements in the questionnaire. The research instrument has 5 categories (organizational context, individual context, team context, management support context and team effectiveness context). The results of the factor analysis suggest that the statements of the questionnaire can be arranged as follows. See tables 5.12 to 5.17.

Table 5.12 Revised management support statement structure

Statements	Factor Loading
4.7 Managers support teams with strategic management (alignment of corporate and team vision).	0.837
4.5 Managers support teams with performance management (goal setting and performance reviews).	0.835
4.6 Managers support teams with team development dynamics, and guide teams to achieve team synergy.	0.811
4.2 Management supports teams with change management.	0.799
4.4 Management supports teams with human resource management.	0.766
4.1 Management supports teams with conflict management.	0.728
4.8 A foreman, supervisor or business manager supports teams to perform effectively.	0.708
4.3 Management supports teams with talent management (identify skills gap and retention of talent).	0.683

Table 5.12 indicates that the statements under management support context of the questionnaire have been retained as they were; all statements from 4.1 to 4.8 are retained. The statements are retained because there is strong positive correlation.

Table 5.13 Revised team effectiveness statement structure

Statements	Factor Loading
5.3 Your team easily adapts to new or increased demand (customer demands and/or management demands)	**0.798**
5.6 Your team has good interpersonal and inter business unit relations and communication.	**0.67**
5.4 Your team is committed to achieving team goals and help Transnet Engineering succeed.	**0.588**
5.2 Your team is able to solve problems.	**0.587**
5.7 Teams at Transnet Engineering are involved in department or organisation decision making.	**0.583**
5.5 Your team is creative and innovative.	**0.577**

Table 5.13 indicates that 6 of the statements under team effectiveness context of the questionnaire have been retained and 2 have been removed: the statements retained show strong positive correlation and the 2 removed showed strong negative correlation. Statement 5.1 and 5.8 are removed from the team effectiveness context of the questionnaire.

Table 5.14 Revised individual context statement structure

Statements	Factor Loading
2.4 Individuals with positive attitude in your team enhance teamwork and team effectiveness.	**0.776**
2.3 Individuals in your team that have the right skills, knowledge, abilities, aptitude and competencies make your team effective.	**0.686**
2.8 Individuals bring their effort to achieve a collective goal and that improves team effectiveness.	**0.669**
5.1 Your team is able to achieve good results.	**0.66**

Table 5.14 indicates that from the original individual context factors, statements 2.1, 2.2, 2.5, 2.6 have been removed. Only 2.4, 2.3 and 2.8 are retained with the addition of statement 5.1. This shuffling is as a result of Cronbach's alpha which was less than 0.70 as indicated on table 5.4.

Table 5.15 Revised team context statement structure

Statements	Factor Loading
2.1 Differences in age, gender and race of team members affect your team effectiveness.	**0.834**
2.2 Diverse cultural background and language of team members affects your team effectiveness.	**0.799**

Statement	Factor Loading
3.4 Size of your team affects team effectiveness.	0.776
2.7 Individuals in your team that seek more learning, growth and development have a positive impact on your team effectiveness.	0.756
2.6 An individual in your team who feels unhappy and is always complaining affect your team effectiveness.	0.612
3.8 Your team is multicultural and diverse, and it has more miscommunication, mistrust and difficulty in reaching agreements.	0.767

Table 5.15 indicates that a combination of statements from the original individual context factors and team context factors are mixed to form the new factor structure which is named by the researcher as a revised team context statement structure.

Table 5.16 Revised organisational context statement structure

Statements	Factor Loading
3.5 Positive norms (acceptable standards of behaviour) in your team do promote team effectiveness.	0.752
2.5 A mentally, physically and emotionally able team member performs at the required level of performance.	0.686
3.7 Acceptance of diversity and avoidance of conflict in your team improves team effectiveness.	0.553

3.6 High levels of trust in your team improve team effectiveness.	**0.489**
1.6 Transnet Engineering does give training opportunities to enhance skill, knowledge, experience and competence of team members.	**0.783**
1.1 Transnet Engineering provides necessary resources for teams to operate effectively.	**0.678**
1.5 A good reward and recognition system for effective teams exists at Transnet Engineering.	**0.488**
1.2 Transnet Engineering vision, mission, values and strategy provide direction for functioning of teams.	**0.723**
1.4 Transnet Engineering leadership (EXCO) nurtures and helps teams to be effective.	**0.56**
1.3 Organisational culture at Transnet Engineering supports team work, collaboration, knowledge sharing and excellence.	**0.535**

Table 5.16 indicates that a combination of statements from the original organizational context factors (1.1, 1.2, 1.3, 1.4, 1.5 and 1.6) and team effectiveness factors (3.5, 3.6 and 3.7) are mixed to give strong positive correlation.

Therefore, from the results of the factor analysis the researcher concluded that for future research the questionnaire can be re-structured according to the new categories indicated on table 5.12 to 5.16.

5.7 CORRELATION ANALYSIS

Chi- square (two-sample) tests were performed comparing the statement of factors under each category of the questionnaire with respect to the biographical variables. Table 5.19 below shows the statistical significance results.

The Chi-square (two sample) tests are probably the most widely used nonparametric test of significance that is useful for tests involving nominal data, but it can be used for higher scales as well, like cases where persons, events or objects are grouped in two or more nominal categories such as 'yes-no' or cases A, B, C, D. The technique is used to test for significance differences between the observed distribution of data among categories and the expected distribution based on the null hypothesis. It has to be calculated with actual counts rather than percentages (Cooper & Schindler, 2001:499) cited by Solomon (2008:94).

SPSS computes a P-value (probability value) that measures statistical significance, which automatically incorporates the chi-square values. Results were regarded as significant if the p-values are smaller than 0.05, because this value presents an acceptable level on 95% confidence interval ($p \leq 0.05$). The p-value is the probability of observing a sample value as extreme as, or more extreme than the value actually observed, given that the null hypothesis is true. This area represents the probability of a Type 1 error that must be assumed if the null hypothesis is rejected (Cooper & Schindler, 2001:509) cited by Solomon (2008:94).

Solomon (2008:94) further states that the p-value is compared to the significance level (α) and on this basis, the null hypothesis is either rejected or not rejected. If the p-value is less than the significance level, the null hypothesis is rejected (if p value is $< \alpha$). If the p-value is greater than or equal to the significance level, the null hypothesis is not rejected (if p value $\geq \alpha$). If the p-value is less than 0.05, the null hypothesis will be rejected. The p value is determined by using the standard normal distribution.

Table 5.17 Correlation results for statistical significance comparisons

Questionnaire Statements	What is your gender?	In which operating business do you work?	What is your position?	How many employees do you manage / supervise?	For how many years have you been in management or supervisory position?	What is your age?	What is your race?	What is your highest qualification?
1.1	0.728	0.746	0.235	0.301	0.154	0.112	0.462	0.548
1.2	0.233	0.432	0.206	0.994	.014(*)	0.747	0.2	0.591
1.3	0.850	0.769	0.603	0.866	0.632	0.641	0.427	0.73
1.4	*0.606*	*0.110*	*0.266*	*0.604*	*0.944*	*0.983*	*0.981*	*0.945*
1.5	0.506	0.132	0.535	0.074	0.060	0.112	0.192	0.187
1.6	0.297	0.603	0.574	0.295	0.899	0.076	0.857	0.336
1.7	0.172	0.757	0.096	0.736	0.582	0.153	0.772	0.574
2.1	0.079	0.665	0.234	0.682	0.301	0.849	0.549	0.347
2.2	0.463	0.571	0.307	0.541	0.397	0.893	0.413	0.905
2.3	0.621	0.171	0.936	0.743	0.165	0.403	0.140	0.188
2.4	0.913	0.26	0.636	0.544	0.078	0.541	0.139	0.159
2.5	0.751	.019(*)	0.48	0.509	0.197	0.366	0.166	.006(*)
2.6	0.880	0.727	0.919	0.701	0.932	0.594	0.945	0.811
2.7	0.877	0.156	0.071	0.914	0.631	0.057	0.368	0.547
2.8	0.898	0.717	0.983	0.951	0.812	0.055	0.928	.000(*)
3.1	0.244	0.412	0.587	0.957	.000(*)	0.711	0.636	0.067
3.2	0.551	0.547	0.355	0.581	.021(*)	0.766	0.462	0.331
3.3	0.201	0.914	0.879	0.997	0.455	0.830	0.564	0.916
3.4	0.978	0.974	0.368	0.468	0.708	0.707	0.894	0.744
3.5	0.261	0.730	0.146	0.558	0.932	0.534	0.450	0.662
3.6	0.681	.001(*)	0.374	0.992	0.551	0.624	0.747	0.075
3.7	0.449	0.531	0.660	0.694	0.578	0.704	0.894	0.344
3.8	0.438	0.715	0.699	0.559	0.284	0.940	0.896	0.200

Questionnaire statements	What is your gender?	In which operating business do you work?	What is your position?	How many employees do you manage / supervise?	For how many years have you been in management or supervisory position?	What is your age?	What is your race?	What is your highest qualification?
4.1	0.804	0.637	0.383	0.540	0.906	0.885	0.666	0.863
4.2	0.491	0.873	0.458	0.459	0.432	0.627	0.116	0.816
4.3	0.479	0.552	.022(*)	0.942	0.597	0.749	0.780	0.375
4.4	0.358	0.316	0.565	0.968	0.858	0.814	0.832	0.598
4.5	0.947	0.559	0.360	0.893	0.292	0.347	0.466	0.706
4.6	0.643	0.726	0.628	0.707	0.148	0.579	0.161	0.733
4.7	0.994	0.397	0.218	0.888	.020(*)	0.750	0.099	0.732
4.8	0.749	0.976	0.873	0.321	0.423	0.979	0.435	0.899
5.1	0.739	.001(*)	0.111	0.599	.016(*)	0.936	0.372	0.264
5.2	0.444	0.237	0.911	0.337	0.119	0.844	0.737	0.427
5.3	0.368	0.510	0.873	0.761	0.609	0.625	0.798	0.928
5.4	0.904	0.664	0.736	0.972	0.204	0.923	0.117	0.324
5.5	0.410	.002(*)	0.854	0.188	0.506	0.893	0.536	0.678
5.6	0.054	0.272	0.795	0.896	0.327	0.964	0.822	0.289
5.7	0.537	0.880	0.383	0.683	0.213	0.450	0.643	0.432
5.8	0.874	0.534	0.371	1.00	0.140	0.335	0.868	0.568

The values marked in yellow on table 5.17 are below p-value of 0.05 which indicated that there is correlation between the biographical variable and the statement in question. The test revealed that there is correlation between the years the respondent has in management or supervisory position with statement 1.2 (Transnet Engineering vision, mission, values and strategy provide direction for functioning of teams). The p-value is 0.014 which is less than 0.05. There is a difference in responses between the respondents who have been in the position for longer, and the respondents who have been in position for lesser years.

The test results also revealed that there is correlation between the respondent's operating business they worked in and statement 2.5 (A mentally, physically and emotionally able team member performs at the required level of performance). The p-value is 0.019 which is less than 0.05 indicating that the null hypothesis can be rejected because there is correlation.

There is also correlation between the respondents' highest school qualification they have, statement 2.5 (A mentally, physically and emotionally able team member performs at the required level of performance) and 2.8 (Individuals bring their effort to achieve a collective goal and that improves team effectiveness.). The p-values are 0.006 and 0.000 respectively which are less than 0.05 indicating that null hypothesis can be rejected because there is correlation.

Results also indicated that there is correlation between the years the respondent has been in management or supervisory position with statement 3.1 (Your team objectives are aligned to organisational strategy and objectives), statement 3.2 (Roles and responsibilities are clearly defined, and work is fairly distributed in your team), statement 4.7 (Managers support teams with strategic management), and statement 5.1 (Your team is able to achieve good results). The p values are 0.000, 0.021, 0.020 and 0.016 respectively which are below 0.05. The null hypothesis which claims there is no correlation was rejected because the results indicated some degree of correlation.

The test results also revealed that there is correlation between the respondents' operating business they worked in and statement 3.6 (High levels of trust in your team improves team effectiveness), and 5.1 (Your team is able to achieve good results) and 5.5 (Your team is creative and innovative). The p values are 0.001, 0.001 and 0.002 respectively which are less than p value of 0.05. Therefore the null hypothesis which claimed there is no correlation was rejected because results indicated that there is correlation.

Lastly, the results indicated that there was correlation between what the position of the respondent is and statement 4.3 (Management supports teams with talent management: identifying skills gap and retention of talent). The p value is 0.022 which is less than 0.05 indicating that the null hypothesis was rejected because results indicated some degree of correlation.

5.8 CONCLUSION

This chapter presented results of the questionnaire as well as the analysis which included reliability testing, factor analysis and correlation analysis.

The next chapter is the integration of the findings of the empirical survey with the literature study to present the factors to improving team effectiveness at Transnet Engineering, recommendations and conclusion.

CHAPTER 6

SUMMARY OF THE RESOLUTION OF THE SUB-PROBLEMS, RECOMMENDATIONS AND CONCLUSIONS

6.1 INTRODUCTION

The main problem of the study, namely, "What are the factors for improving group and team effectiveness at Transnet Engineering?" was addressed in chapter five. The questionnaire used for the empirical study required the respondents to indicate the factors that improve or affect the effectiveness of their teams, and the questionnaire also required the respondents to indicate whether their teams were effective or not.

In chapter five, the results of the questionnaire were discussed and presented both in tabular and graphical format. In this final chapter, the researcher will draw conclusions from the results obtained in the empirical study. The difficulties and limitations experienced during the research period will also be presented. Finally, the researcher will present recommendations and suggestions for future research.

6.2 RESOLUTION OF THE FIRST SUB-PROBLEM

Sub-Problem one – What factors does the literature reveal will improve group and team effectiveness?

A comprehensive literature study was conducted in an effort to resolve this sub-problem. The findings from the literature study and the models presented in the literature revealed the factors which improve team effectiveness, and these factors fall under organizational context, individual context and team context, and further literature indicated that management support was of key importance to team effectiveness. These factors, if managed properly, produce effective teams. Many organisations want to improve performance or organisational effectiveness through the use of effective teams, but teams become effective if the factors for improving team effectiveness are known and managed. The factors for improving team effectiveness were discussed in chapter three of this research paper.

From the results of the literature study, these factors were identified amongst other factors: Source Nel, et al. (2011)

Organisational context:

- Vision and Mission
- Values
- Strategy
- Formal structure
- Organisation culture
- Technology
- Reward system
- Leadership support
- Training
- Resources

Individual Context:

- Skills
- Behaviour
- Attitude
- Background
- Values
- Expectations (Psychological contract) that make the individual unhappy
- Learning, growth and development
- Individual effort

Team context:

- Leadership
- Roles and responsibilities
- Norms (Standard of behaviour)
- Composition
- Team Size
- Status
- Interpersonal dynamics

- Diversity
- Team purpose and objectives
- Communication
- Trust

Management support:

- Talent Management
- Conflict management
- Change management
- HRM (Human Resource Management) processes
- Team/Group development
- Performance Management

The above factors lead to team effectiveness.

Team Effectiveness:

- Improved customer satisfaction
- Improved employee satisfaction
- Improved solutions
- Increased organisational output
- Improved Problem solving
- Co-ordination with other work units

Robbins and Judge (2013:63) mention that effectiveness is the degree to which an organisation meets the needs of its clientele or customers. Johnson and Scholes (2002:168) state that effectiveness is the ability to meet the customer requirements.

6.3 RESOLUTION OF THE SECOND SUB-PROBLEM

Sub-Problem two – What factors do supervisors, superintendents, foremen and managers at Transnet Engineering believe improve group and team effectiveness?

An empirical study was conducted in order to address the second sub-problem. A questionnaire survey was distributed to Transnet Engineering operational business units, and the research population was supervisors, superintendents, foremen and managers.

The research instrument was grouped into five categories; organisational context, individual context, team context, management support and team effectiveness.

The results of the empirical study are presented below;

6.3.1 Organisational context factors

Literature revealed that teams do not operate in isolation but within the broader external and internal organisational environment. Nel et al (2011:336) state that teams function within an organizational context, which can either enhance or limit effective team functioning. The organizational vision, mission, values and strategy provide direction for team functioning and ideally all team goals, processes and behaviours should be aligned with the strategic direction of the organisation.

The results of the survey questionnaire indicated that more than 50% of the respondents agreed that Transnet Engineering provides the necessary resources for teams to operate effectively. More than 70% of respondents agreed that Transnet Engineering's vision, mission, values and strategy provide direction for the functioning of teams. More than 50% agreed that the organisational culture at Transnet Engineering supports team work, collaboration, knowledge sharing and excellence. 70% of respondents agreed that Transnet Engineering does give training opportunities to enhance skill, knowledge, experience and competence of team members. Almost 80% of respondents agreed that Transnet Engineering does inform employees about policies, organisational changes, strategies, new developments that affect employees. Decisions made, and feedback is provided about the organisation's performance. Furthermore, the research also indicates that a good reward and recognition system for effective teams does not exist at Transnet Engineering because almost 41% of the respondents disagreed and 33% were uncertain that it exists. The support provided by leadership (EXCO) to nurture and

help teams to be effective seem not to exist as almost 30% of respondents disagreed and almost 30% were uncertain.

Therefore, the researcher concluded that the organisation context factors for improving team effectiveness at Transnet Engineering are:

- Providing teams with resources to allow them to operate effectively.
- Providing feedback and information about decisions regarding the organisation's performance.
- Informing employees about policies, organisational changes, strategies, and new developments that affect employees.
- Organisational vision, mission, values and strategy linked to team goals and objectives.
- Organisational culture that supports team work, collaboration, knowledge sharing and excellence.
- Providing teams with training opportunities to enhance skill, knowledge, experience and competence.

These factors are in line with the factors identified in the literature study, which means results of the literature study and empirical study show agreement. The reliability test conducted indicated a Cronbach's alpha of 0.816, which indicated that the measuring instrument measured what it was supposed to measure in relation to team effectiveness and organisational context factors.

6.3.2 Individual context factors

The results of the survey questionnaire indicated that more than 55% of respondents agreed that in Transnet Engineering teams, differences in age, gender and race of team members affects team effectiveness. Almost 50% of respondents agreed that diverse cultural background and language of team members affects team effectiveness. Empirical results also indicated that 82% of respondents agreed that individuals in teams that have the right skills, knowledge, abilities, aptitude and competencies make a team effective. 84% of respondents agreed that individuals

with a positive attitude in the team enhance teamwork and team effectiveness. Almost 80% of respondents also agreed that a mentally, physically and emotionally able team member performs at the required level of performance. Almost 80% agreed that an individual in the team who feels unhappy and is always complaining affects team effectiveness. Furthermore, almost 80% of respondents noted that individuals in the team that seek more learning, growth and development have a positive impact on team effectiveness, and 81% agreed that individuals bring their effort to achieve a collective goal and that improves team effectiveness.

Therefore, based on the results discussed, the researcher concluded that the individual context factors for improving team effectiveness at Transnet Engineering are:

- Proper mix of team members in terms of differences in age, gender and race.
- Proper mix of team members due to diverse cultural background and language.
- Individuals that have the right skills, knowledge, abilities, aptitude and competencies.
- Team members that have a positive attitude.
- Having mentally, physically and emotionally able team members.
- Having individuals in the team that are happy and not always complaining.
- Individuals in the team that seek more learning, growth and development.
- Individuals that bring their effort to achieve a collective goal.

Nel, et al (2011:337) state that a group or team consists of a diverse group of individuals who, owing to their unique characteristics, make unique contributions to the group's success. A team can be multicultural but as long as it has a common goal and vision shared by all team members, the team stands a good chance of being successful (Simon (2001), cited by Ulloa & Stephanie (2004)).

Holtzman and Anderberg (2011) state that, "for a team to be successful, certain core ingredients are required. These include competence, clear performance metrics, commitment to a common goal, aligned efforts, contribution from every member, and a supportive environment. A team that has all the above-mentioned characteristics has a good chance of becoming successful. If the team, in addition to the essential

elements, has members with diverse sets of backgrounds and skill sets an even higher level of performance can be achieved and the likelihood of producing breakthrough innovations increases".

The researcher concluded that the empirical results are in agreement with the literature study, which indicated the individual factors that affect or improve team effectiveness. Furthermore, Transnet Engineering teams experience individual context factors because teams are formed by individuals who come together to form a team.

6.3.3 Team context factors

The results of the survey questionnaire indicated that almost 80% of respondents agreed that their team objectives are aligned to organisational strategy and objectives. Almost 75% of respondents agreed that roles and responsibilities are clearly defined, and work is fairly distributed in their team, 76% agreed that team members have open communication and are encouraged to communicate freely, with no favouritism, discrimination or prejudice, and almost 65% agreed that the size of the team affects team effectiveness. The research also indicated that more than 80% of respondents agreed that positive norms (acceptable standards of behaviour) promote team effectiveness. More than 85% agreed that high levels of trust in the team and acceptance of diversity and avoidance of conflict do promote team effectiveness. More than 80% agreed that acceptance of diversity and avoidance of conflict improves team effectiveness. However, there is a split in responses about whether miscommunication, mistrust and difficulty in reaching agreements is because of diversity and multicultural teams.

Kreitner, et al (2002:329) lists these characteristics as that of an effective team:

- **Clear purpose –** the vision, mission, goal of the team must be clearly described and be acceptable to everyone.
- **Informality –** the climate is informal, there is a relaxed and comfortable environment. No tension or red tape.

- **Participation –** members are encouraged to participate in discussions.
- **Listening –** members are encouraged to listen to each other's opinions, ideas and feedback. Questioning and comments are encouraged.
- **Civilised disagreements –** disagreement is allowed, no grudges for difference of opinions. No signs of avoiding or suppressing difference of opinions.
- **Consensus decisions -** unanimous agreement through open discussion of team member's ideas, avoidance of voting and compromising.
- **Open communication –** team members are encouraged to communicate freely, no favouritism, discrimination or prejudice of other's ideas.
- **Clear roles and work assignments –** expectations from each team member, and the role they will play, are made clear. Work is distributed fairly amongst team members.
- **Shared leadership –** Although there is a formally appointed leader, leadership roles shift from time to time depending on the circumstances, the needs of the group, and the skills of the members.

The empirical results show agreement with the factors identified from the literature study, therefore the researcher concluded that the team context factors to improving team effectiveness at Transnet Engineering are:

- Alignment of team objectives to organisational strategy and objectives.
- Clearly defined roles and responsibilities, and fair distribution of work.
- Allowing team members to have open and free communication without favouritism, discrimination or prejudice.
- Team size.
- Team that has positive norms (acceptable standards of behaviour).
- High levels of trust in the team.
- Acceptance of diversity and avoidance of conflict in the team.

6.3.4 Management support context

Middle and upper management support and commitment is necessary for teams to operate effectively (Margulies & Kleiner 1995). Teams are more effective if

management provides the necessary support. Management support for teams is positively related to the task performance of teams, member satisfaction with the team, team cohesiveness, commitment to the team, and team spirit and trust. An organisational culture that clearly supports teams fosters more effective teams (Thomas, Ravlin & Barry 2000).

The results of the survey revealed that 67% of respondents agreed management supports teams with conflict management, almost 55% agreed management supports teams with change management, and almost 65% agreed that management supports teams with human resource management. More than 70% agreed that foremen, supervisors and business managers support teams to perform effectively and almost 65% agreed that management supports with performance management (goal setting and performance reviews), and 60% agreed that management supports with strategic management (alignment of corporate and team vision). More than 55% of respondents agreed that management supports teams with team development dynamics, and guides teams to achieve team synergy.

Almost 44% agreed that management support teams with talent management (to identify skills gap and retention of talent).

The researcher concluded that there is management support at Transnet Engineering to make teams effective.

Therefore, based on the results of the empirical study, the researcher concluded that the management support context factors to improving team effectiveness at Transnet Engineering are:

- Supporting teams with conflict management.
- Supporting teams with change management.
- Supporting teams with talent management (identify skills gap and retention of talent).
- Supporting teams with human resource management.
- Supporting teams with performance management (goal setting and performance reviews).
- Supporting teams with team development dynamics, and guiding teams to achieve team synergy.

- Supporting teams with strategic management (alignment of corporate and team vision).
- Support from foremen, supervisors and managers to perform effectively.

6.3.5 Team effectiveness

The results of the survey questionnaire revealed that almost 85% of the respondents agreed that their team is able to achieve good results, 75% agreed that their team is able to solve problems, and 67% agreed that their team is creative and innovative. More than 60% agreed that their team easily adapts to new or increased demand (customer demand and/or management demand), and 84% agreed that their team is committed to achieving team goals and to helping Transnet Engineering succeed.

More than 74% of respondents agreed that their team has good interpersonal and inter business unit relations and communication. 45% of the respondents agreed that teams at Transnet Engineering are involved in department or organisation decision making, although more than a quarter of respondents is uncertain and another quarter disagrees. The research also indicated that 60% of respondents agree that team performance at Transnet Engineering is measured.

Nel, et al (2011:336) state that team effectiveness can be measured in terms of quality outputs, customer satisfaction, personal satisfaction and the ability of teams to continuously learn and adapt to new demands (knowledge management). One of the cornerstones of Total Quality Management (TQM) is teamwork. Team work has been introduced in many organisations globally to increase performance levels, and employee and customer satisfaction. However, these goals can be achieved only if attention is first focused on the internal functioning of groups and teams. Quality within the team must first be achieved before quality in the organisation can be achieved.

Therefore, the researcher concluded that at Transnet Engineering, factors that indicate team effectiveness are:

- Team achieving good results.

- Team being able to solve problems.
- Team easily adapting to new or increased demand (customer demands and/or management demands).
- Team being committed to achieving team goals and help Transnet Engineering succeed.
- Team being creative and innovative.
- Team having good interpersonal relations and communication with other business units.
- Team being involved in department or organisation decision making.
- Team performance being measured.

In general, the researcher deduced that teams at Transnet Engineering are effective because of the organisational environment at Transnet Engineering which is conducive for teams, and the management support given to teams is another reason why teams at Transnet Engineering are effective.

Finally, the empirical study results indicated that the respondents agreed with most of the factors identified from the literature study which were measured under the five categories of the questionnaire. Most respondents agreed with factors tested under organisational context, individual context, team context and management support; this agreement is deduced from the amount of responses obtained for each questionnaire statement. The researcher also concludes that the teams at Transnet Engineering are effective because most respondents indicated that their teams achieve good results, solve problems, are innovative and creative, can adjust to meeting and exceeding customer demand and they work well with other teams.

6.4 RESOLUTION OF THE THIRD SUB-PROBLEM

Sub-Problem three - How can the two be integrated to determine the factors that improve group and team effectiveness?
A comprehensive literature study was done to solve sub-problem one, and an empirical study was done to solve sub-problem two. In section 6.3 above, factors for improving group and team effectiveness at Transnet Engineering are presented.

6.5 LIMITATIONS OF THE STUDY

This study was delimited to Transnet Engineering Koedoespoort plant operational business units in Pretoria. The study focused on supervisors, foremen and managers within these operational business units. The study excluded the views and opinions of supervisors, foremen and managers of support business units (Human Resource, Risk and Safety, Assets and Plant Equipment, Maintenance, Product Development, Project management, etc.). This can be accomplished by doing more research covering a broader scope.

6.6 FUTURE RESEARCH

Although this study was delimited to Transnet Engineering Koedoespoort operational business units, however, further research can be conducted with Transnet Engineering Koedoespoort support business units. Operational business units are manufacturing facilities and support business units include departments like Human resource management, Risk and safety, Maintenance, Business and product development, Plant and equipment, Communication, Finance, and Marketing.

Also, as indicated in Transnet Engineering overview chapter 2, Transnet Engineering operates in different centres across the country. There is Koedoespoort centre where this study was conducted, Durban, Salt River, Uitenhage, Bloemfontein and Germiston centres. A similar study can be conducted in the different centres to identify factors for improving team effectiveness.

6.7 RECOMMENDATIONS

The results of the study have identified certain areas that need particular attention. A discussion of these factors follows.

6.7.1 Employee training

Research indicated that 56.4% of respondents have been in supervisory and management positions for less than five years, and 13.8% of respondents are

between 20 and 30 years of age. These employees have not been working long and need to be trained and mentored to gain more experience about managing teams so that they can clearly understand the factors that improve team effectiveness. Training will also enhance their skills and knowledge for doing their jobs.

6.7.2 Organisational environment

Nel, et al (2011:336) state that teams function within an organisational context, which can either enhance or limit effective team functioning. The organisational vision, mission, values and strategy provide direction for team functioning and ideally all team goals, processes and behaviours should be aligned with the strategic direction of the organisation. Although respondents indicated Transnet Engineering is supportive of teams, senior leadership must continue to provide a work environment that supports teams. The organisational vision, mission, values and strategy should be communicated rigorously to ensure alignment with operational teams' vision and objectives.

6.7.3 Team development

Nel, et al (2011:336) mentions that managers determine what type of team is required to attain organisational goals, and are responsible for the implementation of teams. It is recommended that teams are continuously given support and management must assist with team development. Management involvement will also assist with identifying and managing the team dynamics relevant to that specific team to make it effective.

6.7.4 Diversity management

From the empirical study it is evident that teams at Transnet Engineering are multicultural and diverse. Respondents of the empirical study agreed with most of the statement of factors under individual and team context. Therefore, management must help identify and address issues flowing from diversity of team members and cultural differences.

Noe et al (2012:39) state that to successfully manage a diverse workforce, managers must develop a new set of skills, including:

- Communicating effectively with employees from a wide variety of cultural backgrounds.
- Coaching and developing employees of different ages, educational backgrounds, ethnicity, physical ability, and race.
- Providing performance feedback that is based on objective outcomes rather than values and stereotypes that work against women, minorities, and handicapped persons by prejudging these persons' abilities and talents.
- Creating a work environment that makes it comfortable for employees of all backgrounds to be creative and innovative.
- Recognising and responding to generational issues.

6.7.5 Team leadership

According to Construction Excellence (2004), leadership is critical to teamwork. The team leader is the person responsible for ensuring that members work effectively together to achieve their goal or objective and must facilitate the co-operation necessary for the team to perform well. Team leaders at Transnet Engineering must be given sufficient training to manage the factors that affect team effectiveness. Most respondents showed agreement with the factors that affect team effectiveness, and it is evident that each supervisor, foreman and manager experiences these factors in their teams. Therefore, training to enhance team leadership will help.

6.7.6 Team resources

For teams to operate effectively they must have access to resources. These resources can include money, time, equipment, technology, people and information, (Robbins 1998).
21.3% respondents indicated that they were uncertain that Transnet provides necessary resources for teams to operate effectively, while 17% disagree that they are offered resources. Transnet Engineering leadership must do a survey to determine which resources do teams lack which affect team effectiveness.

6.7.7 Leadership (EXCO) support

Nel et al (2011) state that middle and upper management support and commitment is necessary for teams to operate effectively. A nurturing environment with a collaborative climate provides the support and encouragement that teams need for job performance. Most respondents indicated that senior leadership (EXCO members) is non-existent because they are not getting any support. Therefore, the researcher recommends that members of senior management must be visible to the people and provide the necessary support required by that specific team.

According to Kreitner et al (2002:329), work teams have a much greater chance of being effective if they are nurtured and helped by the organization.

6.7.8 Reward and recognition

Holtzman and Anderberg (2011) state that, "Commitment is also enhanced through rewards. If people understand that promotions, bonuses, or pay increases are associated with their success in achieving the team goal, their commitment will increase. If the team members understand that the boss will get the credit and the vast majority of the monetary rewards, their commitment will prove ephemeral".

33% of respondents indicated in the empirical study that they are uncertain that a reward and recognition system exists in Transnet Engineering, 30.9% disagreed that it exists and 9.6% strongly disagreed. Transnet Engineering senior executive leadership must develop a recognition and reward system that will motivate teams and enhance team effectiveness. Management must also look at how age, gender and race of team members within a team affect team effectiveness, and possibly homogenous teams should be established rather than heterogeneous teams.

6.7.9 Psychological contract

Bateman and Snell (1999:459) posit that a psychological contract is a set of perceptions of what the employees owe the employer, and what the employer owes them. This contract, whether it is seen as being upheld or violated, and whether both parties trust one another or not, has important implications for employee satisfaction and motivation, and the effectiveness of the organization.

77.7% of respondents indicated that the individual in their team who feels unhappy and is always complaining affects their team effectiveness. Management must seek to know each team member's expectations and randomly check if their expectations are met or not. A survey can be done to determine the employee expectations and perceptions about whether managements fulfil the promises and expectations.

6.7.10 Talent Management

Noe et al. (2012:25) suggest that talent management refers to the systematic planned strategic effort by a company to use bundles of human resource management practices, including acquiring and assessing employees, learning and development, performance management, and compensation to attract, retain, develop, and motivate highly skilled employees and managers.

Management must focus on developing employee skills and come up with strategies to enhance those skills, abilities, knowledge and competence of employees. If this is done, the team effectiveness of the group will be increased.

Results of the empirical survey indicated some concerns from respondents regarding support they get from management in terms talent management: 22.3% of respondents disagreed and 29.8% were uncertain whether they get talent management support from management.

6.7.11 Team Size

Team size can affect team functioning and create problems such as complicating communication and coordination. It is suggested that team size should be limited to a minimum number in accordance with the team's goals. If a team is too large, the quality of interaction between its members decreases and this impairs team effectiveness which results in high costs and process losses (Duygulu and Ciraklar (2008), citing Diskul, (2000)). More focus is required on team size as results of the empirical study indicated that 65% of respondents indicated that size affects their team effectiveness. An analysis must be conducted to determine the optimum size that can be implemented for teams at Transnet Engineering.

6.8 CONCLUSION

Robbins and Judge (2013:359) state that in a team where there is interdependence, the success of the whole depends on the success of each one, and the success of each one depends on the success of the others. Success requires a great deal of coordination between interdependent team members. Work teams may be productive in organisations, although making them successful is not easy. Hence, this study was conducted to identify the factors to improving team effectiveness at Transnet Engineering. From this research, it can be concluded that team effectiveness at Transnet Engineering is improved by various factors. These factors affecting team effectiveness were identified from the literature review, and were also confirmed by the empirical study.

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ANNEXURE A: ETHICS CLEARANCE FOR TREATISE FORM E

Nelson Mandela
Metropolitan
University

FOR TOMORROW

FORM E

ETHICS CLEARANCE FOR TREATISES/DISSERTATIONS/THESES

Please type or complete in black ink

FACULTY: BUSINESS AND ECONOMIC SCIENCES

SCHOOL/DEPARTMENT: BUSINESS SCHOOL

I, (surname and initials of supervisor) HEATHER B.

the supervisor for (surname and initials of candidate) NGWENYA S.G

_____ (student number) 20232224

a candidate for the degree of MASTER OF BUSINESS ADMINISTRATION

with a treatise/dissertation/thesis entitled (full title of treatise/dissertation/thesis):

A STUDY TO DETERMINE THE FACTORS THAT ARE
MOST CRITICAL TO IMPROVE GROUP AND TEAM EFFECTIVENESS
IN TRANSNET ENGINEERING WITHIN GAUTENG PROVINCE.
considered the following ethics criteria (please tick the appropriate block):

		YES	NO
1.	Is there any risk of harm, embarrassment of offence, however slight or temporary, to the participant, third parties or to the communities at large?		✓
2.	Is the study based on a research population defined as 'vulnerable' in terms of age, physical characteristics and/or disease status?		✓
2.1	Are subjects/participants/respondents of your study:		
	(a) Children under the age of 18?		✓
	(b) NMMU staff?		✓
	(c) NMMU students?		✓
	(d) The elderly/persons over the age of 60?		✓
	(e) A sample from an institution (e.g. hospital/school)?		✓
	(f) Handicapped (e.g. mentally or physically)?		✓
	(g) Socially/economically disadvantaged?		✓

3. Does the data that will be collected require consent of an institutional authority for this study? (An institutional authority refers to an organisation that is established by government to protect vulnerable people)	✓
3.1 Are you intending to access participant data from an existing, stored repository (e.g. school, institutional or university records)?	✓
4. Will the participant's privacy, anonymity and confidentiality be disclosed/revealed?	✓
4.1 Are you administering a questionnaire/survey that:	
(a) Collects sensitive/identifiable data from participants?	✓
(b) Does not guarantee the anonymity of the participant?	✓
(c) Does not guarantee the confidentiality of the participant and the data?	✓
(d) Will be distributed electronically (e.g. online via email/web link)?	✓

Please note that if ANY of the questions above have been answered in the affirmative (YES) the student will need to complete the full ethics clearance form (REC-H application) and submit it with the relevant documentation to the Faculty Ethics Co-ordinator.

and hereby certify that the student has given his/her research ethical consideration and full ethics approval is not required.

JWHeath

SUPERVISOR(S)

_16/08/2013_

DATE

PP HOD

HEAD OF DEPARTMENT

_19/8/20.._

DATE

STUDENT(S)

_16/08/2013_

DATE

Please ensure that the research methodology section from the proposal is attached to this form.

ANNEXURE B: REQUEST LETTER TO CONDUCT RESEARCH IN TRANSNET ENGINEERING

To:	**D. Kala** National Capacity Building Manager	**From:**	**Sandile gwenya** Locomotive Business Eastern Region
Cc:	**D. Masoek** GM: Human Capital	**Cell:**	083 294 2746
Cc:	**S. Matlou** Act GM: Human Capital		

Date: 22 July 2013

<u>**RE:**</u> **REQUEST TO DO MBA REASERCH IN TRANSNET ENGINEERING (TE)**

Dear Mr Kala, Mr Matlou and Mrs Masoek

I am currently doing my last year MBA degree and kindly request to focus my research study in Transnet Engineering.

Research is aimed on supervisors, superintendents, foremen and managers especially. The results of the research and any model/s developed will be shared with yourselves and the Ttransnet Engineering EXCO.

The topic and one of the sub-problems for my research are as follows:

TOPIC:

A STUDY TO DETERMINE THE FACTORS TO IMPROVE GROUP AND TEAM EFFECTIVENESS AT TRANSNET ENGINEERING.

SUB-PROBLEM:

This will be investigated in a form of a questionnaire developed from Literature review. The questionnaire will be sent out for completion by supervisors, superintendent, foremen and managers.

   a) What factors do supervisors, superintendent, foremen and managers believe improve group and team effectiveness?

YOUR APPROVAL OF MY REQUEST WILL BE MUCH APPRECIATED

Yours Sincerely
Sandile Ngwenya

P.O Box 16560

Wattville

Benoni

1516

23 Oct 2013

Dear Sir / Madam

SURVEY TO DETERMINE THE FACTORS TO IMPROVING GROUP AND TEAM EFFECTIVENESS

I am studying towards my MBA (Masters in Business Administration) degree at the Nelson Mandela Metropolitan University Business School. I am conducting research to determine **the factors to improve group and team effectiveness** in Transnet Engineering. I believe that my study will make an important contribution to the improvement of the functioning of teams in Transnet Engineering.

You are part of the selected sample of respondents whose views are required on the above-mentioned matter. I would therefore appreciate it if you could take some time to answer the questions as accurately as possible by the 31 Oct 2013.

Please note:
- **The questionnaire should not take more than fifteen minutes of your time.**
- **All information will be treated as confidential.**
- **All questions should be answered to the best of your ability.**
- **If you need a copy of a summary of the findings, please indicate at the end of the questionnaire and it will be forwarded to you in due course.**

Your kind co-operation is much appreciated

Yours Sincerely

Sandile Ngwenya **(0832942746)**

ANNEXURE D: QUESTIONNAIRE

SECTION A: DEMOGRAPHIC INFORMATION

This section of the questionnaire is purely for statistical purposes.

INSTRUCTION

Please place a cross (X) in the appropriate box.

1. **What is your gender?**   **Male** ☐   **Female** ☐

2. **In which operating business do you work?**

Locomotives MOP ☐	**Rotating Machines Diesel** ☐
Locomotives New Build ☐	**Foundry** ☐
Locomotives Upgrade ☐	**Auxiliary** ☐
Locomotives Power Electronics ☐	**Wheels Coaches** ☐
Rolling Stock Equipment ☐	**Other, specify_____** ☐
Rotating Machines ☐	

3. **What is your position?**

Business Manager ☐

Production Manager ☐

Quality Manager ☐

Logistics Manager ☐

Local Lean Manager ☐

Supervisor / Superintendent ☐

Foreman ☐

Customer Service Manager ☐

Other ☐   **Specify _____**

4. **How many employees do you manage / supervise?**

1 - 10	
11 - 20	
21 - 30	
31 - 40	
41 - 50	
51 and more	

5. **For how many years have you been in management or a supervisory position?**

0 - 5	
6 - 10	
11 - 15	
16 - 20	
21 and more	

6. **What is your age?**

20 - 30	
31 - 40	
41 - 50	
51 - 60	
61 and above	

7. **What is your race?**

African	
Indian	
Coloured	
White	

8. **What is your highest academic qualification?**

Less than a matric (grade 12)	
Matric (Grade12)	
Diploma	
Degree	
Other	

Specify, _____

INTRODUCTION

This study is based on the premise that there are certain factors that are critical for improving work team effectiveness in organisations. This study is conducted among Koedoespoort plant operational businesses. The researcher concerned with this study identified a list of factors from a literature review that influence team effectiveness.

This questionnaire is designed to identify the supervisors, superintendents, foremen and managers perception about team factors existing in Transnet Engineering operational teams which have an impact on team effectiveness.

INSTRUCTIONS FOR COMPLETING SECTION B OF THE QUESTIONNAIRE

Please complete the questionnaire using the following scale:

1 = STRONGLY AGREE

2 = AGREE

3 = UNCERTAIN

4 = DISAGREE

5 = STRONGLY DISAGREE

Please place a cross (X) in the appropriate box.

1. ORGANIZATIONAL FACTORS

Work teams operate within the organisation, and the organisational environment will either support or hinder teamwork. **This section seeks to test if the organisational environment at Transnet Engineering supports team work.**

Please indicate the degree to which you agree or disagree with the following statements.

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
1.1 Transnet Engineering provides necessary resources for teams to operate effectively.	1	2	3	4	5
1.2 Transnet Engineering vision, mission, values and strategy provide direction for functioning of teams.	1	2	3	4	5
1.3 Organisational culture at Transnet Engineering supports team work, collaboration, knowledge sharing and excellence.	1	2	3	4	5
1.4 Transnet Engineering leadership (EXCO) nurtures and helps teams to be effective.	1	2	3	4	5
1.5 A good reward and recognition system for effective teams exists at Transnet Engineering.	1	2	3	4	5
1.6 Transnet Engineering does give training opportunities to enhance skill, knowledge, experience and competence of team members.	1	2	3	4	5
1.7 Transnet Engineering does inform employees about policies, organisational changes, strategies, new developments that affect employees. Decisions and feedback is provided about organisational performance.	1	2	3	4	5

2. INDIVIDUAL CONTEXT FACTORS

This section seeks to identify whether the individuals unique factors such as age, gender, race, cultural background, language, personality, attitudes, skills, ability, etc. affect team effectiveness at Transnet Engineering.

Please indicate the degree to which you agree or disagree with the following statements.

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
2.1 Differences in age, gender and race of team members affect your team effectiveness.	1	2	3	4	5
2.2 Diverse cultural background and language of team members affects your team effectiveness.	1	2	3	4	5
2.3 Individuals in your team that have the right skills, knowledge, abilities, aptitude and competencies make your team effective.	1	2	3	4	5
2.4 Individuals with a positive attitude in your team enhance teamwork and team effectiveness.	1	2	3	4	5
2.5 A mentally, physically and emotionally able team member performs at the required level of performance.	1	2	3	4	5
2.6 An individual in your team who feels unhappy and is always complaining affects your team effectiveness.	1	2	3	4	5
2.7 Individuals in your team that seek more learning, growth and development have a positive impact on your team effectiveness.	1	2	3	4	5
2.8 Individuals bring their effort to achieve a collective goal and that improves team effectiveness.	1	2	3	4	5

3. TEAM CONTEXT FACTORS

There are various team factors which contribute to effectiveness of the team.
This section seeks to identify the team factors that promote or prevent team effectiveness at Transnet Engineering.

Please indicate the degree to which you agree or disagree with the following statements.

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
3.1 Your team objectives are aligned to organisational strategy and objectives.	1	2	3	4	5
3.2 Roles and responsibilities are clearly defined, and work is fairly distributed in your team.	1	2	3	4	5
3.3 Your team members have open communication and are encouraged to communicate freely, no favouritism, discrimination or prejudice.	1	2	3	4	5
3.4 Size of your team affects team effectiveness.	1	2	3	4	5
3.5 Positive norms (acceptable standards of behaviour) in your team do promote team effectiveness.	1	2	3	4	5
3.6 High levels of trust in your team improves team effectiveness.	1	2	3	4	5
3.7 Acceptance of diversity and avoidance of conflict in your team improves team effectiveness.	1	2	3	4	5
3.8 Your team is multicultural and diverse, and it has more miscommunication, mistrust and difficulty in reaching agreements.	1	2	3	4	5

4. MANAGEMENT SUPPORT FACTORS

There are various management support factors or initiatives that are required to improve effectiveness of the team.

This section seeks to identify whether management at Transnet Engineering support teams to perform effectively?

Please indicate the degree to which you agree or disagree with the following statements.

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
4.1 Management supports teams with conflict management.	1	2	3	4	5
4.2 Management supports teams with change management.	1	2	3	4	5
4.3 Management supports teams with talent management (identifies skills gap and retention of talent).	1	2	3	4	5
4.4 Management supports teams with human resource management.	1	2	3	4	5
4.5 Managers support teams with performance management (goal setting and performance reviews).	1	2	3	4	5
4.6 Managers support teams with team development dynamics, and guide teams to achieve team synergy.	1	2	3	4	5
4.7 Managers support teams with strategic management (alignment of corporate and team vision).	1	2	3	4	5
4.8 A Foreman, supervisor or business manager supports teams to perform effectively.	1	2	3	4	5

5. TEAM EFFECTIVENESS

Team effectiveness is the measurement of the group synergy towards the accomplishment of the tasks. Synergy is the product of the group activities where the output of the team is greater than the sum of each individual member's output.
This section seeks to identify whether teams at Transnet Engineering are effective or not.
Please indicate the degree to which you agree or disagree with the following statements.

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
5.1 Your team is able to achieve good results.	1	2	3	4	5
5.2 Your team is able to solve problems.	1	2	3	4	5
5.3 Your team easily adapts to new or increased demand (customer demands and/or management demands).	1	2	3	4	5
5.4 Your team is committed to achieving team goals and helping Transnet Engineering succeed.	1	2	3	4	5
5.5 Your team is creative and innovative.	1	2	3	4	5
5.6 Your team has good interpersonal and inter business unit relations and communication.	1	2	3	4	5
5.7 Teams at Transnet Engineering are involved in department or organisation decision making.	1	2	3	4	5
5.8 Team performance at Transnet Engineering is measured.	1	2	3	4	5

6. DO YOU NEED A COPY OF THE SUMMARY OF THE FINDINGS?

YES ☐

NO ☐