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Factors affecting team effectiveness in the construction industry in South Africa

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A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Business Administration

Johannesburg, 2014

ABSTRACT

Companies within the construction industry in South Africa utilise teams to execute projects. The study explores the factors affecting team effectiveness in the construction industry in South Africa. An academic literature review was compiled with the aim of exploring existing academic literature, and applying it to the main research problem that was being investigated. The literature review established a number of factors that are considered to affect the effectiveness of teams. These factors included, but were not limited to: collaboration of the team, external support and recognition, clear and inspiring goals, principled leadership, results driven, competent team and commitment.

10 interviews were completed with project managers of construction companies in South Africa. Open ended questions were used to gain insights from the project managers on factors affecting team effectiveness in the construction industry in South Africa. A thematic analysis approach using unstructured, Interviews was used. There was convergence from the respondents regarding the factors affecting team effectiveness in the construction industry in South Africa.

The main findings of the research were factors that were categorised into three groups, which are team process factors, organisational factors and leadership process factors. The factors identified as affecting team effectiveness are listed below:

- The matrix organisation structure commonly used in the construction industry was found to affect the effectiveness of teams.
- Having skilled resources was identified as an important factor that contributes to team effectiveness.
- Having a recognition system in place in an organisation to reward the members of teams was found to positively affect team effectiveness in the construction industry.

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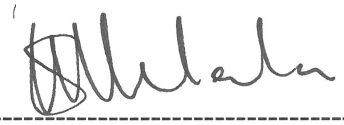
- Effective leadership was identified as creating an enabling environment where members can work together in delivering the project objectives.

- Decision making was seen as critical within a team.

Lastly, the key message is that managers of construction companies in South Africa should consider the factors that have been identified in this report as affecting team effectiveness, when establishing and managing teams in the construction industry.

DECLARATION

I, Siboniso Mkhabela, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.



Siboniso Mkhabela

Signed at Wits Business School

On the 16 April 2014

DEDICATION

To my daughter Setsabile Dalia Mkhabela.

ACKNOWLEDGEMENTS

I would like to express my sincere thanks and gratitude to:

- My supervisor, Professor Sebastian Kriek, for his continued encouragement and invaluable guidance throughout the research process.
- My family for their continued support throughout the MBA.
- All the respondents who participated in the interview process for offering their time and invaluable insights. Their contribution to this research is highly appreciated.

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CHAPTER 1: INTRODUCTION

1.1. Purpose of the study

The purpose of this study is to identify factors affecting team effectiveness in the construction industry in South Africa.

1.2. Context of the study

The use of teams across the globe has become a prominent trend of modern organisational life. In general, most people in organisations are part of one or more teams. A study conducted by Osterman (1994) concluded that over 50% of the 700 organisations studied were using teams, and over 40% had more than half of their employees working in teams. In another study, Gordon (1992) cited in Cohen and Bailey (1997) posits that 82% of companies with 100 or more employees make use of teams. Within the South African context, Kriek and Venter (2007) point out that the use of teams is also a widespread trend.

The most commonly used typology of defining teams in a work environment is to define teams according to their work setting i.e. whether they are in a manufacturing setting, a management setting or in a project setting. Cohen and Bailey (1997) give four types of teams namely; work teams, parallel teams, project teams and management teams.

Teams are perceived to be generally beneficial to organisations. As a result and in most instances, organisations use teams in order to remain competitive. Using teams has been shown to improve performance in organisations. The improved performance is attributed to the fact that within teams, there tends to be a variety of knowledge and skills, which can be pooled along with information and resources that can be shared (Driskell, 1992). Finally, teams outperform individuals acting alone, especially when performance requires multiple skills and judgements (Baiden & Price, 2011).

A question of relevance in organisations today is why some teams are more

successful than others. In particular, why some teams never appear to be effective, no matter how experienced their members are. According to Egan (2002), process and team integration are the key drivers of change necessary for teams to become more effective. An investigation conducted by Bergmann and De Meuse (1996) into team effectiveness in a large food processing company found that the teams lacked skills of problem solving, dealing with conflict, conducting effective meetings and interpersonal communication, thereby resulting in lack of effectiveness. Similar findings into team effectiveness have been made by other researchers (Cohen & Bailey, 1997; Larson & LaFasto, 1989; Lincioni, 2005 and MacFadzean, 2001). In order to guide a team to achieve high effectiveness, these researchers proposed different team effectiveness models. The proposed models present a number of factors which the authors attest that they influence the effectiveness of teams. Some of the models highlight group structure and interpersonal dynamics, while others tend to focus on the talent and motivation of individual team members. Still others emphasise factors external to the team itself such as a company's culture.

The intricacies behind the effectiveness of teams can be applied to any industry, including the construction industry. The construction industry tends to be characterized by large capital projects. The projects usually have high capital costs, thereby making the success of these projects critical. The construction projects are delivered utilising project management tools and frameworks. Multidisciplinary project teams are assembled to deliver a construction project, and the teams comprise of individuals who are experts in their field. Historically, within the construction industry, the skills of managing the project budget, schedule and quality have been viewed as the key to delivering successful projects. Not enough emphasis is ever placed on interpersonal skills or team dynamics as critical success factors to delivering a successful project. Pant and Baroudi (2007) identify soft skills in managing projects as the missing link to critical project success. Baiden and Price (2011) have also shown that creating effective teams is one of the main factors affecting project success in organisations.

Given the increasing use of teams in South Africa, the researcher has not come across a study addressing factors affecting team effectiveness in the construction industry in South Africa. Thus, the aim of this research is to investigate factors affecting team effectiveness in the construction industry in South Africa.

1.3. Problem statement

Identify the factors affecting team effectiveness in the construction industry in South Africa.

1.4. Significance of the study

Katzenbach and Smith (1993) cited in Pollock (2009) have asserted that teams will become the primary unit of performance in high performance organisations. Hence, the need for better understanding of the factors affecting team effectiveness is paramount within the construction industry.

Evidence suggests that team based organisations outperform individual based organisations. Hence, the need for a better understanding of teams and team effectiveness is important. The study will attempt to identify factors affecting team effectiveness in the construction industry in South Africa. Although there has been some research in South Africa on the subject of teams (Kriek & Venter, 2007), however, the researcher has not yet come across a study addressing factors affecting team effectiveness in the context of the construction industry in South Africa.

Hence, the study will contribute to the existing body of knowledge in that it may highlight the factors that affect team effectiveness in the construction industry in South Africa. In addition, the study may provide guidance to managers and professionals working in the construction industry in South Africa, who wish to understand factors affecting team effectiveness within the construction industry. Furthermore, academics and students who wish to conduct a study on team effectiveness in the construction industry in South Africa may also benefit from

the findings of this study.

1.5. Delimitations of the study

The following aspects are not included as part of the current study.

- The research only applies to the construction industry in South Africa.
- Virtual teams are not covered in the scope of this study.
- The research does not consider cultural issues that might have a direct impact on the factors affecting team effectiveness.
- The study refers only to project teams and all other team types are excluded from the study.
- This study refers to teams in a professional setting and teams of labourers are not included in the study.
- The study refers only to teams in an organisational context and excludes social teams, sports teams or collectives that operate in other contexts.

1.6. Definition of terms

Team – A team is collection of individuals who are interdependent in their tasks, who share responsibility for their outcomes, who see themselves and who are seen by others as an intact social entity embedded in one or more social larger systems (for example, business unit or the corporation) and who manage their relationship across social boundaries (Cohen & Bailey, 1997).

1.7. Assumptions

The following will be the underlying assumptions when the research is conducted:

- The respondents' views will be representative of the entire construction industry in South Africa.
- The sample size selected will be sufficiently accurate to represent the construction industry.
- There is an expectation that some of the characteristics purported by respondents will only apply to the construction industry in South Africa.
- The impacts of other influencing factors such as project duration. If the impact of other influencing factors differs considerably from team to team, this will skew the results of the study and reduce its validity.

CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

The literature review chapter will focus on the key themes of relevance to the study. The literature review will first provide an overview of teams and team effectiveness as a concept. This will be followed by a background on teams within the construction industry. Furthermore, team effectiveness including team effectiveness measurements will also be discussed. In addition, a summary of team effectiveness models will be presented. The chapter will then conclude with an overview of the key learnings based on the literature review.

2.2. Background to Teams

The concept of teams is important in understanding factors affecting team effectiveness. This concept has been discussed by a number of researchers (Cohen & Bailey, 1997; Hackman, 1987; Katzenbach & Smith, 1993; Kozlowski & Ilegen, 2006; Sundstrom, DeMeuse & Futrel, 1990; Sundstrom, 1999). Cohen and Bailey (1997) for example, define teams as follows:

> A team is a collection of individuals who are interdependent in their tasks, who share responsibility for their outcomes, who see themselves and who are seen by others as an intact social entity embedded in one or more social larger systems (for example, business unit or the corporation) and who manage their relationship across social boundaries (p. 241).

Teams have become a topical issue in organisations in recent years. In general, most organisations today use teams as a means of performing work and increasing productivity. Organisations are increasingly using teams to streamline processes, enhance participation and improve quality (Cohen & Bailey, 1997). Teams work interdependently to achieve goals, and credit is given to a team rather than to individual contributors (Devine, Clayton, Phillips, Dunford & Melner, 1999). Finally, according to Loo (2002, p.511), “teams are

essential in projects for tackling complex work requiring a variety of knowledge and skills, stimulating creativity and innovation, empowering workers, and other positive consequences."

Despite the increased use of teams in organisational settings, there is currently no single accepted typology in literature used to define teams. A number of researchers have proposed various typologies. Some researchers have defined teams based on key dimensions inherent in the task (Hackman, 1987; McGrath, 1964; Steiner, 1972). Others have classified teams by identifying groups of related teams found in actual organizations, and then applying appropriate labels (Cohen & Bailey, 1997; Hackman, 1987; Sundstrom, 1999). The different classifications have resulted in a number of team types documented in literature. Huszczo (1990) mentions committees, task forces, quality circles, employee participation groups, joint union-management teams, action committees, project teams, supervisory councils and autonomous or self-directed work teams. One of the most popular team classifications used today is based on the work of Cohen and Bailey (1997). Cohen and Bailey (1997) have established four classifications of teams, which they have referred to as project teams, management teams, work teams and parallel teams. This study therefore follows the classification of Cohen and Bailey (1997), and focuses on project teams in the construction industry.

2.3. Construction Project Teams

The construction industry utilises project teams to deliver construction project work. Mankin, Cohen and Bikson (1996) cited in Cohen and Bailey (1997) note that project teams are time limited, and that they produce one time output such as new product or service to be marketed by the company. Nordqvist, Hovmark, Zika-Viktorsson (2003) define construction project work as characterised by a coordinated undertaking of interrelated project activities to achieve an end goal. According to Nordqvist et al., (2003), members interact and cooperate in order to accomplish the work and complete the project on-time. It must be noted here that for teams working in a multidisciplinary environment, there is a high level of interdependency on other team members. The high level of interdependency

results from the fact that the project teams are assembled requiring multi-inter-disciplinary representation of industry professionals responsible for carrying out duties particular to their core area of expertise. Hence, the use of teams in delivering construction projects.

Pant and Baroudi (2007) point out that The Project Management Institute (2004) Project Management Body of Knowledge (PMBOK) is by far the most popular project management guide book used in the construction industry today. The PMBOK has been adopted by a number of countries around the world, including South Africa. The manual identifies best practices and defines standards for project success in the construction industry. To achieve project success, the manual identifies cost, schedule and quality as the main drivers for project success. It must be noted here that the main focus of PMBOK is on the hard skills, which are deemed necessary for achieving project objectives. There is very little emphasis on soft skills in the PMBOK. Pant and Baroudi (2007) point to the fact that the coverage of soft skills and aspects relating to team effectiveness appear to be inadequately covered in project management manuals and the project management literature. Furthermore, Pant and Baroudi (2007), identify soft skills in managing projects as the missing link to critical project success. Finally, because of its widespread use within the construction industry, the Project management Institute (2004) PMBOK may have a large influence as to what is considered as factors affecting team effectiveness in the construction industry.

In a construction project setting, the project manager assumes overall leadership responsibility for the team. In addition, line managers provide team leadership for their respective disciplines. During the execution of the work, regular meetings are held at the project level to align the team on issues relating to the project. In addition, aspects such as progress and goals are discussed during the meetings. Typically, such meetings are facilitated by the project manager providing overall direction and managing group dynamics. A typical project organisation structure as used in the construction industry is illustrated in Figure 1.

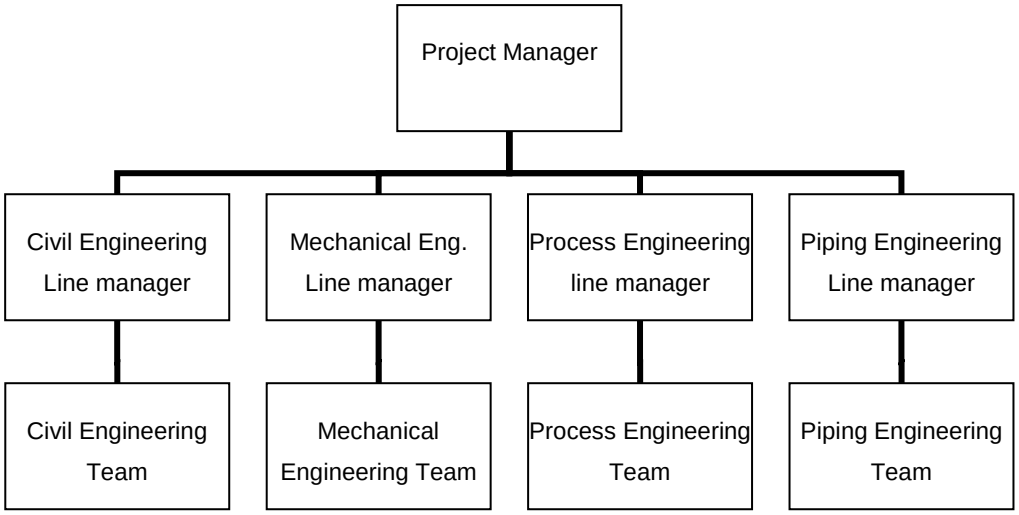


Figure 1 : A typical project organisation chart

2.4. Team Effectiveness

Team effectiveness has been a well-researched concept for a number of years (Cohen & Bailey, 1997; Hackman, 1987; Katzenbach & Smith, 1993). Much of the organisational research has addressed the aspects required for effective teams, Loo (2002). Furthermore, in organisations there is increased awareness of the importance of understanding the factors that affect team effectiveness. It is important for managers to have an understanding of the factors that make teams effective as this may allow managers to manage team dynamics better and achieve results.

With the increased awareness of the use of teams, there is however no single accepted definition as to what team effectiveness is, and what defines team effectiveness. Some authors consider performance outcomes to be the measure for team effectiveness while others define team effectiveness in terms of both high performance and employee quality of work life (Hackman, 1987; Katzenbach & Smith, 1993). A comprehensive definition of team effectiveness is given by Sundtrom (1999):

> Effectiveness starts with meeting the performance expectations of those who receive, use or review the team's output. This usually means meeting the expectations of a manager, customer inside or

> outside organisation, and possibly others. Effectiveness also includes something more; meeting members' own expectations of satisfying work and working relationship in the team. As long as members' expectations and needs are met, the team retains its viability as a work unit (p.9).

The definition by Sundstrom (1999) describes team effectiveness in terms of two outcomes, which are performance and team member viability. Sundstrom et al., (1990, p.122) define performance as "acceptability of output to customers within or outside the organisations who receive team products, services, and information, decisions, or performance events (such as presentations or competitions)". This definition highlights the fact that first and foremost, a team must achieve business objectives for it to be considered effective.

The second objective identified by Sundstrom (1999) is team member viability. Sundstrom (1999) argues that the level of team member viability has to be considered as an important aspect of team effectiveness. According to Sundstrom et al., (1990) team member viability can be defined as member's satisfaction, participation and willingness to continue working together. Hackman (1987) cited in Bushe and Coetzer (2007) provides an expansive definition by expanding team viability to cover two separate constructs, which are, maintaining the ability of the team members to work together again in the future and satisfaction of group members needs.

Nordqvist et al., (2003) point to the fact that focusing only in achieving performance objectives can be a deceptive measure of team effectiveness. Hence, an effective team should be evaluated for both performance and team member viability objectives. The result of focussing on one set of objectives, for example, is that a team may achieve its performance goals; however, members may not want to be involved with the same team in future. Lastly, it must also be noted that an effective team may also fail to reach its performance objectives because the objectives were unrealistic (Cohen & Bailey, 1997).

2.5. Measurement of Team Effectiveness

A detailed literature review of existing literature on team effectiveness was conducted by Campion, Medsker and Higgs (1993), who identified three groups of measures for work group effectiveness, and classified them as productivity, satisfaction and managers judgement of effectiveness. Similar to Campion et al., (1993), Cohen and Bailey (1997) give three categories of team effectiveness measurements, which they defined as (1) performance effectiveness, assessed in terms of quantity and quality of outputs, (2) attitudes and lastly, (3) behavioural outcomes. In their study, Cohen and Bailey (1997) conducted an extensive review on team effectiveness for literature published between 1990 and 1996, and studied this in a number of different types of teams, including project teams. In their study, it was concluded that most of the existing studies in this area tend to focus on performance measures. The performance measures identified included items such as, adherence to budgets, adherence to schedule, project quality, overall performance or efficiency. Finally, in a recent study, Mathieu, Maynard, Rapp and Gilson (2008) have come up with similar conclusions as those drawn by Cohen and Bailey (1997) on team effectiveness measurement, also pointing out that a lot of the existing literature only focuses on performance measurement and does not include affective outcomes.

According to Campion et al., (1993), the inclusion of productivity criteria enhances the objectivity of the effectiveness evaluation, and it avoids the sole reliance on affective outcomes. Sundstrom et al., (1990) have also echoed the need for performance measurement as part of team effectiveness. Traditionally, performance measurements have focussed on aspects relating to accomplishing core business objectives, which may include meeting production targets, adherence to cost and schedule, profitability, as well as sales revenue produced by sales team (Campion et al., 1993; Cohen & Bailey, 1997; Sundstrom et al., 1990).

A number of scholars have developed diagnostic instruments that can be used to measure work team effectiveness, addressing both affective and

performance outcomes. This includes instruments such as the Team Diagnostic Survey (Hackman & Wagemen, 2002).Through the use of questionnaires' the instruments measure the effectiveness of teams through the surveying of the members and leaders of teams. The assessment tools examine factors that are considered to affect team effectiveness, such as conflict, cohesion, potency, social support, communication etc. Similar to the above, other scholars have produced work group characteristic measures to measure effectiveness in work teams (Campion et al., 1993; Lencioni, 2005). Lastly, according to Campion et al., (1993) measuring team effectiveness may allow the team to identify areas of weakness or strength, and ensure that the team members are in alignment with the objectives specified.

2.6. Team Effectiveness Models

Continued research into team effectiveness has resulted into a number of team effectiveness models. Team effectiveness models proposed by different researchers in the literature review focus on team effectiveness models in general - the researcher has not yet come across a team effectiveness model specific to project teams within the construction industry in South Africa. Different clusters of team effectiveness models have emerged over the years. A review of the literature has identified three prominent clusters in the realm of team effectiveness. The clusters or groups included those that are based on the input- process-output (I-P-O) framework, those that focus on the contextual environment and finally those that focus on components of teams. The background to the different clusters of team effectiveness theory is discussed below;

- The Input-Process-Output (I-P-O) heuristic is perhaps the oldest framework for studying team effectiveness. This framework was purported by Mcgrath (1964) about 50 years ago. According to Kozlowski and Ilgen (2006), in this framework, inputs refer to the factors that enable or constrain effectiveness. Processes mediate the translation of inputs to outcomes. Lastly, outcomes are the results of the team activity (performance and viability). Since its conceptualisation, different

variations of the theory have emerged, and are presented in literature with minor modifications (Cannon-Bowers, Tannenbaum, Salas & Volpe, 1995; Tannenbaum, Beard, & Salas, 1992; Driskell, Salas & Hogan, 1987; Kozlowski & Ilgen, 2006; Sundstrom 1999; Thompson, 2007). The criticism of the I-P-O heuristic has been that it takes a static view of team effectiveness (Kozlowski & Igen, 2006).

- Some scholars have moved away from the I-P-O modelling, arguing that team effectiveness is more of process than an end state (Hackman, 1987; Sundtrom, 1999).Compared to the linear relationship presented in the I-P-O heuristic, (Hackman, 1987) argues that instead of viewing team effectiveness as static process, we should take cognisance of the fact that as groups evaluate their collective performance as they work, evaluations affect group processes, which influence subsequent performance. This has been noted to cause both positive and negative self reinforcing spirals. Finally, the emphasis in this cluster is that teams exist within a larger organisational context and elements of the organisation have an influence as to how the team becomes effective.

- The last cluster of models focuses on components of the team (Campion et al., 1993; Larson & LaFasto, 2001; Lencioni, 2005; MacFadzean, 2001). These models move completely away from the I-P-O methodology, as they simply examine the relationship between design characteristics and various outcomes. There is no distinction made between processes and inputs. There is also less emphasis on the mechanics of team effectiveness, but rather the focus is on the factors that need to be present for a team to be effective. While most group research has been done on groups in laboratory settings, models in this cluster focused on groups within a work setting.

The cluster focusing on components of teams is selected for the purposes of the study. Four models have been selected to be reviewed. Since the study addresses factors affecting team effectiveness, models focussing on team characteristics or team components have been selected for the purpose of this

review. Models from other clusters have been excluded from the literature review as they may not be relevant to the current study. The literature review is limited only to the models believed to have most relevance to project teams and to the study as they focus on factors affecting team effectiveness. The models which will be discussed include (Campion et al., 1993; Larson and LaFasto, 2001; Lencioni, 2005; MacFadzean, 2001). The selected models will highlight factors that researchers have identified to affect team effectiveness.

2.3.1 Campion, Medsker and Higgins (1993)

The model purported by Campion et al., (1993), is based on similar studies to Gladstein (1984), Hackman (1987) and Guzzo and Shea (1992). In general, the model examines the relationship between design factors and various outcomes. According to Cohen and Bailey (1997, p. 243) “the design factors refer to those features of the task, group and organisation that can be directly manipulated by managers to create the conditions for effective performance”.

Following a literature survey, Campion, et al., (1993) derived five common themes of work group characteristics that may be related to effectiveness. The themes that were identified include: job design, interdependence, composition, context and process. The five themes that were derived contained 19 group characteristics. Figure 2 illustrates design factors grouped into five distinct categories together with the effectiveness criteria. Data were collected from teams in a field setting. The model relates team characteristics to some effectiveness criteria. Lastly, the study is rigorous and consistent with most theories in terms of the themes that were identified.

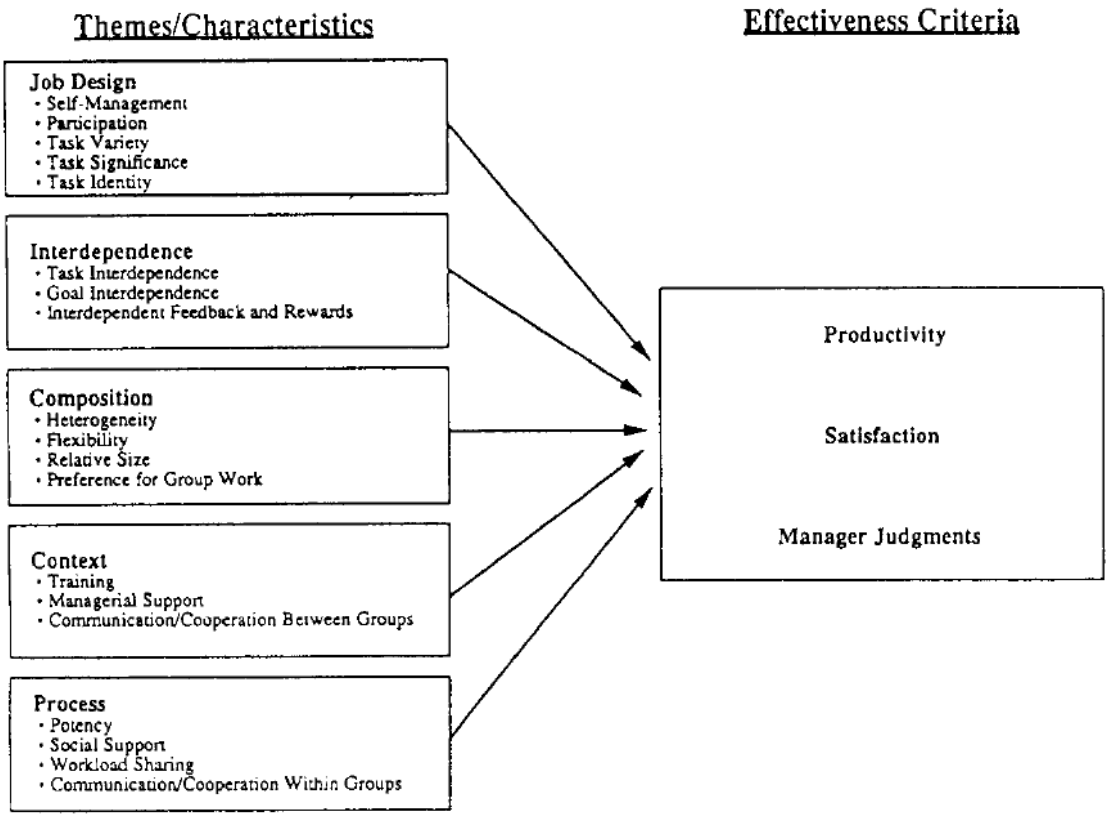


Figure 2 : Themes and characteristics related to workgroup effectiveness (Campion, Medsker and Higgins, 1993)

The advantages of the model of team effectiveness purported by Campion et al., (1993) are that it emphasises task design, which is important in project teams (Cohen & Bailey, 1997). In addition, it differentiates between team outcomes and task outcomes in terms of group effectiveness. Furthermore, the model covers organisational context which is important for teams (Hackman, 1987). A potential disadvantage of this model is that it does not place sufficient emphasis on the role of leadership in team effectiveness. Team leadership has been shown to have an influence on the other team effectiveness characteristics (Zaccaro, Rittman & Marks, 2001; Burke et al., 2006).

2.3.2 MacFadzean (2001)

The model purported by MacFadzean (2001) also focuses on five levels, which are referred to as attention to task, attention to meeting, attention to team structure, attention to team dynamics, and attention to team trust. Similar to the model purported by Lencioni (2005), in this framework, the team needs to complete one stage before moving over to the next level. At the highest level, which is stage five, the team must have addressed the key factors found between stages one to four. The model developed by MacFadzean (2001) is illustrated in Figure 3.

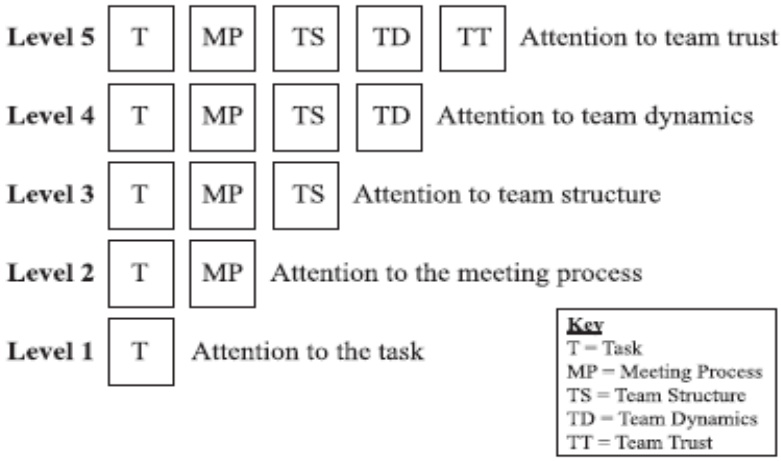


Figure 3: The attention steps for facilitators (MacFadzean 2001)

The first stage in this model is attention to task. According to MacFadzean (2001) those attentive to the task only, are concerned with getting the job done, and that this can only occur when the task is simple or routine. The second stage in this model is attention to team structure. Team structure helps the team to stay focused throughout, and also sets direction, thereby reducing distractions within the team. Level three of the model is attention to team development. As the group develops, attention is also focused on the group participants. Level three teams are aware of the characteristics of the roles and responsibilities that each member should take.

In addition to the task, a fourth aspect identified in this model is attention to team dynamics. According to Miranda and Bostrom (1997) cited in MacFadzean

(2001), the group members tend to be more satisfied with their output if there is equality in participation. The last stage identified by the author was attention to team trust. MacFadzean (2001) argues that when there is no team trust members tend to be reserved for fear of being ridiculed. Because of this problem, it may result in group think where in a team, there is fear of conflict.

In conclusion, the model presents five steps that are referred to as attention steps for facilitators. This model argues that moderating these steps may allow a team to be effective. In addition, the model does well in highlighting the importance of the hierarchal progression between the different factors, showing the need for some of the factors to be in place before other factors can be implemented. However, the model ignores aspects relating to the organisational environment which may facilitate or hinder the team effectiveness. Furthermore, this model does not consider team leadership as one of the team effectiveness factors.

2.3.3 LaFasto and Larson (2001)

Larson and LaFasto (2001) conducted a study over a period of three years and interviewed members of about 75 teams. The teams that were interviewed were selected from a wide range of organisations. Furthermore, the teams interviewed were drawn from different types of teams: management teams, sports teams, project teams, and production teams. Larson and LaFasto (2001) posed the following question to different teams: what are the characteristics, features, or attributes of effectively functioning teams, and ineffective teams?

The following factors were compiled from the results of the study:

- A team must have clear and inspiring shared goals. Members of winning teams know why their group exists, and they believe that purpose is important and worthwhile.
- A results-driven structure. Members of winning teams focus on getting the job done in the most effective manner. They do whatever is necessary to accomplish the task.
- Competent team members. Members of winning teams have the skill

necessary to accomplish their goals.

- Unified commitment. People in successful teams put the group's goals above their personal interests.
- Collaborative climate. People in successful teams trust and support one another.
- Standards of excellence. In winning teams, doing outstanding work is an important norm.
- External support and recognition. Successful teams need an appreciative audience that recognizes their effort and provides the resources necessary to get the job done.
- Principled leadership. Winning teams usually have leaders who can create a vision of the group's purpose, and challenge members to get the job done.

The factors that were identified by Larson and Lafasto (2001) display both performance and social states that need to be achieved by the team to be considered effective. The factors show both performance and team member viability and agree well with the literature on team effectiveness (Cohen & Bailey, 1997; Hackman, 1987; Sundstrom, 1999). Finally, the model that is purported by Larson and LaFasto (2001) puts emphasis on organisational context as well as the role of team leadership, which is ignored in the models mentioned previously. In addition, the advantage with this model is that the teams were observed in actual work settings rather than teams observed in laboratory settings.

2.3.4 Lencioni (2005)

Lencioni (2005) believes that all teams have the potential to be dysfunctional and therefore proposes that in order to improve the functioning of a team, it is essential to understand the type and level of dysfunction inherent in a team. The model of team effectiveness presented by the author presents a model with five levels and requires that each level must be completed first for the team to move to the next level – there is hierarchal progression between the different

levels. The different levels are illustrated in Figure 4.



Figure 4: The five dysfunction of teams (Lencioni 2005)

The first level identified is absence of trust. At this level, there is unwillingness from the team members to be vulnerable. The rationale behind the first level is that team members who are not genuinely open with one another about their mistakes and weaknesses make it impossible to build a foundation of trust. The second stage identified is fear of conflict. Teams in stage two that lack trust are incapable of engaging in passionate debate of ideas.

Lack of commitment is the third stage in the framework. When teams members cannot have their views shared during a meeting, it is unlikely that they will commit to decisions taken during the meeting, even though they may pretend to be in agreement. The fourth stage identified in the model is avoidance of accountability. Without committing to a clear plan of action, even the most focused and driven people often hesitate to call their peers on actions and behaviours that seem counterproductive to the good of the team. The last stage identified in the model is inattention to results. Here, the team members put their individual needs (career, recognition) ahead of the needs of the group.

It must be noted that Lencioni (2005) does not provide any corresponding literature or implications from other work that supports the ideas purported in the book. However, it may be said that the content of Lencioni's model is consistent with the theory purported by Zaccaro et al., (2001) – the difference

being that the model by Lencioni (2005) ignores team leadership.

In conclusion, this model argues that addressing the factors identified as primary causes for dysfunction of a team may allow a team to be effective. In addition, the model does well in highlighting the importance of the hierarchal progression between the different factors, showing the need for some of the factors to be in place before other factors can be implemented. However, the model ignores aspects relating to the organisational environment which may facilitate or hinder the team effectiveness. Furthermore, this model does not consider team leadership as one of the team effectiveness factors.

2.7. Summary of Models

A Summary of the different models is illustrated in Table 1. In addition, in this section a comparison of the different models is presented, with the model by Larson and LaFasto (2001) used as a basis for the comparison. The model presented by Larson and LaFasto (2001) is by far the most detailed model, with up to eight factors; hence, it is used as a basis for the comparison for the factors affecting team effectiveness in the construction industry in South Africa. This model covers aspects relating to internal processes as well as aspects relating to the team context. Furthermore, this model is extensive with regards to both performance objectives and team viability. In addition, this model covers team leadership, which is not covered by any of the other models.

It is interesting to note that there are a number of similarities between the different models. The model by Lencioni (2005) and MacFadzean (2001) compare well with each other. Both models cover aspects that are internal to the team such as results, commitment and collaboration. However, when these models are compared with the model by Larson and LaFasto (2001) they tend to ignore aspects relating to the organisation context as well as team leadership, which has been shown to be necessary for the team to be effective. Unlike the models by Lencioni (2005) and MacFadzean (2001), the model developed by Campion et al. (1993) is comprehensive with up to 19 group characteristics grouped under five key themes. Unlike the other models, this

model clearly defines measurement objectives in the form of effectiveness criteria. Furthermore, it does well in addressing organisational context. However, this model also does not cover team leadership which has been shown to be important for project teams.

Table 1 : Summary of Models

Factor (Larson and Lafasto 2001)	Campion et al (1993)	Lencioni (2005)	MacFadzean (2001)
Clear and inspiring Goal	**X**	☑	**X**
Results driven	☑	☑	☑
Competent Team (skill)	☑	**X**	**X**
Commitment	☑	☑	☑
Collaboration	☑	☑	☑
Standards of excellence	☑	☑	☑
External Support and Recognition	☑	**X**	**X**
Principled Leadership	**X**	**X**	**X**

☑ - Covered in model

X – Not covered in model

2.8. Conclusion of Literature Review

The literature review has demonstrated that the use of teams is a critical component for organisation performance. In addition, it has identified that there are different types of teams used in organisations today. Most importantly, the literature review highlighted that not all teams may be effective; however, there

are factors that need to be present for teams to be effective. The factors that need to be present are covered by a number of researchers. The researchers have come up with different models for factors affecting team effectiveness. Of the frameworks reviewed, there are some similarities between the different frameworks such as the collaboration, results and commitment. With regards to performance objectives both performance and team member viability objectives are considered as a measure of effectiveness.

In conclusion, although there were a number of team effectiveness models that were identified in the literature review, none of the models specifically address factors affecting team effectiveness in the construction industry in South Africa.

2.3.5 Research Question 1

What are the factors affecting team effectiveness in the construction industry in South Africa?

CHAPTER 3: RESEARCH METHODOLOGY

This section describes the methodology that was used to conduct this research. This will be achieved by a review of the research methodology. This will be followed by a discussion on the research design, population and sample and the research instrument. In addition, the procedure for data collection will be discussed, including data collection and interpretation. Finally, the section will discuss limitations, validity and reliability of the study.

3.1 Research methodology /paradigm

The qualitative research approach is the most appropriate method for this study. Qualitative research is derived from ethnographic methods, which can be described as “descriptive design”. According to Welman, Kruger and Mitchell (2005), this method is applicable where investigations are conducted among individuals or groups or within groups, communities or organisations. Rallis and Rossman (2011) assert that the purpose of conducting qualitative research is to generate knowledge that is learnt from the social world. Furthermore, according to Willig (2008, p.158), “the qualitative method enables a researcher to study meanings. It allows the researcher to tap into the perspectives and interpretations of participants”. Therefore, since this study was to investigate factors affecting team effectiveness in the construction industry in South Africa, qualitative research was the most appropriate method to use.

The research was explorative and descriptive in nature. In-depth semi-structured interviews were selected as a means to complete the research, because of the need to probe and ask follow up questions. The interviews took 15 to 30 minutes to conduct. Welman et al., (2005) note that unstructured interviews are the most common method used for conducting explorative research in order to determine key findings in a particular area. However, it is noted that in this study, semi-structured interviews were used, which was considered the most suited method for this research. According to DiCicco-Bloom and Crabtree (2006), semi-structured interviews are normally prepared using a set of prearranged open-ended questions, with other questions arising

during the interview process.

The interviews revolved around a few questions - prompts and guiding questions were used (Appendix B). A primary feature of qualitative research is that individuals will be giving their experience through interaction with social worlds, (Merriam, 2009); based on the questions they are asked. The respondents were guaranteed anonymity and were made to feel free in order to allow them to express their feelings and thoughts (Welman et al., 2005); the study therefore assumed that the respondents were truthful.

3.2 Research Design

Due to the subjective nature of the research and the fact that data gathering relied on individuals having to describe their experiences, an interpretive study was conducted. The use of an interpretive study is supported by Wahyuni (2012), who argues that interpretivism promises a contribution to constructivism. In addition, Frels and Onwuegbuzie (2012) have identified two advantages of doing an interpretative approach are it's usefulness in documenting the details of the society under study, and also because changing perspectives is welcome, especially where a single truth does not exist. It must be noted that although there are advantages to an interpretive approach, there are however, also some disadvantages. The disadvantages are that there may be influences on the study resulting from the researcher's personal perspectives and assumptions (Frels & Onwuegbuzie, 2012).

3.3 Population and sample

3.3.1 Population

The population was drawn from managers of companies within the construction industry in South Africa. The population comprised of individuals with experience in leading multi disciplinary project teams in the construction industry in South Africa. The participants interviewed have gained their experience by working for companies that utilise project teams to deliver construction projects.

3.3.2 Sample and sampling method

Leedy & Ormrod (2001) suggest that qualitative researchers should select a few people who can provide the most comprehensive insight into the problem being investigated as opposed to selecting a large sample in order to make a generalisation. The researcher conducted ten interviews. The sample consisted of ten managers of South African companies within the construction industry. The respondents were selected for their knowledge and experience; hence a non-random purposive sampling method was deployed. Table 2 is a list of the interview respondents:

Table 2: List of companies and respondents interviewed

Company Name	No. Sampled	Respondents
Fluor SA (Pty) Ltd	3	Project manager
Thyssen Krupp - Udhe	2	Project manager
Foster Wheeler SA (Pty) Ltd	2	Project manager
Group 5	2	Project manager
KBR	1	Project manager

3.4 Procedure for data collection

Data were collected through interviews, and the interviews took place at the respondents' premises. The conversations were recorded and notes were taken.

3.5 Data analysis and interpretation

The data analysis and interpretation process followed a thematic analysis approach. Halloway and Todres (2003) cited in Braun and Clark (2006) describes thematic analysis as the foundation of qualitative analysis and that "thematizing meanings" are generic skills which are shared throughout the data analysis realm of qualitative research.

Braun and Clark (2006) give guidance on the steps to be followed when performing a thematic analysis. These steps served as the guide for the data analysis for this research. The thematic analysis steps are presented in Table 3.

Table 3: Phases of thematic analysis

Phase	Description
Familiarise yourself with the data	If it is necessary transcribe the data, read the data preferably more than once and jot down initial ideas.
Generate initial codes	In a systematic manner, code the interesting items of the data and gather the data that is significant to each code.
Search for themes	Pool codes into possible themes, and gather all the data that is important to each potential theme.
Review Themes	Confirm that the themes make sense relative to the codes and the data set and generate a thematic ‘map’ of the analysis.
Define and name themes	‘Sharpen the saw’, by performing iterative analysis in order to refine themes and the overall story telling of the analysis. Produce clear definitions and names.
Write the report	The final analysis must be related back to the literature and research question in order to produce an academic report.

3.6 Limitations of the study

There are three limitations identified in the current study. Firstly, the subjective nature of the study impacts the quality of this research. Secondly, the researcher's influence is unavoidable. Lastly, the nature of this research limits the scope, and qualitative research lacks the same degree of certainty one can extrapolate this research to a larger population, as can be done with quantitative research.

3.7 Validity and reliability

Lincoln and Guba (1985) cited in Kalof, Dan and Dietz 2008 give four criteria to be used for evaluating the trustworthiness of qualitative research. The given criteria are credibility, transferability, dependability and confirmability. Using well known terminology, it may be referred to as internal validity, external validity, reliability and objectivity respectively (Wahyuni, 2012).

3.7.1 External validity

According to Thomas and Magilvy (2011), external validity, relates to the transferability of the research to the extent that other groups' can apply the study within other contexts using different respondents. Purposive sampling will be done when the study is performed. Managers from different companies will be interviewed as part of the study. In addition, the recording and transcribing of the interviews will ensure that sufficient detail is collected during the interviews.

While South African construction companies are being used as the population from which the study is done, other project managers in other countries outside of South Africa will derive value from this work. This is because the construction execution models used in South Africa are same as what is used else were in the world.

3.7.2 Internal validity

Internal validity deals with the credibility of the study. This means that what was intended to be tested has been tested and the data demonstrates the social

reality (Wahyuni, 2012). The same question and main themes and ideas were asked in a uniform manner in each interview to ensure internal consistency.

Quality assurance was done through feedback to the respondents, confirming the understanding of their representation – extended engagement was done during the interview process. Member checks were done to test the report with the study participants before sharing it in the final form.

3.7.3 Reliability

For reliability in qualitative research, the reproduction of research results need not be exact, but dependable, whereby the quality of the results are consistent, and enhance understanding of the phenomena being studied (Collingridge & Gantt, 2008). Reliability was ensured in two ways. Firstly, the interviewees were guaranteed confidentiality, which allowed them to share their experience and knowledge truthfully. Secondly, a set of criteria was stipulated for selecting individuals to be interviewed to provide assurance that the respondents had acceptable and related levels of experience in the main areas of the research question.

CHAPTER 4: PRESENTATION OF RESULTS

4.1 Introduction

This chapter presents results of the research conducted. The chapter will begin with an introductory discussion on the profile of the respondents. Thereafter, a summary of the core-themes will be presented. A thematic map is also presented, which was produced from analysing data gathered from the research question. The thematic map will be used to present the core themes and their relationships to the sub – themes. This will be followed by a brief description of the sub-themes related to the research question. Lastly, this chapter will conclude with a short summary of the results of the study.

4.2 Demographic profile of respondents

The demographics of the research sample were project managers of companies that have operations in the construction industry in South Africa. All the respondents had a minimum of 15 years of experience in the construction industry. In addition, all the respondents had a minimum five years of working experience in their role as project managers in the construction industry. All the respondents manage project teams that are involved in the execution of projects within the construction industry.

4.3 Results pertaining to Research Question 1

Table 4 is a list of all the core themes that were extracted from the ten interviews. Varying perceptions were provided by the respondents in response to the research question. Firstly, in terms of effectiveness outcomes respondents considered aspects relating to performance (cost, safety, schedule, productivity, budget and profitability), client perception of project outcomes and lastly, team member satisfaction. In analysing the responses, the information by the respondents resulted in the formation of sub-themes. The respondents emphasised three core themes, which are: team process factors,

organisational context factors and leadership process factors. The sub-themes are used to provide an understanding of the core themes. Figure 5, is a thematic map of the factors affecting team effective in the construction industry in South Africa. A more detailed discussion continues in Chapter 5, with each sub-theme serving as a sub-heading under the core themes where applicable.

Table 4 : Core themes extracted from the results

1	Team Process factors
2	Organisational environment factors
3	Leadership Process factors

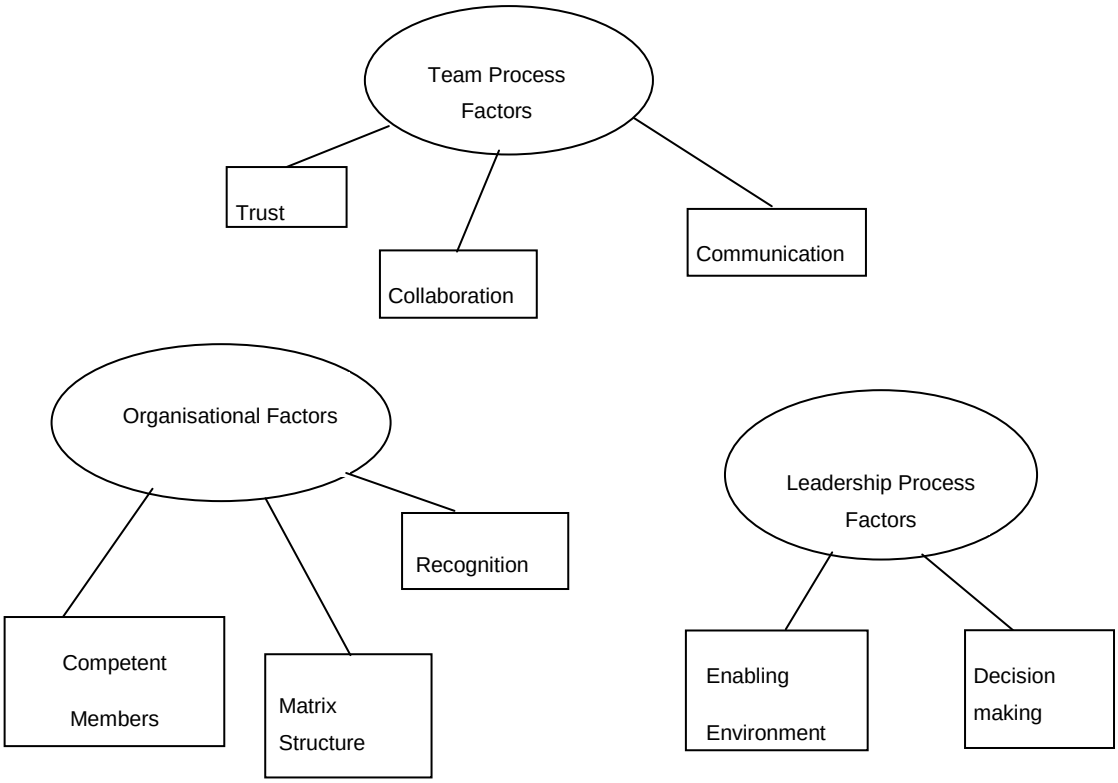


Figure 5: Thematic map of the factors affecting team effectiveness in the construction industry in South Africa

4.1.1 Team process factors

Team processes factors were highlighted by the respondents as affecting team effectiveness in the construction industry. Team process factors include aspects relating to collaboration, communication and trust. The respondents noted that the construction industry depends largely on how well individuals work together as a team to achieve the project objectives. It was found that critical elements for an effective team included elements such as, how the team members interact with one another, as well as how the members of the team interact with external stakeholders, the client. Sub-themes for team process factors that came out of the interviews include the following:

- Collaboration: Collaboration was found to have a positive and significant effect on team effectiveness. Teams that that were characterised by a high level of collaboration, were found to be more effective when compared to teams where there was little or no collaboration – this was attributed to the high level of cooperation required within the project execution environment within the construction industry.

- Communication: Effective internal communication was found to affect team effectiveness - it was found that good communication allowed for the sharing of information, knowledge and also for the giving and receiving of feedback. In addition, clear internal communication also allowed for the sharing of project objectives to the project team and also ensured that the team was aligned with its goals. On the other hand, external communication with client was also found to positively affect the effectiveness of the team - good external communication positively affected client's perception of the project success.

- Trust: Trust was found to have a moderate effect on team effectiveness. It was found that teams in trusting environment were confident in their decision making, which greatly reduced the decision making cycle. In addition, members of trusting teams were comfortable to share their views, which positively affected the effectiveness of the team. Lastly, it was found that people in trusting teams were not afraid to alert the project leadership when things went wrong within the project.

4.1.2 Organisational factors

It was found that organisational factors affect team effectiveness in the construction industry. Three sub-themes were identified under organisational context factors, and these were: organisational matrix structure, competent resources, and recognition. The sub-themes for organisational context factors are discussed individually below:

- The matrix organisation structure: It was found that the matrix organisational structure, which is commonly used in the construction

industry, affects the effectiveness of the teams. The matrix structure was seen to be related to the team process factors, in that it indirectly affects cooperation between the team members, information sharing as well as how the leader manages his team.

- Competent resources: Having skilled resources was identified as an important factor that contributes to team effectiveness. If a team does not have the required skills it will not be able to meet its performance objectives.

- Recognition: Having a recognition system in place in an organisation to reward the members of teams was found to positively affect team effectiveness in the construction industry. In addition, it was established that having a recognition system in place that recognises the individual team member contributions, also positively affects team effectiveness.

4.1.3 Leadership

The leader's performance was found to affect the effectiveness of the team. Creating of an enabling environment and decision making was seen to affect the effectiveness of teams. Good leadership was seen by the respondents to positively affect team effectiveness, in that it ensured team members were aware as to what needed to be done and how it can be done in order to meet the project objectives.

- Enabling environment: Effective leadership was found as creating an enabling environment where members can work together in delivering the project objectives. Creating an enabling environment was found to positively affect the other team process factors, like coordination, trust and communication. Hence, creating an enabling environment positively affected team effectiveness.

- Decision making: For the team to be effective, the team requires decisions to be made by the leader. It was found that decision making was critical within a team. This was attributed to the fact that when

decisions are made, it removes ambiguity on what needs to be done, how it needs to be done and when it needs to be done - thereby allowing the team to move forward with planned activities. Hence, decision making in a team was found to affect team effectiveness.

4.4 Summary of the results

In summary, the demographic information collected for this research is relevant to the study since the respondents were all project managers in the construction industry, and they have extensive experience in working with teams in the construction industry. The ten respondents confirmed some of the findings discussed in the literature review section, Chapter 2. This chapter was able to establish agreement between the research question and the perspectives shared by the respondents. This chapter also established other factors beyond the ones that were originally identified in the literature review.

CHAPTER 5: ANALYSIS AND DISCUSSION OF THE RESULTS

5.1 Introduction

This chapter discusses and explains the findings from the interviews. The chapter begins with a detailed discussion on the demographic profile of the respondents. Thereafter, a discussion pertaining to the research question follows, providing a detailed account of the findings relating to each core theme and sub-theme. Lastly this chapter will close with a conclusion section summarising the findings.

5.2 Demographic profile of respondents

Interviews were conducted with 10 project managers from 5 construction companies in South Africa. All the project managers that were interviewed managed project teams in multi-disciplinary environment within the construction industry. All the respondents had a minimum of 15 years experience in the construction industry, with more than 5 years experience as project managers.

5.3 Discussion pertaining to research question 1

This section evaluates the themes derived from the answers provided by the respondents to the research question. Reference is made to the literature review section where applicable.

Research Question: What are the factors affecting team effectiveness in the construction industry in South Africa?

5.4 Team process factors

Respondents highlighted a number of factors that were grouped together as sub-themes. The factors identified during the interview include: collaboration,

communication and trust.

Respondent number 7 summarised the effect of team process factors as follows

> "To find out how the project is doing, I stand up and look through the project task team area. If I see people in groups of three or four, from different disciplines, talking to one another, and engaging one another, then I know how the project is doing".

The respondent highlights the following issues regarding the working of a team in the construction industry:

- The first issue raised by the respondent is that he expects to see different disciplines talking to one another – this aspects speaks directly to collaboration
- The next issue, which is subsumed under collaboration, is the fact that since they are talking to one another and sharing information, communication is assumed to happen between the different disciplines – this issue talks about communication
- The last aspect that was identified by the respondent is that since the team members come together to discuss issues, they trust each other enough to actually share their views regarding project issues – this last aspect relates to trust

The process factors are discussed individually below;

5.4.1 Collaboration

All the respondents commented on collaboration and argued that collaboration positively affects team effectiveness. According to the respondents, because of the multi-disciplinary nature of the construction industry, collaboration plays a pivotal role in project delivery. This, the respondents attributed to the high level of information exchange, knowledge sharing, giving of and receiving of feedback that is required during project execution within the construction

industry.

Most of the respondents made reference to collaboration surpassing individual contribution in a team. The respondents point to the fact that in as much as it is a good thing to have skilled members in your team, however, the greatest value in project execution comes as a result of the team working together. According to respondent number 1:

> "In a consulting practice, that is where individuals almost supplant the team dynamics, you are looking to individuals, with individual self managed silos….. In the project execution we do, team dynamics and the teams ability to deliver the project is more important than the individual competency, people need to be able to work together – skills, it's given that they have got to have it. It's no good having the team fail and let's say the lead engineer is a super star – that would destroy everything. You would rather have, in this hypothetical context…you would rather have a mediocre lead engineer and an excellent overall team that's delivering the results".

Similar remarks were made by respondent number 7 and 10, making note of the fact that the sharing of information and knowing what the other team members are doing also adds to the effectiveness of the team. According to the respondents, in teams that are not effective, people don't know what the other members are doing. In addition, the respondents noted that in ineffective teams the members are not aligned on what needs to be done. Respondent 5 argued that it's no point having a team where members are working in silos, and not sharing what they are doing with other team members. Hence, the respondent highlighted collaboration to affect team effectiveness. According to respondent number 5,

> "I will rather have people with the right attitude….that is a lot more important than someone with many years of experience, and doesn't communicate, share things with other departments….because if you have the wrong individuals in your project – they become black holes – you only find out that things are going wrong when you pull it out of them…."

Most of the respondents highlighted that the real benefit of a team is leverage

and synergy among the different team members. The respondents noted that as a project manager, you rely so much on the team members to work together in an effective manner to achieve project objectives. The respondents highlighted that each discipline was dependant on the next discipline. Furthermore, the respondents noted that lack of collaboration within a team negatively affects the performance of the team.

All the respondents noted that if collaboration is not achieved, where people are working in silos, the entire project suffers. In addition, the respondents highlighted the fact that because of the integrated nature of the projects environment in the construction industry; it meant that each discipline was dependant on other disciplines to actually do their work. According to respondent number 9:

> "Our work is integration from start to finish…we have a zillion disciplines, none of them can work individually, every discipline probably has at least three, four, five other disciplines that's affecting them…so if you don't have the right attitude of sharing information and also getting information…if you have the right people there, then you will see that things will work out…."

According to respondent 1, 8 and 7, without collaboration you lose that "team effect or team dynamics", making it hard for the team to achieve its objectives.

The overall results therefore were that collaboration significantly affects team effectiveness in the construction industry – this was attributed to the high level of cooperation required in the industry. This view is consistent with the literature review in that interdependence is seen as a critical element of effective teams (Larson & Lafasto, 2001; Campion et al., 1993). Both the literature review and interviewees were able to confirm that collaboration affects team effectiveness in the construction industry in South Africa.

5.4.2 Effective Communication

Respondents highlighted effective communication as important in team effectiveness. According to the respondents, effective communication is when there is both giving and reciprocating of information among the team members – inter team communication. In addition, respondent also highlighted vertical communication, that is, communication between team members and the project leader. Furthermore, respondents identified two different levels of communication: internal communication and external communication. Most of the respondents were in agreement on the significance of communication in a project team, and how it affects team.

Respondents noted that for communication to be effective there should be both giving and receiving of information at all levels. According to the respondents communication allows for the team members to give and receive feedback regarding what's happening in the project. In addition, respondents noted that the team needs to be clear with regards to the scope of work of the project. Furthermore, respondents noted that in instances where there may be changes to the scope, this also needs to be communicated to the project team. Other respondents elaborated further by noting that if communication is not sufficient within a project team, it can impact the performance of the team.

Respondent 5, 7 and 8 noted that because the project manager has to give direction, communicate decisions and deal with issues of the team as a whole, in this regard, this creates the need for good communication.

According to respondent number 1,

> "It's no use having communication in one direction, that is, the project manager only passing on information to the team. However, for the team to be effective both horizontal and vertical communication must be maintained within the team…it's strictly import that communications are clearly delivered by the team leadership and clearly understood and reciprocated by team members – that is vertical and horizontal communications".

Because of the high level of dependency on other disciplines for information, all the respondents noted that good communication was a requirement to disseminate information across the team.

According to respondent 3,

> "Just to make you understand why I say communication is important - We start of all the projects with a clear communication procedure for the team and also communication with the client. In my experience in projects I have been involved with, a lot of the times when things go wrong in a team, it's usually because things were either not communicated to the team members or they were not communicated to the client".

Respondent number 4 directly linked communication to the success that he has on his current project. According to respondent 4, effective communications is crucial to the success of the project.

> "I am lucky that I seem to communicate well, and it has made a huge impact on the project that I am on, compared to other projects that other people are managing, so, very, very important".

Another aspect of communication that was raised by the respondents was external communication. Respondents 1, 5, 6 and 8 explicitly highlighted that good communication with the client impacted how the client and the project team perceived project success. In addition, good communication affected client relationship. The respondents argued that in as far as effectiveness criteria goes, they believed that to some extent, good external communication affected the clients perception of the performance of the team.

Of interest, most of the respondents noted that if a client relationship is good, it may even override tangible deliverables such as cost and schedule. However, if managed badly it has an adverse effect on the day to day activities of the team, and also the client's perception of the project team performance.

The overall results therefore were that communication affects team effectiveness. This was attributed to the high level of information sharing and feedback that is necessary in a multi disciplinary environment. Both the

literature review and interviewees were able to confirm that communication does affect team effectiveness in the construction industry in South Africa.

5.4.3 Trust

Four of the respondents highlighted trust as a factor affecting team effectiveness. According to Respondent 1,

> "Trust is really important at all levels. A team has to accept, has to trust their leadership. I am in safe hands – If I wasn't in safe hands, I would go somewhere else, the leadership has to trust the team, and if the leadership doesn't trust its team it destroys team spirit."

What the respondents pointed out was that it is important that in a team, members of the team trust one another and also trust the leader of the team. According to respondents 3 and 5, when teams trust one another and are confident that they are trusted by the leadership of the project team, then they are not afraid to make decisions. Because projects are always under time constraint, making of decisions is critical in a project, as it eliminates delays and improves the productivity of the team, hence, trust is critical. According to respondent number 9, when referring to members of a team,

> "They should not be feeling restricted to make mistakes. Because if people are afraid of making mistakes then they won't make decisions any more – because mistakes often come from making decisions and our work at every level is all about making decisions and moving forward….If people feel that you trust them, then they feel more confident of what they are doing….and that to me, that is one of the biggest contributors".

Another issue raised was that in the absence of trust, people don't raise critical issues. According to the respondents, in the absence of trust problems get compounded until the problems cannot be resolved easily, because people were afraid to point it out. This has negative effects on the overall performance of the team. The observation made by the respondents are similar to observation made by Lencioni (2005), that members who are not genuinely open with one another about their mistakes and weaknesses make it impossible

to build a foundation of trust. According to respondent number 10,

> "I can only help you if I know what's going … it's important that individuals who are doing the work feel confident enough and free enough that they can come through that door with bad news or whatever…One of the pit falls that you sometimes have is that people are too scared of sharing a problem, they keep it to themselves and hope that it will go away, sometimes it does, but sometimes they keep quiet and it develops to a problem that cannot be resolved...that's why trust is important, the people need to know that they are in a safe environment".

Respondent 3 and 4 highlighted that trust creates an environment where people are free and comfortable to discuss things and put problems on the table. Trust fosters a culture of information sharing, which is crucial in a multi-disciplinary environment. The results of the interview moderately support the fact that trust affects team effectiveness. Only a few of the respondents argued that trust affects team effectiveness. The results of the interview were able to some extent confirm that trust does affect team effectiveness in the construction industry in South Africa.

5.5 Organisational context factors

The organisation context was highlighted to affect the effectiveness of the teams in the construction industry. Three sub-themes were formulated from the results of the interviews and these are; the matrix organisation structure, skilled resources and recognition.

5.5.1 The matrix organisation structure:

Most of the respondents noted that the matrix organisation structure, which is used in the construction industry affects team effectiveness. The respondents highlighted that under the matrix structure, a project manager does not have full control of the resources working in his team. This, the respondents noted that it makes it difficult for the project manager to manage the project – thereby creating problems in terms of delivery. This problem, the respondents noted, is

sometimes made worse when the same people are booked to work on different projects – this can negatively affect the productivity of the team.

The respondents highlighted the issue of resources, where in organisations it is common to utilise resources in a number of projects at the same time, rather than just one project. What then happens is that team members have conflicting demands, which affects the performance of the team. According to respondent number 2,

> "In the multi project environment, where you are sharing resources there is always that tension between the projects. For example, I am trying to get people temporary for a shutdown in two weeks, people are booked on other projects and the projects don't want to let them go. There is always a tension there and I am dependent on the department managers to resolve the issue".

According to respondent number 4, the organisation structure directly impacts the availability of the resources when they are needed. Hence, it affects the performance of the team.

> "If you don't manage individual allocation and time properly, then what you find is that a lot of the time people that you are relying on for your project are double booked on other projects…Or even when they were meant to be double booked, and then other project will be having problems, the project will be running late – now your key resources that you were going to rely on to be available are not available".

Other respondents highlighted the negative effect that the matrix organisation structure has on the group dynamics as a result of the project team not sitting in one area. The respondents noted that having the project team members sitting in different places in an office building negatively affects the productivity of the team.

- The ease of giving and receiving of feedback among the team members is also curtailed because of the loss of physical proximity of the team members.

- The respondents emphasised that because team members are sitting in different areas, the loss in physical proximity negatively impacts on the effectiveness of the team. Respondents argued that because the construction environment is dependent on information sharing and cooperation, this is lost when people sit in different areas in the organisation.

According to respondent number 3,

> "The team dynamic is lost because of the matrix structure that we use. Because they are not full time allocated to the project they work on what they are supposed to work on – they don't sit in the task team area. You lose the cooperation that you find in a normal task area. Also, your lead is your most senior person, because he might be sitting in the task team area, your lead will have difficulty managing his team because they are sitting somewhere else and his team does not get cross-pollinated with his knowledge. You lose the team effect since only a part of the team is actually a part of the team. What you then find is that they have to wait for days before they can ask him something – which would have been different had they been sitting in the same area".

Respondent 5 highlighted issues relating to difficulty in managing performance of the team members. The respondents noted that although a project manager might be responsible for the cost and schedule deliverables, however, he does not have full control of the resources that work in his team – this the respondent attributed to the matrix structure. In the matrix structure, the project manager is dependent on the department managers to provide resources into the project. Effectively, the department manager is still responsible for the performance of those resources. Because the project manager is not fully responsible, it makes it difficult to guide a team towards a particular goal or effectively manage your team. According to respondent number 5,

> "In the construction industry we use a matrix structure, although the project managers are hired for overall responsibility for schedule and cost on the project alone or the ones that I manage, so I am solely responsible- but I am not responsible for the performance management of

> individuals - they report to the line manager and the line manager reports to the MD. I can only do so much, I can only bash on his door so many times when the people don't perform – I can only shout at his line manager so much, and then my power eventually runs out".

The literature review highlighted that successful teams need an appreciative audience that provides the resources necessary to get the job done. Although, organisational context was highlighted in the literature review (Campion et al., 1993; Larson and Lafasto, 2001), however, the issues that were raised by the respondents were not adequately covered by the literature review.

5.5.2 Recognition

The respondents noted that recognition affects team effectiveness. The respondents attributed it to the following:

- When teams know that they will be recognised for their effort, they work harder and achieve better results.
- When individual members know that there is a recognition system in place they will thrive to be different - this may also reduce the free rider effect.

Some concerns were raised by some of the respondents regarding the manner in which to apply recognition. Respondents acknowledged that at times recognition has a negative effect on the dynamics of the team, in cases where individuals are recognised in place of the team. Hence, some respondents supported the notion that that team and not individuals should be recognised.

According to respondent number 1, team recognition positively affects team effectiveness.

> "I talked about the value of team dynamics, where you recognise the team as a whole – no question about that, but you have to also go in and recognise the individual contribution that people are making". You have to make sure that the good people are getting recognition".

According to respondent number 2 and 9, recognition affects team effectiveness. The respondents pointed out that recognition has the effect that it makes people feel that their efforts are noticed by the team and organisation leadership. When this happens, these individuals will consistently strive to produce better results. According to respondent number 3,

> "I am a firm believer in recognition that you need to recognise people. If people get recognised, they will perform better. However, it's a bit of a tricky issue in the projects environment because when you recognise one individual and not another individual people get all worked up…If individuals perform, they need to be recognised, not necessarily financial recognition, they could be given opportunities in the company. However, what people need to understand, is that they need to be different to be recognised".

Although there were mixed views regarding recognition, however, the results of the interviews were consistent with the literature review. According to Larson and Lafasto, (2001), successful teams need an appreciative audience that recognizes their effort and provides the resources necessary to get the job done. Cohen and Bailey (1997) could not establish a relationship between recognition and team effectiveness.

5.5.3 Competent team members

Since this study was conducted within the construction industry, all respondents were in agreement that technical competency was a prerequisite for any person to be a member of the team. Respondents emphasised that the individuals in the team must have the necessary skills and abilities to be part of the team. Respondents were in agreement that competent team members have a positive effect on team effectiveness

According to respondent number 1,

> "It goes without saying that in the business we are in, you must have the required skills. You have to go and find those people, you cannot put people in your team who are only there as pace markers and they don't

> have nothing to offer – I would say definitely, this has a huge impact on the effectiveness of the team".

According to respondent number 2,

> "The way the matrix organisation works, which is what we subscribe to, is that department managers in theory are supposed to provide competent resources to your team – you are dependent on them to provide you with the resources you need and if this doesn't happen then your project is stuffed".

Respondents discussed competency in terms of qualification and also in terms of experience.

- Qualifications: Respondents noted that members of the team need to have the required level of education for them to contribute positively to the work of the team – this, they attributed to the fact that an individual requires to have a technical degree to be part of the team.

- Experience: Firstly, respondents discussed experience in terms of years of experience within the construction industry and familiarity with project execution. All the respondents highlighted that experienced team member's positively affected performance of the team. Respondents noted that experienced team members needed little supervision time. Experienced members positively affected the performance of the team.

5.6 Leadership

Leadership was seen as pivotal in achieving team effectiveness in the construction industry. According to the respondents, leadership drives everything that happens in the project team. Team leadership was seen as a catalyst for team process factors. The respondents highlighted that leadership in a project affected how the team performed against its project objectives. Where leadership was effective, it was found to create an enabling environment where the team could perform.

According to Respondent 4, the success on some of the projects he was involved with as a manger, stems from the fact that in general he has good leadership skills.

> "Leadership in a team is probably more important than project management, and the reason I say this is that somewhere somehow I seem to be relatively a very good leader and without knowing how or why I am a bad leader, I can tell you that the results of all the projects I do are consistently better than if I look at other people who are not what the rest of the project team considers as good leaders. So the leadership is important".

The respondents viewed leadership in terms of the leader managing resources, as well as coordinating effort between the different disciplines. There were two sub-themes that were identified under team leadership and these are; an enabling environment and decision making. The sub-themes are discussed in detail below:

5.6.1 Enabling environment

The respondents highlighted the importance of the leader as creating an enabling environment within the project team. An enabling environment in this context may include fostering of sharing of ideas, coordination and allowing member participation in discussions. An enabling environment was seen as positively affecting team process factors, thereby leading to an effective team.

According to Respondent 1,

> "What pulls a team really together is clear and ambiguous leadership. A person with vision gives direction. How the team will be at the end of the day will depend on the leader".

Respondent number 4, 7 and 8 argued that what happens in the team, how the team goes about in doing their work is largely influenced by the leader. Respondent 5 highlighted that where environment is enabling, team members are not afraid to afraid make decisions and are confident with regards to their

contributions towards achieving the group objectives. Respondent number 5 highlighted the following with regards to why creating an enabling environment affects effectiveness.

> "They should not be feeling restricted to make mistakes. Because if people are afraid of making mistakes then they won't make decisions any more – because mistakes often come from making decisions and our work at every level is all about making decisions and moving forward….If people feel that you trust them, then they feel more confident of what they are doing….and that to me, that is one of the biggest contributors".

It is concluded that in an environment where team members are empowered to make decisions and share their views, this leads to an effective team. The issues highlighted by the respondents are consistent with findings in the literature review (Zaccaro et al., 2001; Hackman, 1987) on the importance of team leadership on team effectiveness. Also, Larson and Lafasto (2001) concluded that, winning teams usually have leaders who can create a vision of the group's purpose and challenge members to get the job done.

5.6.2 Decision making

Decisive leadership was seen to have an effect on the overall project performance. This was attributed to the high pace of the projects environment, which required decisions pertaining to cost, contracts and schedule to be made. The respondents highlighted the importance of having a leader who makes decisions. According to the respondents when decisions are not made in projects, it results in project delays. According to respondent 4,

> "There is an old saying that says a fish rots from the head and that's true– if leadership is vague, inefficient and indecisive - it destroys the team. Engineers by their nature do not like indecision. If you start to waiver in decision or vacillate in your decision, you will create problems in the team and you will not achieve your goals".

Respondents noted that when decisions are not made by the project leadership, it creates confusion within the team. According to respondent 8, leadership

provides clarity to the team, whereby uncertainty is removed and the team can focus on the project objectives.

> People expect guidance and clarity - If you leave decisions for two long, you keep everyone in uncertainty – you keep everyone in cross roads…If you stay at a round-about and you keep driving around you will not make your targets…you create uncertainty

All the respondents considered leadership as positively affecting team effectiveness. Both the literature review and interviewees were able to confirm that decision making does affect team effectiveness in the construction industry in South Africa.

5.7 Conclusion

The chapter was able to validate and support the research findings with what was generated in the literature review in the different models of team effectiveness. The literature review was able to identify three dominant themes or core themes for factors affecting team effectiveness in the construction industry. The themes identified were team process factors, organisational context factors, and leadership process factors. Further to this, there were sub-themes that were identified. For team process factors, the sub-themes included aspects such as collaboration, commitment, trust and leadership. Under organisational context, the sub-themes included matrix organisational structure, recognition and competent team members. Lastly, leadership process factors included an enabling environment and decisive leadership.

Most of the factors that were identified in the literature review were confirmed by the research findings. However, matrix organisational structure was not adequately covered by the literature review. The respondents highlighted why this differed from other industries in that the projects environment subscribes to the matrix structure. This was argued by the respondents that it affects team effectiveness in the construction

industry.

Overall, the research findings were consistent with current academic literature on team effectiveness. Finally, the factors identified in literature reviewed are consistent with the research findings.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter summarizes the findings of the conducted research. The chapter then provides recommendations to stakeholders pertinent to the conducted research. Finally, the chapter concludes with suggestions for further research in the area of factors affecting team effectiveness in the construction industry in South Africa.

6.2 Conclusions of the study

Research Question: What are the factors affecting team effectiveness in the construction industry in South Africa?

Understanding the factors affecting team effective is crucial for any organisation. In instances where managers are aware of these factors, they can regulate them to the benefit of the project teams within the construction industry. Because teams are used to deliver projects, it is crucial for project managers to understand what makes project teams effective in the construction industry.

Given the complexities of today's global business environment, especially in light of the increased competitiveness, having effective teams becomes key for organisations within the construction industry. Because team effectiveness becomes a competitive advantage in the dynamic world of the construction industry, henceforth, understanding the factors that affect team effectiveness within the construction industry is crucial for any company wishing to gain competitive advantage within this sector.

This research report has, therefore, identified factors that are considered to affect team effective within the construction industry in South Africa. The research findings were mostly in line with what is currently purported

by academic literature. The main findings of this research can be summarised as follows:

Team process factors

Team process factors were noted to affect team effectiveness in the construction industry in South Africa. Team process factors include aspects such as: collaboration, communication, and trust. The findings under the different sub-themes highlighted the following:

- Collaboration was found to affect team effectiveness in the construction industry in South Africa. This was attributed to the high level of information sharing, knowledge sharing and cooperation required within the construction industry.

- Communication was found to affect team effectiveness. Two levels of communication were identified by the research and these were; internal communication and external communication. Internal communication was seen as important with regards to information exchange within the project team. Whereas, external communication had to do with maintaining good client relationship.

- There were mixed results with regards to trust. Trust in some instances was seen to affect team effectiveness - it was seen to create a safe working environment where people could share their fears and concerns. Whereas, other respondents were indifferent about the effect of trust on team effectiveness.

Organisational factors

Pertaining to the organisational factors, the research highlighted that the matrix organisational structure, competent team members and recognition affected team effectiveness.

- The matrix organisation structure mostly used in organisations in construction industry was found to have the potential of negatively

affecting the effectiveness of teams. Areas identified in the research were the potential loss of management control of the resources working in the team due to the fact that resources may not be fully owned by the project. In addition, there is also the loss of information sharing due to loss of physical proximity of team members.

- Competent team members were noted to affect team effectiveness. In essence, for one to be a member of the team they need to have the required skill and abilities.

- Recognising the team was seen to affect performance of the team. In addition, recognising of individual team members was also seen to positively affect the effectiveness of the team.

Leadership

- Enabling environment was found to directly affect the team process factors in a team. Enabling environment meant that in the team environment, members were comfortable to share their views, communicate, collaborate and trust one another. Because of this, an enabling environment was seen to positively affect team effectiveness.

- Decision making was found to be crucial in a projects environment where there are tight deadlines. Indecision was seen to negatively affect productivity of the team because when decisions are not made, people cannot continue with what they have to do. Hence, decision making was seen to affect team effectiveness.

In general, the findings of the study were mostly in line with the literature review. There were, however, differences noted between the academic literature and the research findings. These differences pertained to the organisational context. Although the literature review did cover organisational context, however, the literature did not explicitly account for the matrix organisational structure which is commonly used in the construction industry. It was shown that to some extent team effectiveness in construction industry is significantly affected by the team structure or the matrix organisation structure that is used within the construction

industry.

Lastly, it is in the best interests of managers in the construction industry to understanding the factors affecting team effectiveness within the construction industry in South Africa.

6.3 Recommendations

Project managers managing projects in the construction industry in South Africa are in a difficult position, as they have to ensure that their teams are effective. There are a number of factors that have been identified by this research which can arguably assist managers of teams in the construction industry to better manage their teams to achieve team effectiveness. Managers of companies should focus on the factors that have been identified when assembling teams, and also when managing teams within the construction industry in South Africa:

- Consider the setting up of task team areas and how a task team layout can affect the workings of the team. Try to have all your team members sitting in a single area for greater information sharing.

- Develop proper recognition mechanisms that are unambiguous. In addition, the team members need to understand how people will be recognised in the team. The recognition mechanism should recognise both the group and the individual team members.

- Develop a culture that fosters exchange of information and cooperation among the team members in project teams

- Have regular alignment meetings with the team members so that everyone is aware of the progress in the project and if there are any issues. This will also allow information to be shared between different disciplines so that everyone is working with the same piece of information.

- Engage with the discipline managers and make sure that the right calibre of candidates in terms of skills and abilities are recruited to join the company.

- Because of the high level of collaboration required, identify individuals with good interpersonal skills to be lead engineers for the different disciplines as this is a crucial role in terms of information sharing within the project.

- Ensure that the team leader (project manager) has very good communication and interpersonal skills so that he can manage the relationship with the client effectively. In addition, the project must be empowered to make decisions.

- The manager who leads a construction project must ensure that he creates an enabling environment, where people are not afraid to come forward and raise issues.

- To get the entire team aligned, the project manager needs to disseminate the scope of work document to all the team members so that every person in the team understands the project goals and objectives. In addition, any changes to the scope must be communicated to the team.

6.4 Suggestions for further research

There were a number of limitations that were experienced during the course of this research, which created more questions than answers for the researcher. Henceforth, this provided a gap for further research in this field. Possible further research could look into the following:

- The research was conducted using companies operating in the construction industry in South Africa. The research can be extended to other industries where there is also project execution.

- The research only focused on teams that are in the same task location. The research did not consider virtual teams which is now a trend in construction industry, where upfront engineering work is performed in different locations across the globe.

- The research focused on project teams that are office based, and did not consider project teams that are site based.

- So far, the researcher has not come across a diagnostic tool that can be used for measuring team effectiveness in the construction industry. There is therefore scope for such a tool to be developed.

Future research could certainly make use of what has been documented in this research in order to continue adding to the body of knowledge in this area.

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APPENDIX A

Actual Research Instrument: interview questions

What factors affect team effectiveness in the construction industry in South Africa?

Question 1

Based on your experience as a manager in the construction industry, do you believe that setting clear and inspiring goals for your team is important? If yes, why?

Question 2

Do you set up targets for your team?

Does setting targets for your team have an impact on the team effectiveness?

If yes, how?

Question 3

Do you regard having member competency as important to having an effective team?

If yes, why?

Question 4

Would you argue that it is important to have commitment in your team?

If yes, why?

Question 5

Does collaboration among team members make the team more effective?

If yes, how?

Question 6

Do you have standards of excellence that you measure your team performance against?

If, yes why do you think having standards of excellence is important in achieving team effectiveness?

Question 7

Would you argue that organisational environment has an impact on team effectiveness?

If yes, how?

Question 8

Do you believe that leadership is important for a team to be effective?

If yes, Why?

APPENDIX B

Letter to respondents

Dear Respondent,

I am completing my MBA at the University of the Witwatersrand, Johannesburg (Wits Business School). As part of my degree I am writing a research report on factors affecting team effectiveness in the construction industry in South Africa. Towards gathering data on this subject, I would be grateful if I could arrange a one hour interview with you to understand the factors that are faced by your teams. The interview will be recorded. I understand that you are extremely busy and your agreement to contribute to my research is greatly appreciated.

The interview will primarily focus on your experience as a project manager/line manager of a construction company with regards to factors affecting team effectiveness in the construction industry in South Africa. Confidentiality will be observed throughout the research process and the final report will be for academic purposes only. The recording will be destroyed after the final mark has been obtained.

I will be able to meet you at a location and time of your convenience.

Thank you for your kind assistance.

Yours sincerely,

Siboniso Mkhabela

APPENDIX C

Consistency matrix

Research problem: Identify the factors affecting team effectiveness in the construction industry in South Africa.					
Sub-problem	**Literature Review**	**Research question**	**Source of data**	**Type of data**	**Analysis**
Identify the factors affecting team effectiveness construction industry in South Africa.	Bushe & Coetzer (2007), Cohen & Bailey (1997), Campion, Medsker & Higgs (1993),Hackman (1987), Hackman & Wagemen (2002), Katzenbach & Smith (1993), Mathieu, Maynard, Rapp & Gilson (2008), Sundtrom (1999), Sundstrom, De Meuse and Futrell (1990) ,Cohen & Bailey (1997), Campion, Medsker and Higgs (1993), Hackman (1987), Kozlowski and Ilgen (2006), Larson & Lafasto (1998), Sundstrom (1999), Zaccaro, Rittman & Marks (2001)	What are the factors affecting team effectiveness in the construction industry in South Africa?	Respondents in semi-structured interviews	Qualitative data	Thematic Analysis