Optimising Construction Project Role-Player Performance

By

Andre Le Roux Hefer

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Promoter: Dr Franco Geminiani
Co-Promoter: Prof Winston Shakantu

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ABSTRACT

Authors predict major changes in the requirements to manage complex environments in the 21st century. These 21st century challenges, for Project Managers (PM) in the construction industry, are evident through the ongoing perception that the industry performance record is suboptimal. In the pursuit of performance optimisation, management disciplines developed and implemented theories and models not only to achieve what is required, but also to excel and create high-performing teams. In search of project success, researchers have also identified quantifiable variables, models, success factors and other related issues. The PM's role in the attainment of success has also been widely researched, especially the impact, influence, methods and tools related to the discipline. Nevertheless, the general concern remains, that the performance of the industry is suboptimal. This study therefore aimed to qualitatively evaluate and examine the various factors and influences on performance of a construction project team. This research applies to the motivation and environmental factors influencing project teams in the achievement of optimum performance; and in doing so, to enhance the performance of project-role players; while adding discipline-specific theory. This study has employed in-depth interview data, which were thematically analysed. The interviews were conducted in a case-study design comprising four projects in South Africa. The study concluded by emphasising the importance of how role-players RELATE to each other, and LOVE project challenges. It further noted that PMs who are MANAGING LEADERS would be most influential in the project environment; while PROCUREMENT greatly influences the project environment. Relational issues are important to role-players; and they act as MOTIVATORS, with certain issues in a project presenting both performance BARRIERS and DRIVER capabilities. Finally, project MOMENTUM changes constantly, with the current momentum direction influencing the future course thereof. In meeting the aims of the research, a Performance Optimisation Framework was developed, noting how the emergent themes co-exist in optimal performance environments. The study also developed the Project Husbandry approach, reflecting on a caring, nurturing, diligent and mature approach when managing role-players. The study recommends that the themes impacting the project-operating environment should be influenced by management and leadership, in order to optimise the performance of all the role-players involved.

ACKNOWLEDGEMENTS

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DECLARATION

I, Andre Le Roux Hefer with student number 9857424 hereby declare that the thesis for the award of the degree of Doctor of Philosophy in Construction Management is my own work and that it has not previously been submitted for assessment or completion of any postgraduate qualification at another University.

Signed: …….……………………..

Date: ……..………………. 4 Dec 2018

LIST OF DEFINITIONS

Built Environment:

- The built environment consists of buildings and all other things that have been constructed by human beings (Collins English Dictionary, 2012)
- The physical world that has been intentionally created through science and technology for the benefit of mankind (RSA Government, 2008)

Consultant:

- A person who provides expert advice professionally (Oxford Dictionaries , 2011)

Contractor:

- A person or firm that undertakes a contract to provide materials or labour to perform a service or do a job (Oxford Dictionaries , 2011)

Construction:

- The action of building something, typically a large structure; the industry of constructing buildings, roads, etc. (Oxford Dictionaries , 2011)
- The business or work of building dwellings, offices, etc. (Collins English Dictionary, 2012)

Construction Project Management:

- The management of projects within the Built Environment from conception to completion, including management of related professional services. The Construction Project Manager is the point of responsibility.(SACPCMP, 2009)

Client:

- "A person, company, etc., that seeks the advice of a professional man or woman; a customer" (Collins English Dictionary, 2012)

Hygiene Factors:

- Indicating a preventative and environmental concern that has the possibility to not "make people healthy, but it can prevent illness". Hygiene factors are

in most cases external or extrinsic to the team member (Herzberg, 1965, 1968; Werner *et al.*, 2011).

Labour:

- Workers, especially manual workers, considered collectively (Oxford Dictionaries, 2011)

Motivation:

- The force within us that arouses, directs and sustains our behaviour (Werner *et al.* 2011:82)

- Desire or willingness to do something; enthusiasm (Oxford Dictionaries, 2011)

Optimal/Optimum:

- Best or most effective (Merriam Webster Dictionary, 2011)

- The optimum or optimal level or state of something is the best level or state that it could achieve (Reverso Dictionary, 2011)

- Origin of optimum: From the Latin word *optimus*, which means 'best'.

Performance:

- How well someone or something functions, works, etc.: how well someone or something performs, or the act of doing a job, an activity, etc. (Merriam Webster Dictionary, 2011)

Phenomenon:

- A fact or situation that is observed to exist or happen, especially one whose cause or explanation is in question (Oxford Dictionaries, 2011)

Project Management:

- The application of knowledge, skills, tools, and techniques to project activities to meet the project requirements (Project Management Institute 2008:6)

Professional:

- A person engaged or qualified in a profession (Oxford Dictionaries, 2011)

Project:

- "A temporary endeavour undertaken to create a unique product, service, or result" (Project Management Institute 2008:5)

Teamwork:

- Teamwork is the cooperative effort of a group of individuals toward meeting a collective goal (Acharya, Lee and Lee, 2006)

LIST OF ACRONYMS

BE	Built Environment
CAQDAS	Computer Assisted Qualitative Data Analysis Software
CIDB	Construction Industry Development Board
CII	Construction Industry Indicators
ECI	Early Contractor Involvement
HR	Human Resources
HVAC	Heating, Ventilation and Air Conditioning
IPD	Integrated Project Delivery
IT	Information Technology
JBCC	Joint Building Contracts Committee
JCT	Job Characteristic Theory
JSE	Johannesburg Stock Exchange
KPI	Key Performance Indicator
MPA	Major Projects Association
NASA	National Aeronautics and Space Administration
NMP	Negative Project Momentum
PM	Project Manager
PMBoK	Project Management Body of Knowledge
PMI	Project Management Institute
PPM	Positive Project Momentum
QS	Quantity Surveyor

SA   South Africa

SACPCMP   South African Council for the Project and Construction
            Management Professions

SME   Small Medium Enterprise

UK   United Kingdom

US   United States (of America)

1. CHAPTER 1: THE PROBLEM AND ITS SETTING

1.1 Introduction

Various leadership and management authors/commentators are predicting a future change in the methods, tools and skills required to manage in the 21st century (Egan, 1998; Dainty, Cheng and Moore, 2003; Ballard and Howell, 2004a; Froese, 2010; Lee and Yu, 2012). Many changes in management attitude, skills, styles, judgement and ability will be required to deal with the inevitable future environmental complexity (Egan, 1998; Edum-Fotwe and McCaffer, 2000; Dainty, Cheng and Moore, 2003; Ballard and Howell, 2004a).

The 21st century brings with it many challenges for Project Managers' (PM) in the construction industry (Dave and Koskela, 2009), and these challenges are highlighted by the perception that construction industry performance is suboptimal, both nationally and internationally (Egan, 1998; Carr and Tah, 2001; Aibinu and Jagboro, 2002; Takim, Akintoye and Kelly, 2003; Ballard and Howell, 2004b; Leung, Ng and Cheung, 2004a; Assaf and Al-Hejji, 2006; Xue, Wang, Shen and Yu, 2007; Emuze, 2011; Meng, 2012). Egan emphasises that: "the industry will need to make radical changes to the processes through which it delivers its projects"(Egan, 1998).

Project Management as a professional discipline is not divorced from these future predictions, changes and patterns (Cicmil and Hodgson, 2006). Adaptation and change required of PMs is not just a requirement, but it is the catalyst towards future survival (Söderlund, 2004; Winter, Smith, Morris and Cicmil, 2006a; Kwak and Anbari, 2009). In construction, one of the many challenges faced by PMs is the ability to adapt to the changes foreseen in the overall social, business, economic and industry environments in the 21st century (Söderlund, 2004; Winter *et al.*, 2006a; Kwak and Anbari, 2009).

Operational and general management disciplines have with time developed and implemented a range of theories and models which could assist managers in optimising their team's effort; ensuring that the required outcomes are achieved (Gerber, Nel and Van Dyk, 1998; Werner, Bagraim, Cunningham, Pieterse-Landaman and Potgieter, 2011). Relative to these theories and models, there has been a drive towards optimisation of team and individual efforts to not only achieve what is required,

but also to excel and create high performing teams. Renowned motivation theorists have completed ground breaking work and can be seen as revolutionary in this field of specialisation (Verma, 1996; Gerber, Nel and Van Dyk, 1998; Werner *et al.*, 2011).

When observing performance, both Werner *et al.* (2011), Scholl (2003), McShane and Von Glinow (2013) indicate links between motivation, the operating environment and an individual team member's performance.

When relating the operational and general management disciplines with the construction Project Management (PM) environment, it is noteworthy that Project Management is essentially the management of a temporary organisation, which by definition will be working on one project which has an end goal (Project Management Institute, 2008). Project Management differs greatly from operations management and adds a complete set of intricate variables which a PM will have to constantly deal with (Ballard and Howell, 2004b; Herroelen and Leus, 2004; Shelbourn, Bouchlaghem, Anumba, Carillo and Khalfan, 2006; Bertelsen, S., Henrich, G., Koskela, L., Rooke, J., 2007; Rezgui, 2007). The Project Management Institute (2008) reflect on the difference between PM's and functional and operations managers in noting that these managers provide either oversight or take on responsibility for a defined aspect of the organisation's business.

The PM relative to construction is required to manage and lead a newly formed team of professionals from the initial concept stage to final handover of a building project (SACPCMP, 2009). Various schools of thought believe that this role could even be extended beyond the handover into operation and management of the built infrastructure (Kumaraswamy, 2011). The project teams are made up of individuals from a range of organisations which provide multidisciplinary inputs (Shelbourn *et al.*, 2006). Project teams are in most cases diverse in nationality, culture, social background, ethics, religion, seniority in business, etc. (Horwitz and Horwitz, 2007).

PMs in the South African construction industry are tasked with "the management of projects within the Built Environment from conception to completion, including management of related professional services" and "is the one point of responsibility in this regard" (SACPCMP, 2009). These regulated tasks relate strongly to the aim of construction PM to create an environment where projects are successful. Success being the overall goal of a project (Tabish and Jha, 2012).

In the constant search for a solution to the enigma of project success, researchers have over an extensive period of time identified many quantifiable variables, models, success factors and other related issues. These efforts highlighted that, in most cases, project success is a top priority and an outcome when undertaking a project (Alzahrani and Emsley, 2013). The PM's role in the attainment of success has also been widely researched, especially with regards to the impact, influence, methods and tools related to the discipline (Shenhar, Dvir, Levy and Maltz, 2001; Collins and Baccarini, 2004; Shokri-Ghasabeh and Kavousi-Chabok, 2009; Hefer, 2012). Nevertheless, the general concern remains, that industry performance is currently still suboptimal.

With reference to the above mentioned challenges and the identified performance factors (Scholl, 2003; Werner *et al.*, 2011; McShane and von Glinow, 2013), it can be argued that motivation and the environment in which role-players operate in the construction industry, would affect their performance (Herzberg, 1965, 1968).

Furthermore, in terms of Project Management, it is noteworthy that the strategies used in generic operations and general management have limitations when used in a construction project team environment. Various issues cannot be addressed or managed in the construction project team environment, in a similar manner as in operations or general management. This is due to contractual, professional and time constraints associated with projects. Typical operating constraints which would have a substantial effect on how role-players operate and perform on a project could be seen as being:

- Specific short or medium duration of projects (Odeh and Battaineh, 2001; Assaf and Al-Hejji, 2006; Sambasivan and Soon, 2007);

- Budgetary constraints and cost estimation (Lai, Wang and Wang, 2008; Guo-li, 2010; Chou, 2011);

- Team compilation/selection (Eskerod and Blichfeldt, 2005; Scott-Young and Samson, 2008);

- Distrust between role-players (Zaghloul and Hartman, 2003; Wong and Cheung, 2004; Ngowi, 2007; Wong, Cheung, Yiu and Pang, 2008);

- Contractual agreements with role-players and their respective employers (Egan, 1998; Black, Akintoye and Fitzgerald, 2000; Cumberlege, 2000; Pesämaa, Eriksson and Hair, 2009; Eriksson and Westerberg, 2011); and

- Reward systems or incentives for role players (Herzberg, 1966, 2003; Ashraf, Bandiera and Jack, 2014).

Guided by the general debates in the review of literature on performance in the construction industry, seeing that the discipline of construction PM is practiced in an industry with a defined culture/style, and relative to the mentioned performance factors, it is proposed that the nuances of motivation and performance environment factors be investigated. The understanding of the motivation and project environmental factors could:

- Enhance the industry and PM's understanding of the phenomenon of sub-optimal performance experienced by the construction project teams;

- Be a possible driver towards better project performance; and,

- Lead to higher project success rates.

Noting the above possibilities, the aim and direction of this study is to seek understanding of the current sub-optimal performance of construction role players in the project team environment in relation to the following:

- The influence of leadership in this environment;

- The effect of team dynamics, organisational culture and diversity in these teams on performance; and,

- The major performance constraints and drivers.

The understanding of the above would lead to a better understanding of issues or facts that motivate project teams towards optimum performance; to not only achieve, but exceed construction client goals in the 21st Century.

The researcher has considered various research approaches relative to the construction industry; however, various sources of the reviewed literature indicate that most construction industry studies have used a Quantitative approach (Amaratunga, Baldry, Sarshar and Newton, 2002; Adejimi, Oyediran and Ogunsanmi, 2010). In contrast to the above mentioned the researcher did undertake this research in a

Qualitative manner, in alignment with the identified research questions, based on the following:

- Very few researchers currently use a Qualitative approach;

- The qualitative research approach is a source of valuable data which could assist with possible answers to the current industry questions;

- The quest for enriching the understanding of the phenomenon; and,

- Aiming to align the methodology and approach with the research problem.

Furthermore, the study is in line with calls to further the PM discipline specific theory and thus reinforce the body of PM knowledge applicable to the Construction Project Management field (Söderlund, 2004; Winter *et al.*, 2006b; Kwak and Anbari, 2009).

The following section identifies the main research problem and question, with subsequent identification of the investigative questions.

1.2 The statement of the problem and question

Through the appreciation of current discussions and research undertaken in the construction industry, the following main research problem was identified:

Construction role player performance is currently sub-optimal.

In line with the recommendation from Creswell (2013:138) to create an "overarching central question", and following on the mentioned main problem, the following encapsulated the main research question:

How can role-players be motivated and the operating environment improved to optimise performance on a construction project?

1.3   The statement of the Investigative Questions

Through the review of literature, the following investigative questions were identified to guide the research. Creswell (2013:140) states that these investigative questions should assist in the following ways:

- "Refine the central question";

- Subdivide the central question into parts or areas of concern;

- These questions should be open-ended; and,

- The investigative questions should form the "core questions" during the investigation.

In an attempt to derive questions in line with the above mentioned, the questions were grouped in association with the three main headings in Chapter 2 (The review of the related literature), namely:

Investigative Question Headings or Themes:

Table 1: Investigative Question Headings or Themes

Heading 1:
Teams – Dynamics, Organisational Culture and Diversity:
Heading 2:
Leadership/Management – Influence and Practice
Heading 3:
Performance – Drivers, Motivators and Barriers

The relevant research investigative questions were subsequently derived and linked to the above mentioned headings reflected in the Table 2:

Investigative questions:

Table 2: Statement of the Investigative Questions

Teams – Dynamics, Organisational Culture and Diversity:
Question 1:
Question 1a: What are the team dynamics that influence project role-players' performance?
Question 1b: What environmental factors are causing dysfunction within the project teams?
Question 2:
What is the effect on performance of the combination of the various role-player organisational cultures on the projects?
Question 3:
In what ways does the diversity of role-players impact performance?
Leadership/Management – Influence and Practice
Question 4:
Sub-Question 4a: What is the influence of the project manager on the role-players' performance?
Sub-Question 4b: What management and leadership practice would be needed to enable optimum role-player performance?
Performance – Drivers, Motivators and Barriers
Question 5:
Question 5a: What are the performance barriers experienced by role-players?
Question 5b: What drives role-players to perform?
Question 5c: What motivates role-players to perform?

1.4 The Importance of the study

This section highlights the importance of the study:

- Firstly, the study is in line with calls to further the Project Management discipline specific theory and broaden the body of knowledge (Söderlund, 2004; Winter *et al.*, 2006b; Kwak and Anbari, 2009).

- Secondly, in many instances, the suboptimal performance of construction project teams has the following outcomes, which appear to threaten the future sustainability of the industry:

    - Cost overruns (Doloi, 2013);

    - Low client satisfaction (Cheng *et al.*, 2005);

    - Low levels of repeat business from existing clients (Leung, Ng and Cheung, 2004b);

    - Project success is assumed but not guaranteed (Tabish and Jha, 2012);

    - Financial losses from project delays and legal claims (Zaneldin, 2006; Aibinu, Ling and Ofori, 2011);

    - General poor perception of the industry by the public (CIDB: South Africa, 2011, 2015); and,

    - National Service Delivery implications due to project delays (Koelble and LiPuma, 2010).

- Thirdly, researchers also indicate a real need to understand the micro-processes which hinder team performance (Van der Vegt, de Jong, Bunderson, Molleman, 2010). Inter-organisational teamwork is attracting more interest as a research topic, with Fong and Lung (2007) concurring that most research has focussed on factors necessary for team success rather than investigating the human and individual views of team role players;

- Fourthly, related to the research approach, most of the research currently in the industry has been concluded in a Quantitative manner (Amaratunga *et al.*, 2002; Adejimi, Oyediran and Ogunsanmi, 2010). Research projects in the past have mostly identified quantifiable variables, models and success factors, whereas this study will relate to a Qualitative approach;

- Lastly, to place the above into perspective and for the purpose of fully understanding the importance of the study, the metaphor of a stopwatch in athletics could be used. In many instances, the outcomes of current research are adding to the complexity and accuracy of the stopwatch, measuring the outcomes. This research undertaking is not aimed at the stopwatch, but at the athletes. Typical areas of concern are; why the athlete runs; what could make them run faster; what inhibits their training and preparation and what mental state is required to run faster. Therefore, this research is changing the focus from the creation of tools, systems and procedures to the understanding of the underlying industry human related issues. It seems that researchers find it implicitly less difficult to create and refine tools, systems and procedures rather than research and conclude on less tangible issues. Creswell (2013:49) notes that qualitative research explores where identified variables "cannot be easily measured".

In summary and in comparison to the above metaphor and the mentioned negative outcomes taken into account, the research does endeavour to create an understanding of a complex topic and probe the areas of team operation and individual functioning which are less apparent or tangible, than for example, financial, time or quality parameters. The research and its outcomes strive towards creating higher performing individual role-players and teams and attempts to resolve the current symptoms of suboptimal performance.

1.5   Practical application and Theoretical relevance of the research

Sub-optimal performance typically has an effect on the general outcomes of construction projects. As previously indicated in the introduction, the sub-optimal performance of the role-player's in the industry is well documented and often expressed in articles and academic writing. The main problem in this instance is thus identified as: Construction role player performance is sub-optimal.

The theoretical relevance of the study relates to the interaction of the role-players and how each individual role-player's performance in turn affects the team's performance. The performance of each role-player is affected by the person's ability, experience, motivation and operating environment (Scholl, 2003; Werner *et al.*, 2011; McShane and von Glinow, 2013). The lack of understanding and management of the factors

affecting the performance of each individual person on a team could be a great contributor to the current suboptimal performance of industry role-players in South Africa. This research study identifies and assists the theory on managing these role-players towards optimal performance and may possibly assist future leaders and managers in understanding the academic importance of issues surrounding the interaction and nuances of performance of such a diverse set of role-players in an intricate environment.

Performance in the construction industry relates to various criteria such as cost, quality, time, environmental, health and safety. These criteria, when measured, relate to certain symptoms; and it seems as if the human element, as part of these symptoms, has not been fully researched and understood.

It can be argued that the many tools, variables, models and success factors that have been created in the past to enhance performance currently do not achieve the intended purpose. It appears then, that the actual application and implementation of those systems or enhanced processes by the individual required to implement or drive the system/process, is currently sub-optimal.

It could well be argued that the various systems, contracts, processes and information technology (IT) that is available for use in the construction industry should and could enhance performance. However, as noted in many cases, construction performance is still sub-optimal. This presupposes that there are some relevant remaining questions related to the human factor in the application of such systems and processes. This study seeks to link these human factor questions to the research's theoretical framework which indicates that performance of individuals is affected by four factors, namely: talent/skill/aptitude, gained competence, motivation and the opportunity to perform.

The current performance of project teams appears to be lacklustre and a product of sub-optimal performance in the industry. It is also documented that team performance is reliant on each individual's performance, which is the case in the construction project teams as well.

Motivation authors show clear lapses in application and understanding of motivation in the normal business environment (Pink, 2009; Wrzesniewski and Schwartz, 2014). In many cases incentives and penalties are still being used, while these are

inadequate as methods of motivation. Observing the purest definition of motivation, i.e. an action that is generated internally by a role-player and provides the greatest opportunity for possible optimal performance. The theoretical framework takes clear guidance from Herzberg that only once motivation becomes part of the equation, does performance become realised.

In general, it appears that many reviewed articles relate to studies which researched technical project related matters (Chinowsky, Diekmann and Galotti, 2008; Peterson *et al.*, 2011), however this study identifies and addresses the fundamental causes of suboptimal performance.

1.6 The Delimitations and Assumptions

The following delimitations apply to the research:

- The research takes into account the feedback from the following construction project role-players:

  - Client representatives;

  - Contractor representatives; and,

  - Consultant representatives.

- The research is delimited to the views and perceptions of industry role-players situated in South Africa;

- The research investigation focuses on the views of the role-players in the Built Environment (BE). The views of labour and end-users of infrastructure are not considered;

- PMs are assumed not to be in the position, in all circumstances, to choose the members of their teams; which is the current situation in the South African construction industry;

- Project team members have the inherent ability and developed skill to operate at the required level as set out by the various professional bodies relative to the required disciplines when appointed to a project team;

- The project 'case study' defines the feedback from the participant to his/her experience on a specific project. The participants overall industry experience is

assumed to be different from the current experience or perceptions on the specific project under review; and,

- Projects have typical phases (conceptual/initiation, planning/design, construction/implementation and completion/handover). The research is limited to a cross sectional view of a project during one of these phases. Typically, views and experience could change as a project progresses.

1.7 Aim of the research

The research aim is to enhance project role-players' performance and add valuable theory-related insights to construction-projects' team performance and management. The research further seeks understanding of the sub-optimal performance of construction-project role-players in a team environment, taking into account the leadership, the team dynamics, the organisational culture, the team diversity and the factors which constrain or enhance the team performance.

1.8 Objectives of the research

The objectives of the research are presented as follows:

- Objective 1: To evaluate the team dynamics and environmental factors that influence role-player performance;

- Objective 2: To establish the effect of organisational culture on role-player performance;

- Objective 3: To examine the effect of diversity on role-player performance;

- Objective 4: To examine the influence of management and leadership, including Project Managers on role-player performance; and,

- Objective 5: To establish the issues that drive, motivate, or constrain performance of role-players.

This research applies to the motivation of project teams towards optimum performance to not only achieve, but exceed construction client goals in the 21st Century. Ultimately, the research could enhance project role player performance and add valuable discipline specific theory related to construction project team performance and the management of such teams.

1.9 The anticipated outcomes from the research

Amaratunga *et al.* (2002) note that research in the built environment and construction industry needs to identify "unanswered questions or unsolved problems" which in turn, should attempt to find a solution or probable answer to the problem or question.

The question and problem in this study relates to the sub-optimal performance of role-players in the construction industry. The following specific identified outcomes, could assist in finding solutions and probable answers to the research question:

- Clear indications on what the major performance barriers could be for project role-players;

- Possible strategies for motivating role-players towards optimum performance;

- Suggestions about where PMs could realign their focus to manage the team towards success;

- Enhancement of the possibility of formation of optimum performing teams;

- Explanation of potential reasons why role-players seemingly do not work well in a team environment;

- Clarification of the effect of organisational culture on role-player performance;

- Development of an understanding of how team diversity influences performance; and,

- Ascertaining the current and possible Project Management practices which enable or constrain role player performance.

This research and its outcomes strives towards creating higher performing teams to resolve the current symptoms of suboptimal performance.

1.10 Chapter summary

This chapter presented the reader with the background of the study. The main research problem and question are identified.

The investigative questions highlighted the pertinent questions and information required and possible solutions to the main research question.

The chapter further noted the importance of the study relative to the research discipline and the related industry and sets out the governing delimitations of the research.

In summation, a clear set of objectives and outcomes is noted which ensures that the study is valuable, viable and focussed.

The following chapter unfolds and presents a comprehensive literature review and views of various authors, nationally and internationally, in relation to the research. Various sources from the worldwide web, journals, conference papers, reviewed literature, articles and books are utilised to compile the various opinions of authors and experts in the specialised fields and to compare the respective views.

2. CHAPTER 2: REVIEW OF THE RELATED LITERATURE

2.1 Background

In this chapter, the review of the related literature is addressed by gathering information and the views of the various authors identified. The views of the authors are correlated and a summary identifying the important issues pertaining to this study is presented. The literature collected assists with solving the main problem, as well as the research investigative questions. The literature includes information obtained from the following sources:

- Online journals and databases;

- Books;

- Industry journals and conference proceedings;

- Relevant industry magazines; and,

- Internet sources and the World Wide Web.

2.2 Introduction

Henning, Van Rensburg and Smit (2004:27) note that one of the first tasks of a literature review is to contextualise the research undertaking to be able to argue a case and identify the unique contribution that the research will make. In this vein and due to the nature of the research problem, the literature review is tailored around the following constructs as focus areas in the research:

- Teams – Dynamics, Organisational Culture and Diversity;

- Leadership/Management – Influence and Practice; and,

- Performance – Drivers, Motivators and Barriers;

The aim of the literature review is:

- To enable the reader to comprehend the manner in which the constructs are viewed, used, discussed and researched in the construction industry;

- To examine the various issues and perspectives currently held in relation to the study's research questions;

- Enlighten the reader relative to the broad views and themes currently being debated and researched in the Construction and Project Management fields; and,

- Give context to the theoretical framework of this research.

2.3 Teams – Dynamics, Organisational Culture and Diversity

2.3.1 Project Teams and the environment

In an attempt to define a team, Jay (2003:xi) notes that a team differs from a group due to the members sharing a common goal and ambitions for success. Kloman (1972) states that teamwork is immensely important to complete any project. Chinowsky, Diekmann and Galotti (2008) highlight the importance of teams, emphasising that construction projects are dependent on two elements:

- The ability to plan and manage technical components of a project; and,

- The ability of the project participants to effectively develop into a high performance team.

In relation to the management skills, Jay (2003:25) points out that if a manager is able to create the optimal environment for the team to operate, the members will "effectively motivate themselves".

According to Acharya, Lee and Lee (2006) the three most important factors for team effectiveness in the construction industry are identified as:

- Leadership;

- Interpersonal flexibility; and,

- Team commitment.

Acharya *et al*. (2006) further note that the effectiveness of relationships being built within the project team and its participants is a key to success on a project. Kloman (1972) who researched the intricacies of two National Aeronautics and Space Administration (NASA) projects, notes a clear and definite case for research focussed on the people involved in the project teams, and in retrospection, stating that it is important that the "human aspects" be taken into account during organisation and management". Kloman (1972) emphasises that the two projects which were

researched showed the immense "importance of human skills, interpersonal compatibility, and relationships based on mutual respect and confidence".

Colin, Pillemer and Amabile (2015) states that most knowledge work relates to collaboration or teamwork and in most cases does not only revolve around an individual endeavour. Furthermore, it is a manager's task to predict how an individual will perform in a team environment (Sherrat and Farrell, 2015). Although, Wageman, Fisher and Hackman (2009) are very explicit when commenting that a leader has very little recourse if a team is poorly designed, and notes that team design is a basic condition for effectiveness.

Teambuilding focus and exercises are noted as necessary elements for assisting groups to merge, though one should be mindful of "over-cohesion" and its negative effects (Bresnen and Marshall, 2000).

Raiden, Dainty and Neale (2004) note that employee involvement in deployment could be a tool which would assist in effective team formation. Bresnen and Marshall (2000) indicate that "attitude" should be assessed as part of team selection criteria above the normal price assessment.

Other additional views gathered related to future research on the topic of teams indicate the following:

- The need to specifically understand the micro-processes which constrain team performance (Van der Vegt, de Jong, Bunderson and Molleman, 2010);

- In line with Van der Vegt *et al.* (2010), it appears that inter-organisational teamwork, similar to what exists in project teams, is attracting interest as a research topic focussing on factors necessary for team success; not investigating the human and individual views of role players (Fong and Lung, 2007); and,

- The originators of the Job Characteristic Theory (JCT) indicate that future research should focus on the organisations within which people function and the relationships amongst these people, rather than on specific jobs (Oldham and Richard Hackman, 2010).

- In contradiction to common beliefs and understanding, Baiden, Price and Dainty (2006) disagree with the notion that a seamless operation is a prerequisite for integrated team performance.

2.3.2 Project Team continuity

Parker and Skitmore (2005) note that changes in management personnel have an extremely negative effect on the performance of a project team, and negate any competitive advantages built up by the team or organisation.

Walker (2011:21) indicates that the role-players would experience greater job satisfaction if they are part of an entire project and are able to see the end result. It is rare to have personnel continuity due to the long durations of construction projects (Walker 2011:27). Non-continuous involvement of role-players undermines many relational and collaboration efforts within teams (Bresnen and Marshall, 2000).

2.3.3 Organisational Culture

Organisational Culture relates to the differences between organisations and how they operate (Smyth, 2015:150). Smyth (2015) states that temporary organisations could develop a sub-culture which is influenced by the original organisation's cultures which are already involved, but is highly reflective of the PM's agenda.

Related to organisational support, Walker (2011:26) comments that perceived support improves both performance and job satisfaction.

2.3.4 Human Resource Management

Nicholas and Steyn (2008) explain that in industries or disciplines which are seen as "hard" (typically technicians, engineers or business), the noted human related issues are seen to be the "soft" issues. To the contrary, the authors claim that these "soft" issues are "hard as nails" and have a major effect on project outcomes.

Ofori (2012:242) states that in developing countries the Construction Industry human resources face among others, the following challenges:

- Effective leadership;

- Rapidly changing operating environment;

- Size and complexity of projects;

- Large amount of legitimate stakeholders;

- The application gap between research and practice; and,

- Attainment of the highest client value.

In summary, Ofori (2012: 243) posits that there is a lack of leadership drive to effect the required changes in construction.

Adding to the above mentioned list, effective Human Resource Management (HRM) is exonerated by specific industry characteristics (Raiden, Dainty and Neale, 2004). These characteristics relate to the following (Raiden, Dainty and Neale, 2004):

- Fluctuations in workload; and,

- Teams form, develop and disband as part of each project's life cycle.

Emuze (2011:ii) states that HRM related issues are a major contributing factor to non-value adding activities which typically lead to poor project performance. This is reiterated by Tabassi and Bakar (2009) who clearly indicate that productivity could be correlated to a company's personnel and their strategies, and a very active or "forceful" human resource management system is an imperative for 21st century construction companies. It is further reinforced that the management and the development of HR will play a major role in obtaining success (Tabassi, Ramli and Bakar, 2012).

2.3.5 Diversity

Construction teams are also poised to become multicultural and PMs need to be equipped and sensitive to the skill and knowledge required to manage such teams (Pheng and Leong, 2000). In line with the call for sensitivity, Smyth (2015:150) states that team member diversity should be accommodated.

Horak (2010), in a study on the impact of culture and value perceptions on small groups, concluded that no clear indication was found that cultural dimensions make an impact on small groups. However, the researcher noted that the findings indicated that participants were young and readily adapted to an international environment (Horak, 2010).

In a doctoral study conducted relative to multicultural teams, Jang (2014) noted the following:

- Team members who have multi-cultural experience engage in cultural brokerage (the act of facilitating cross-cultural collaboration); and,

- Cultural brokerage enhances team effectiveness.

Marquis, Zhang, Filippov, van der Steen and Haasnoot (2015) indicated that cross-cultural teams are effective as a combination and add experiences, theories and skills originating from their national and organisational cultures, and noted specific impact on project management practice undertaken with such teams.

The Major Projects Association [MPA] (2016) notes three possible issues which could be addressed to ensure a more gender balanced or gender diverse industry environment:

- Reverse Mentoring: Company leaders are mentored by junior staff from a different gender or race to teach different perspectives;

- Flexible working policies: The improvement and actual application of policies which improve inclusion and diversity; and,

- Leadership: The creation of an enabling safe environment.

Bowen, Cattell and Distellir (2008) note that women and specifically in the quantity surveying field, still feel that the South African industry is male dominated; with specific mention of maternity leave and flexible working hours. The researchers also indicate that racial discrimination does occur, but is not prevalent (Bowen *et al*., 2008).

2.3.5.1 Project role players in the Built Environment

Assaff and Al-Hejji (2006) indicated, in a study related to time performance of construction projects, that the affected role players for the research, were the client, consultant and contractor as relevant project participants.

Alzahrani and Emsley (2013) note the importance of contractors in the attainment of project success. The research also reinforces the interrelations and value of observation of all the role-players on subsequent conclusions and study outcomes (Alzahrani and Emsley, 2013).

In collaboration with client role-players, Wang and Huang (2006) indicate that project owners play a very important role in project success.

Sherrat and Farrell (2015:17) indicate that the following participants make up the professional team on a construction project:

- Designers (architects and engineers);

- Quantity Surveyors;

- Consultants; and,

- Construction Managers.

2.3.5.2 Knowledge Workers

Much is said about the growth in knowledge work and its application to the current business environment (Commission, 1998; Tovstiga, 1999; Wong and Neck, 2010). The term knowledge worker was coined by Peter Drucker and describes any person involved with the use and development of knowledge (Werner *et al.*, 2011). Of interest to the research is that the role-players would be classed as knowledge workers and that they have specific characteristics and needs. Some of the needs summarised by Werner *et al.* (2011) are:

- Independence;

- Individualism; and,

- Personal achievement.

2.3.6 Relationships

"Relationships are an important part of the greater integration between organisational functions, and between 'hard' and 'soft' management issues" (Smyth, 2015).

In the construction industry, the relationships that the role-players have are over an extended period of time, if the entire process of design, construction and handover is taken into consideration. This is in stark contrast to many other client and supplier relationships (Walker, 2011:27). Due to this extended relationship period it is suggested that the right amount of effort is exerted to develop the relationship (Walker, 2011). Walker (2011:28) further expands on the understanding of the relationship with regard to the type of product the industry delivers which is not a general consumable which can be "discarded or changed".

Meng (2012) states that if the relationships between project role-players are not upheld, it may intensify poor performance. Barrett (2000) concurs and argues that for effective quality management on construction projects to materialise, firms must have improvement systems in place; but should also target "stable relationships" with other role-players in the supply network.

Cameron and McNaughtan (2014) note that interpersonal relationships between role-players have positive performance benefits and do assist with long-term organisational resilience.

In a book on relationship management, Smyth (2015:253) writes that management tends to move away from intricate relationship management and rather leave the responsibility to the individuals. In contrast to this, formal routines are proposed to assist with the management of relationships (Smyth, 2015).

2.4 Leadership/Management – Influence and Practice

Sherrat and Farrell (2015) state that Leadership is not the same as Management. There are definite differences which relate to management being focussed on work and meeting objectives, whereas leadership focusses on vision, inspiration and motivation. A manager should have the skill to understand people and be able to lead and manage successfully (Sherrat and Farrell, 2015).

2.4.1 Leadership Trends in the 21st Century

Many leadership management authors and commentators notice a definite change in the methods, tools and skills required to manage or lead in the 21st century (Egan, 1998; Dainty, Cheng and Moore, 2003; Ballard and Howell, 2004a; Toor and Ofori, 2008; Froese, 2010; Lee and Yu, 2012). Egan (1998) states that: "the industry will need to make radical changes to the processes through which it delivers its projects".

According to Toor and Ofori (2008), research in the industry is focussing on project leadership. Ofori (2012:248) notes that "leadership plays a vital role in the success of projects" and there is a dire need for leadership in construction.

Hackman and Wageman (2007) noted that new directions for leadership research should consider the following questions relative to what was researched previously:

- Under what conditions does leadership matter?

- Do leaders' personal attributes interact with situational properties to shape outcomes?

- Are good and poor leadership qualitatively different phenomena?

- How can leadership models be reformulated so they treat all system members as both leaders and followers?

- How can leaders be helped to learn?

Eagan (1998) identified the following five key drivers of change in the United Kingdom construction industry:

- Committed leadership;

- A focus on the customer;

- Integrated processes and teams;

- A quality driven agenda; and,

- Commitment to people.

Tores (2014) notes that leadership determinants of effectiveness in the 21st century could be evidenced by the following abilities:

- The anticipation of change;

- The measure of the leader's network diversity; and,

- The courage to abandon what worked for them in the past.

Herzberg (1966:11) reflects on the influence of business as the dominant institution and notes that if this institution "fails to assume leadership in its multitudinous relationships" it will eventually cause harm to itself, the institution and mankind.

In summary, Ofori (2012:249) and Skipper and Bell (2006) depict the paradox that, although the requirement for leadership is recognised in the industry, emphasis is still placed on technical and managerial skills.

2.4.2 Leadership styles

A leader should attempt to create an ideal environment for a team to be effective and perform (Wageman, Fisher and Hackman, 2009). Ofori (2012:249) and Thambain

(2004) note the importance of the project leader in creation of a "supportive environment" for the participating role-players to operate in.

Nicholas and Steyn (2008) define leadership as:" the ability to influence the behaviour of others to accomplish what is desired" and further clarify that the leadership style is the manner through which this influence is achieved.

Toor and Ofori (2008) propose a new type of 'authentic' leader in the industry, and further suggest that the authentic project leader should have the following traits:

- Living out positive values;

- Leading from the heart;

- Setting ethical and moral standards; and,

- Refraining from looking after own personal interests, but rather focusing their energy into securing the well-being of their followers.

Nicholas and Steyn (2008) indicate the following traits relative to dependants for an effective leadership style:

- Leader characteristics;

- The followers;

- Interpersonal relations between the leader and the followers; and,

- The nature and environment of the task.

The above mentioned authors advocate for a contingency or situational leadership style which changes and fits each work situation, and is adaptable for each team member (Nicholas and Steyn, 2008).

The term "helping" has been defined as the process where one role-player assists another by allocating time or effort to assist the other party with "the intent to benefit the second party" (Colin, Pillemer and Amabile, 2015). It generally appears that expert leaders focus on three predictable times when their assistance or help is needed (Wageman, Fisher and Hackman, 2009). These times are defined as the task beginnings, task midpoints, and task endings. In a study relating to the effects of helping others or being a receiver of help on projects, the authors note a definite alignment of practice, shared expectations and understanding after a successful "help

episode" (Colin, Pillemer and Amabile, 2015). A clear incongruence is noted with an unsuccessful "help episode" where both the help giver and receiver were left with differing expectations, understanding and intense emotions which blinded them to an eventual resolution (Colin, Pillemer and Amabile, 2015). Furthermore Wageman (2009) alludes to the fact that a sense of the correct timing of intervention is an important trait for team leaders. According to Wageman *et al.* (2009) team leaders should be able to:

- "Sense social systems";

- Identify root causes of certain behaviour in teams; and,

- Be skilful to know when to act and analyse later.

Colin *et al*. (2015) state that assistance given by a certain role-player could be negative ("helping is not always helpful") and further conclude that assistance given by overcoming certain difficulties on projects should be handled with tact and be mindful of others being vulnerable. The result is that the assistance could be disruptive and focussing on the process of helping others.

In their review of the subjective sense of separation and distinctiveness of leaders with power, Lee and Tiedens (2001) note that the strain between leadership can be seen as independent or interdependent. In some cases the independence is an effect of their interdependence, suggesting that a leader that has a strong task and relational orientation, is considered exceptional (Lee and Tiedens, 2001). This commentary aligns with Blake and Mouton's leadership grid (Werner *et al*., 2011) as shown in Figure 1.
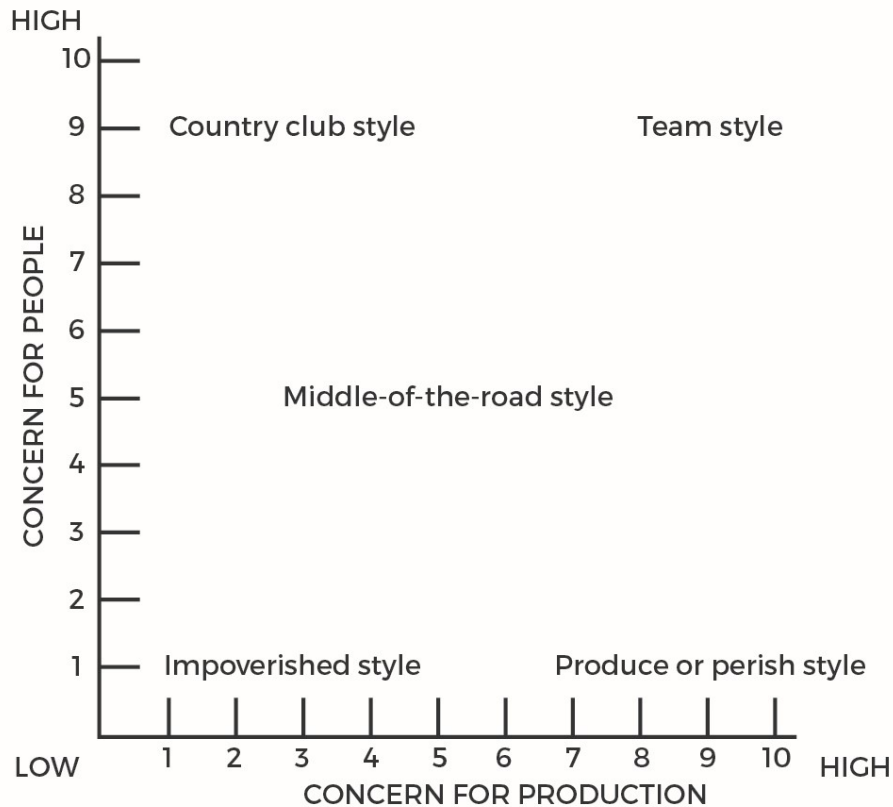
Figure 1: Blake and Mouton's Leadership Grid (Werner et al., 2011)

Hersey and Blachard (1988), authors of the renowned Situational Leadership style, note that at the nucleus of this style, is that there is no simplistic generic way of influencing people, and that the style of leadership should be adapted for the "readiness" of the group or person to be influenced. Therefore, either adopting a delegating, participating, selling or telling style relates to the required task and relationship input is needed (Hershey and Blanchard, 1988). The outline of the style is shown in Figure 2.
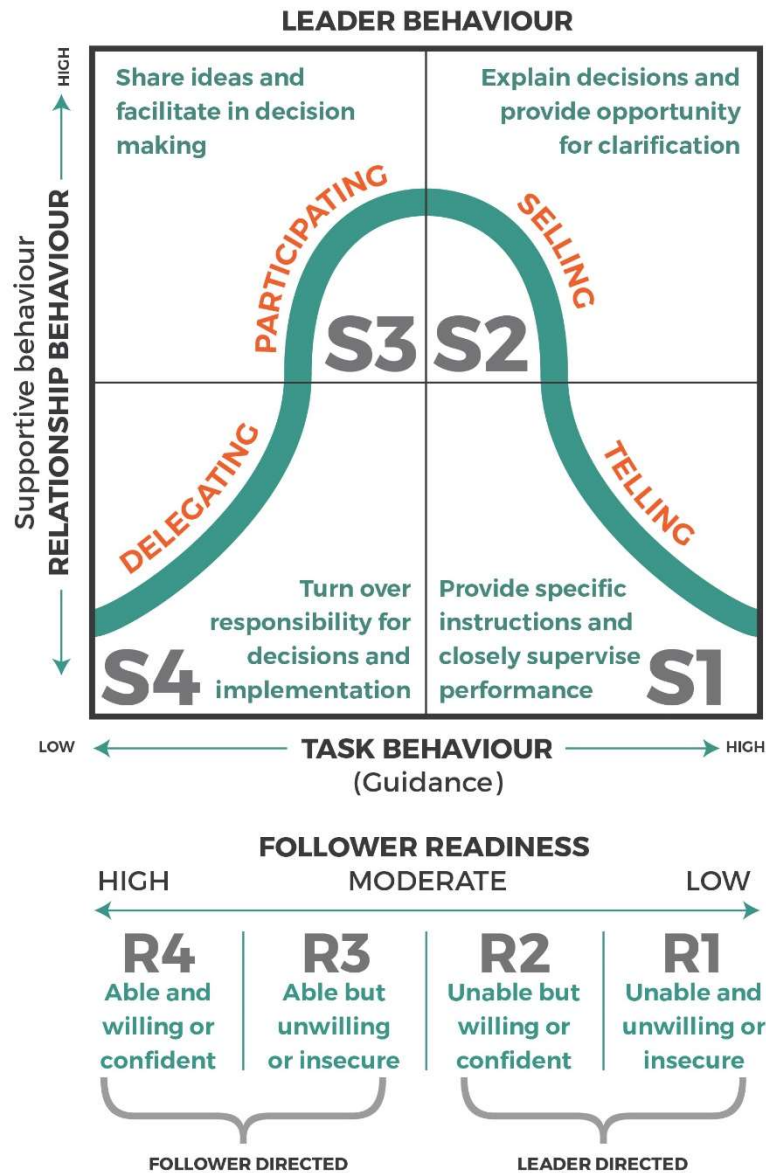
Figure 2: Hersey and Blanchard's Leader Behaviour model (Werner et al., 2011)

In adding to the above mentioned maturity issues, and with a direct focus on others, Lee and Tiedens (2001) note that high powered individuals have a heightened knowledge of relational and social contexts, which is an example of their own relational interdependence. The context that they focus on is the sensitivity to relational norms/cues and recollection of information about others.

Contrary to client requests for PMs to be dominant leaders, Plunkett Tost, Gino and Larrick (2014) state that a formal leader's experience of heightened or concentrated power produces verbal dominance which has two negative effects. Firstly, it reduces

commitment and as a consequence of that, secondly, performance starts to lag behind.

In writing about the emotional maturity of leaders, Hackman and Wageman (2007) indicate that emotional maturity is a "long-term development" and that these leaders are able to:

- Deal with their own and others' fears;

- Move towards anxiety causes with the interest of learning; and

- Have the internal discipline not to act impulsively.

2.4.3 Management Trends in the 21st Century

Many changes in management attitude, skills, styles, judgement and ability are required in the 21st century (Egan, 1998; Edum-Fotwe and McCaffer, 2000; Dainty, Cheng and Moore, 2003; Ballard and Howell, 2004a; Toor and Ofori, 2008). The complexity of the future environments brings with it many challenges for PMs in the construction industry (Rezgui, 2007; Dave and Koskela, 2009).

As summarised from Werner *et al.* (2011), the following items indicate perceived changes and influences related to 21st century managers and organisational behaviour:

- Managers will work with and through others;

- The manager's role is very complex and demanding;

- The managers ability to create new visions and to sell new directions;

- Managers must be team players;

- Rapid technology advancements;

- People from different geographical locations work together;

- Ability to creatively adapt;

- Managers must influence tasks, technology, structure and people to achieve desired outputs;

- Managers shift resources and manipulate people's actions and behaviours;

- "Chaos describes the circumstances under which today's managers must perform";

- Customer centred/focussed; and,

- Respond rapidly to demands which are unpredictable.

Werner *et al.* (2011) further indicate that 21st century managers will need the following competencies to function effectively:

- Adaptability;

- Knowledge and application of best practice;

- Intercultural competencies;

- IT skills;

- Critical thinking skills (problems solving);

- Creativity; and,

- Interpersonal effectiveness (relationships and communication).

Helper and Henderson (2015) seem to challenge general comments that managers should only be strategic and implement top down visions. They further indicate that a possible omission from managerial literature is the fact that relationships with people in organisations are "particularly successful in motivating" towards better performance (Helper and Henderson, 2015). Jayawickrama (2011) concurs that in many cases, managers are chosen on the basis of their "hard" skills (education and competence), but proposes that the recruiters re-balance the focus on both the "soft" and "hard" skills for coping with increasingly complex situations. According to Dill (2015), Google technology company is ranked as the company most millennials want to work for, and notes a major shift in focus on managerial level in connection with technical expertise. Jayawickrama (2011) indicates that technical expertise is much less important than the following:

- Consistent and clear management;

- Making time for one-on-one meetings;

- Assistance with problems by asking questions; and,

- Managers who took an interest in employees' personal "lives and careers".

Stanley (2016) concurs with the note made above on leadership/management clarity, noting that people in general follow leaders who are clear about their vision of the future, even if this clarity is not linked to integrity. Stanley (2016) notes that although people value integrity favourably, they are more likely to follow a leader with a clear vision. Examples of this phenomenon are historic world leaders such as Adolf Hitler (Stanley, 2016).

Smyth (2015:234) notes that managing by projects or using project based delivery, is by no means a straightforward task or a definite formula for success, and that a passive approach towards such a type of management will lead to unsuccessful endeavours.

2.4.4 Brief context of the Project Management role

According to Weaver (2007) Construction Project Management (CPM) has been in existence for over 50 years and came into being due to various challenges being experienced on construction projects. The overall responsibility of a CPM in South Africa relates to "the management of projects within the Built Environment from conception to completion, including management of related professional services" and "is the one point of responsibility in this regard" (SACPCMP, 2009).

South African Project Management practice, including Construction Project Management, is strongly influenced by the American based Project Management Institute (PMI), and it's developed Project Management Body of Knowledge (PMBOK). The PMI has stipulated ten knowledge areas which are integrated to perform the overall task of managing a project. These knowledge areas are:

- Project Integration Management;

- Project Scope Management;

- Project Time Management;

- Project Cost Management;

- Project Quality Management;

- Project Human Resource Management;

- Project Communications Management;

- Project Risk Management;

- Project Procurement Management; and,

- Project Stakeholder Management.

The construction industry has come under scrutiny due to lacklustre performance and low success rates. Equally these negative outcomes lead to low levels of client satisfaction. As part of the PM role in attainment of success, the direct link to performance of role-players is significant. Performance is also dependant on certain factors (Scholl, 2003; Werner *et al.*, 2011; McShane and von Glinow, 2013) on which a PM has varying levels of influence. Typically, the PM's influence on role-player's motivation and creating an environment which enables performance is critical.

The PM in construction is required to manage and lead a team of professionals from the initial concept stage to final handover of a project (SACPCMP, 2009). The PMI (PMI, 2008) depict a PM as a person tasked with achievement of the project objectives. New schools of thought suggest that this role could even be extended beyond the handover into operation and management of the infrastructure (Kumaraswamy, 2011). Essentially, the PM manages a temporary organisation, which by definition works on a project which has an end goal. This type of management differs greatly from operations management and adds an entire set of variables which a PM will have to deal with (Shelbourn *et al.*, 2006; Bertelsen *et al.*, 2007).

Project Management's role in the attainment of success has been widely researched, especially with regard to the impact, influence, methods and tools related to Project Management. Pheng and Chuan (2006) and Ofori (2012:248) note that although Project Management is one of the many criteria impacting on project performance, it could be the most significant factor. Powl and Skitmore (2005) concur that "A Project Manager is vital and indispensable in any project".

Journal articles related to construction management paradigms, indicated that "detailed CPM schedules, after-the-fact tracking, earned value analysis and competitive bidding are inadequate for the challenge of today's dynamic projects" (Ballard and Howell, 2004b). Howell and Koskela (2000) note that Project Management education and practice needs to change due to it not being adequate for the current project environment. Furthermore, the authors indicate that changes in

Project Management should be in line and driven by production management theories (Howell and Koskela, 2000).

Nicholas and Steyn (2008:17) differentiate three types of project environments and indicate vast differences between these. The differences can be summarised as:

- **In Commercial/For Profit projects:**

  - The end goal or objective is clearly defined;

  - The goals and objectives are customised to suit the client;

  - The project is driven by certain profit orientated criteria;

  - The PM guides the entire process from inception to completion; and,

  - The project team dissolves after each project is completed.

- **In Government/Non-profit projects:**

  - No profit driven forces are in play;

  - PMs, in many instances, are reassigned to other projects before project completion;

  - Most projects have an assessment or evaluating focus;

  - PMs have a largely administrative task; and,

  - In these environments, PM's might be overseeing many projects, which in essence makes them program managers.

- **In Military projects:**

  - As with the Government/Non-profit projects, they usually have a testing or evaluating focus;

  - The overriding criteria for these projects are technical and political; and,

  - PMs are military officers and do not usually oversee an entire project life cycle.

2.4.5 Project Management's role in motivation

PM's are required to possess and use many interpersonal skills to encourage team members to perform (Verma, 1996; Peterson, 2007). Furthermore, Peterson (2007)

highlights that there is a direct relationship between applied levels of enthusiasm towards project efforts and project results. Jay (2003:37) also indicates that a manager will need to adapt their motivational strategies to the individuals in a project team.

Cusworth and Franks (1993:194) note that motivation has a major role to play in the performance of projects in developing countries where certain misconceptions relating to the use of money and sanctions create unsustainable environments. Cusworth and Franks (1993:194-197) place a lot of emphasis on the possibilities which Hertzberg's theory provides in relation to motivation in projects undertaken in developing countries.

Nicholas and Steyn (2008:546) highlight particular comments made by Richard Chapman related to his research on project management at NASA as:

- Project Managers should be able to build cohesive teams;

- Decentralisation of decision making and technical problem-solving to the persons with the most experience;

- Team members were made to feel responsible for solving problems within the assigned guidelines;

- The majority of the team felt that they were given proper support and attention; and,

- The perception that the PM is "vigorous and fair" when giving recognition and rewards and motivates team members to the best of their capability.

2.5 Performance – Drivers, Motivators and Barriers

2.5.1 The Global Construction Industry

The construction industry has been a major contributor to the gross domestic product (GDP) of many countries, making up 9% of the global GDP and employing approximately 7% of the workforce globally (Horta, Camanho, Johnes, Johnes, 2013). Horta *et al*. (2013) and Moscarini and Postel-Vinay (2009) further state that the construction industry worldwide is extremely competitive and cyclical. Growth is expected to be quite dramatic in the next 13 years up to 2030, with output globally, to increase by 85% or $15.5 trillion dollars; driven mainly by growth in the US, UK and India (Robinson, 2015).

Both nationally and internationally, construction industry project team performance and the subsequent outcomes are sub-optimal (Egan, 1998; Carr and Tah, 2001; Aibinu and Jagboro, 2002; Takim, Akintoye and Kelly, 2003; Ballard and Howell, 2004a; Leung, Ng and Cheung, 2004b; Assaf and Al-Hejji, 2006; Xue *et al.*, 2007; X Meng, 2012) Clear links are identified between the construction industry's performance and economic context (Horta *et al.*, 2013). Horta, Kapelko, Oude Lansink and Camanho (2016) note that in line with most large industries worldwide, internationalisation has positively impacted on the financial performance of construction companies.

The industry's poor performance is highlighted in completed research done on the time performance of construction projects (Assaf and Al-Hejji, 2006). The statistics are not satisfactory, with the average time overrun being 10% - 30% of the original planned time, and 70% of projects experiencing extensions of time for completion (Assaf and Al-Hejji, 2006).

According to Baiden *et al.* (2006) it appears that a possible solution to the industry's performance afflictions is to overcome current organisational and behavioural barriers, confirming Egan's (1998) statement that: "the industry needs to make radical changes to the processes through which it delivers its projects".

Bertelsen *et al.* (2007) show that there are strong indications that construction is a complex process and note a number of 'mental flow models' related to the process concept. Shelbourne (2006) points out that this complexity is clearly shown by the following characteristics of the construction industry:

- Teams are multi-disciplinary;

- Team members participate in dynamic ways with each other;

- Teams rely on previous experiences/heuristics;

- Projects are usually once-off and not repeated;

- Time and schedules are under pressure; and,

- Budgets are limited.

In noting the above mentioned characteristics, it is inevitable that construction project activities are subject to great uncertainty (Herroelen and Leus, 2004).

Rezgui (2007) concurs that the construction industry has inherent socio-organisational challenges. The challenges are presented as follows:

- Technology adoption;

- Team identification;

- Trust; and,

- Motivation.

Ballard and Howell (2004) claim that certain projects that are complex, quick or uncertain, cannot be managed in the current traditional manner. Howell and Koskela (2000) note that the performance will keep declining due to projects becoming more "uncertain, complex and pressed for speed".

2.5.2 The Construction Industry in South Africa

The South African construction industry remains a significant local employer and growth incubator although it has been in decline since 2010 (Price Waterhouse Coopers, 2015). This decline is reflected in the performance difference between the JSE All Share Index and the JSE Construction and Materials Index shown in Figure 3 (Price Waterhouse Coopers, 2015):

Figure 3: Performance of JSE All Share Index in relation to JSE Construction and Materials Index (Price Waterhouse Coopers, 2015)

The former South African Minister of Public Enterprises notes that the construction industry is "extremely troubled" and that improvement with respect to quality and efficiency is required (SAPA, 2013). The notable comments are presented as follows (SAPA, 2013):

- Delays and disruptions;

- Poor site management;

- Time and Cost variations;

- Tender collusion or uncompetitive behaviour;

- Lack of skills and competences; and

- Labour participation.

According to PWC (2015) the most common risks identified in ranking order from high to low, by construction companies in South Africa, are presented in Table 3:

Table 3: Identified Industry Risks (PWC, 2015)

No.	Identified industry risks:
1.	Regulatory framework and impact related to B-BBEE and Transformation (with an emphasis on black ownership)
2.	Industrial action and strikes
3.	Talent Management and Staff Retention
4.	Industry growth and expansion
5.	Project execution barriers (competitive markets, skills shortages, etc.)
6.	Financial Liquidity risks
7.	Health, Safety and Environmental sustainability
8.	Legislative and regulatory compliance
9.	Tender process risks; and,
10.	Credit risk management.

Creamer Media (2016) notes that 2015 strained the construction industry due to slow economic recovery, low public infrastructure expenditure, and over capacitated markets linked to low profit margins. For 2016, the economic forecasts indicated a bleak outlook, influenced by similar risks as noted by PWC (Creamer Media, 2016).

South African reports on client satisfaction with respect to quality, indicate that on 20% of projects, clients were dissatisfied with quality (CIDB: South Africa, 2011). It is also noted that clients were not satisfied with the performance of contractors on 16% of work undertaken (CIDB: South Africa, 2015). Notably, the dissatisfaction with contractor performance worsened with project size (CIDB: South Africa, 2015).

Procurement related barriers are the main contributor to client dissatisfaction; with an emphasis placed on the local capacity to develop, maintain and design effectively (CIDB: South Africa, 2011). Client dissatisfaction in most cases has strong links to appointment of unsuitable contractors (CIDB: South Africa, 2015).

Delays in payment is noted as one of the biggest contractor challenges, as 40% of payments are made in excess of 30 days of submission of invoices (CIDB: South Africa, 2015). This has a major impact on small and medium enterprise (SME) contractors and often results in bankruptcy (CIDB: South Africa, 2015).

The increases in corruption, political interference and institutional barriers also play an ever increasing role in the South African environment (CIDB: South Africa, 2011; SAPA, 2013).

2.5.3 Motivation Theory

Early management theorists introduced motivation as simplistic (Walker, 2011), in contrast to current schools of thought expressing motivation as "dynamic and complex" (Verma, 1996:60).

Vroom (1964) defined motivation as:" a process governing choices made by a person or lower organism among alternative forms of voluntary activity". More recently, Schunk, Meece and Pintrich (2014) defined motivation as the "process whereby goal-directed activities are instigated and sustained". Herzberg (1968) notes that if motivated, a person needs no "outside stimulation" and that that person "wants to do" the set work.

Operations and General Management fields have evolved and have developed a range of theories and models assisting with optimising team effort to ensure that the required outcomes are achieved (Gerber, Nel and Van Dyk, 1998; Werner *et al.*, 2011). Relative to these theories and models, there has been a drive towards optimisation of team and individual efforts to not only achieve what is required, but also to excel and create high performing teams. Renowned motivation theorists like Maslow, Alderfer, McClelland, Hertzberg, Porter and Lawler, Locke and Latham, Skinner, Adams and Vroom have done revolutionary ground breaking work in this field. Verma (1996) concurs that the mentioned motivation theories are applicable to the project management environment.

Tabassi and Bakar (2009) suggest that future research should evolve around how organisations adjust and create the environment and organisation to optimise employee motivation. Jay (2003:25) states that if a manager is able to create the "right" environment for a team to operate in, the members will "effectively motivate themselves". Jay (2003:26) further indicates that team members could also be motivated by the "prospect of collective achievements and awards". Jay (2003:32) presents the following as key motivating factors:

- Understanding of a team member's job;

- Setting of clear and achievable targets; and,

- Involving people.

Relative to team members, Verma (1996:60) states that the motivation techniques used on one project, might not be successful on the next, which could be due to the following, constantly changing, factors:

- The situation;

- The organisational environment; and,

- The behaviour of people.

Gllstedt (2003) points out that motivation and stress greatly influence the perceptions of working conditions.

2.5.3.1 Job Satisfaction

Bowen, Cattell and Distellir (2008) noted in a study related to the job satisfaction of Quantity Surveyors in South Africa, that personal satisfaction in doing the work; a low degree of supervision; participating in decision-making; undertaking challenging and creative work; and receiving recognition for achievements, influence job satisfaction.

Walker (2011:22) confirms that in a study related to architects' job satisfaction in the UK, most of the dissatisfaction was as a result of organisational issues and not work related. Walker (2011) further notes that there is no direct correlation between a person's intelligence and subsequent role, and ensuring job satisfaction.

Walker (2011) perceives that general job satisfaction in the construction industry is greater than in other industries, based on the assumption that the pure challenge which each project brings, is a satisfier in itself. Walker (2011) specifically indicates that Architects for example have great job satisfaction potential, which is enforced by their education which instils this expectation, although limited opportunities are available to fulfil this expectation.

2.5.3.2 Incentives

In a recent study on the effect of financial and non-financial rewards, Ashraf, Bandeira and Jack (2014) discovered that the participants which were offered non-financial rewards outperformed their peers. Although the authors do caution the reader to note that the positive effects of long term use of non-financial rewards could diminish, and that the outcomes of an incentive scheme could be influenced by the initial worker/participant selection (Ashraf, Bandeira and Jack, 2014).

Ariely, Gneezy, Loewenstein and George (2009) noted a decrease in performance as incentives increased and question the decisions made by administrators which assume that incentives increase performance. The researchers also caution practitioners that the increase of incentives beyond a threshold level could in fact increase motivation to above optimal levels which has an adverse effect on performance (Ariely, Gneezy and Loewenstein, 2009). In line with this, Walker (2011) indicates the counter intuitive manner in which incentivising seems "equitable and sensible" but it can create a myriad of problems and indicates that such schemes could falter.

Fu (2012) states that in cases where incentives did have a positive effect, that these were long-term incentives and that as a firm's level of openness increases, the effects of incentives internally decreases.

Gibbons (2005) notes some interesting issues related to incentives used in contracts between firms:

- Pure incentives in contracts are not the only source of incentives;

- Asset ownership creates a lot of incentives, even without incentive contracts; and,

- Incentives beyond those in contracts and enforced by ownership could relate to "integration, job design, product design, organisational design", etc. which in turn is the basis of many relational contracts between firms.

"Project affinity" as defined by Dainty, Bryman, Price, Greasly, Soetanto and King (2005) relates to "the commitment and attachment by stakeholders and participants to projects and their outcomes". Project affinity further indicates that role-players are less likely to commit to project goals due to projects being temporary in nature. In effect, a role-players affinity is determined by the attitude and commitment towards the project outcomes; and that role-players have a connection with the project if they understand the objectives. The mentioned role-player connections were noticeable even if they did not gain from the achievement of project goals (Dainty *et al.*, 2005).

Relative to incentives in partnering or collaborative contracting arrangements, Walker (2011:131) notes that the instinctive view that financial incentives drive performance which is seen as very mechanistic. These mechanistic views side-line any individual preferences with a focus on intrinsic motivators.

2.5.4 Performance Theory

Smyth (2015) states that "in a social space of conduct in which project business and projects reside" many challenges for performance occur. Within these spaces, Relationship management is a way of improving performance (Smyth, 2015).

Previous studies related to project working conditions, note that organisations rely on the performance of individuals (Gllstedt, 2003). Walker (2011:23) notes a positive correlation between job satisfaction and performance, but emphasises that situational

factors such as budgets, facilities and uncertainty also influence performance. Moreover, it should also be noted that job satisfaction has a strong relation to and impacts on customer or client satisfaction (Robbins and Judge, 2008; Walker, 2011).

When viewing the components or make-up of performance, Scholl (2003), Werner *et al.* (2011) and McShane and Von Glinow (2013) depict that there are definite links between motivation and an individual's performance. According to Werner *et al.* (2011) performance levels of individuals can relate to the following four factors:

- Inherent ability:

- Developed competencies;

- Opportunity; and,

- Motivation.

Scholl (2003), and McShane and Von Glinow (2013) add the individual's 'role perception' to the above list. Individually these authors also note situational factors (McShane and von Glinow, 2013) and resources (Scholl, 2003) as issues to consider when looking at what enables individuals to perform. Jayawickrama (2011) concurs with the importance of resources and notes that technical resources might be a priority.

Walker (2011:16) intimates that ability can be perceived to be the individuals "capacity to perform a task successfully". Ability is a product of intelligence, experience and aptitude/talent (Walker, 2011), in line with the above mentioned factors. Walker (2011) further posits that competence is the main characteristic of a superior performing individual, and relates to both the technical/professional skills and values or personal traits. Values and personal traits become increasingly important for work to be done in teams, to communicate, to be culturally aware and a range of other social skills needed to operate in this complex industry (Walker, 2011).

In general, it has also been shown empirically that when people within an organisation are able to focus on the positive factors around them, then the organisation tends to flourish (Cameron and Mcnaughtan, 2014).

Jayawickrama (2011) further notes that the configuration of an "enabling" environment which consists of incentives, growth opportunities and the right environment to incubate role-player and management opportunities and growth, assist performance.

Relative to, and noting environmental influences on performance, research has also noted that the combination of relational contracts with very high standards of accountability could be an effective performance driver (Beer, 2009; Helper and Henderson, 2015).

Models on team performance (Drexler, Sibbet and Forrester, 1991) and team development (Tuckman, 1965) have been instrumental in indicating typical team functioning. In a review of the Tuckman model, Bonebright (2010) notes some peculiar limitations of the model, which may have a bearing on this research undertaking. The following is presented:

- Conflict should rather be explored from what drives conflict rather than being a development stage;

- The "Storming" stage is not well defined, which limits application;

- What are the effects of development on creativity; and,

- The model's inability to discuss the failure of ability to demonstrate outstanding performance.

Figure 4: Group development stages (Tuckman 1965) reflects the Tuckman model for team development with reference to the above comments:

Figure 4: Group development stages (Tuckman 1965)

In conclusion, Bonebright (2010) commends the Tuckman model for its ease of use and simple application. Bonebright (2010) states that a model with similar impact and general application is highly unlikely to emanate from future literature.

2.5.5 Performance Measurement

In the United Kingdom (UK) industry report by Egan (1998), the lead author clearly indicates that effective measurement of performance is a critical part of project delivery improvement. Hughes, Tippett and Thomas (2004) have indicated that many tools of

measurement and assessment of success of a construction project have been developed. It is also noteworthy that a large amount of research has been conducted with regard to Performance Measurement (Bassioni, Price and Hassan, 2004).

In response to the Egan Report (1998), the UK Working Group tasked with the identification of Key Performance Indicators (KPI) noted the following ten parameters against which a project can be measured (Takim, Akintoye and Kelly, 2003):

- Construction cost;

- Construction time;

- Cost predictability;

- Time predictability;

- Defects;

- Client satisfaction with the product;

- Client satisfaction with the service; and

- Company performance indicators relative to:

    - Safety;

    - Profitability; and,

    - Productivity.

Although historically many project performance measurement tools use the "Iron Triangle" criteria of time, cost and quality as developed by Barnes (1988), Cheung, Suen and Cheung (2004) proposes that the following categories be used: People, Cost, Time, Quality, Safety and Health, Environment, Client Satisfaction, and Communication. Hughes *et al*. (2004) also propose a more flexible project success measurement tool which takes into account both objective and subjective criteria. Takim, Akintoye and Kelly (2003) concur and call for a more holistic measure of performance.

Stating the importance of the end product as a performance requirement in relation to client satisfaction, Walker (2011:28) concludes that how well a client is treated during the construction process, relationally, is still subservient to the end product which will still finally determine client satisfaction in relation to:

- Aesthetics;

- Functionality of the design;

- Budget; and,

- Time constraints.

2.5.5.1   Construction Project Success

Project success is a top priority and outcome when undertaking a project (Alzahrani and Emsley, 2013). Various authors also note the intricacies surrounding the factors and indicators of construction project success (Chan, Scott and Chan, 2004; Deacon, 2011; van Niekerk and Steyn, 2011).

Deacon (2011) states that classifying a project as being successful or not has many dimensions and viewpoints. Deacon (2011) uses the example of red and green projects. Red projects meaning failed or unsuccessful and green projects being successful, and that "there is a grey area between these green or red examples". In judging project success, the client's views are usually taken to judge overall project success, but in contrast, Deacon (2011) proposes that:

- "An endeavour undertaken by a client also comprises a project which produces an outcome";
- Such an "endeavour's success should measure the performance of the Project Management separately from the outcome";
- The success of an endeavour "should be measured against a set of customised and weighted success criteria"; and,
- The "Project Management success and outcome success should be expressed as a percentage, rather than on a Yes or No basis".

In an endeavour to define project success Van Niekerk and Steyn (2011:124) notes that "there is no clear cut definition of 'project success' that applies to all projects in all environments". The study by Van Niekerk and Steyn (2011:124) further reinforces that before an approach can be developed to manage a specific project, the various success criteria by which a project will be judged need to be defined.

Academic literature reviewed has identified strong correlation between the "Iron Triangle" parameters (Time, Cost and Quality) and subsequent success (Barnes, 1988; Dainty, Cheng and Moore, 2003; Hughes, Tippett and Thomas, 2004; van

Niekerk and Steyn, 2011). According to The Major Project Association (MPA) seminar report, Noyce (2011) states that project success is in line with the original time, cost and quality dimensions, but a project's success can also be realised in a manner unforeseen, and could change in time as perceived by individuals. Van Niekerk and Steyn (2011:126) further elaborate that success means different things to different people and that in the past most practitioners linked project success only to the "iron triangle" (quality, budget and time) but also point out that other factors, as presented below, could be added to refine the model into four dimensions:

Project efficiency:

- Meeting schedule/programme goals; and,
- Meeting budget/cost goals.

Impact on the customer:

- Meeting functional performance;
- Meeting technical specifications;
- Fulfilling customer/user needs;
- Solving a customer's problems;
- The customer is using the product; and,
- Customer satisfaction.

Business success:

- Commercial success; and,
- Creating large market share.

Preparing for the future:

- Creating a new market;
- Creating a new product line; and,
- Developing new technology.

In relation to the influence of Project Management on success, the MPA seminar summary (2009) states that project success is not only dependent on Project Management technology, techniques and processes but is greatly influenced by leadership, culture and instilling of good behaviour by Project Management practitioners, and that these soft skills are not given sufficient attention.

In summation, Olander (2007) makes it apparent that stakeholder management and even the implementation of a stakeholder management process has been identified as an important aspect of a PMs role in managing the project towards success. However, Chinowsky *et al.* (2008) indicates that the importance of the role of participants in the overall project success has, until recently, been neglected.

2.5.6 Information Technology

The emergence of information technology tools which are used in construction design and management does impact the manner in which construction projects are managed (Froese, 2010; Lee and Yu, 2012; Ofori, 2012).

The management of virtual teams through web-enabled Project Management also creates its own challenges and equal consideration must be given to technology, processes and people in order to successfully employ web-enabled Project Management (Alshawi and Ingirige, 2003). The people driven philosophy is reiterated by Rezqui (2007) who posits that the success of virtual teams does not only rely on embracing the use of a communication technology, but also looking deeper into the social and organisational features of teams.

Pan (2006) argues that semantic web technology can improve construction information management in a number of areas such as:

- Project knowledge management;

- Collaborative design; and,

- Communication between project partners.

The web technology could also provide an innovative approach to managing construction information because it enables construction documents to be interpreted by computers (Pan, 2006). Similarly, the emergence of mobile computing has the potential to enlarge the boundary of IT support to improve information and communication between construction teams and the design team, a situation which is the key factor for the integration of design and construction (Chen, 2008; Emuze, 2011)

2.5.7 Procurement Practice

Watermeyer (2014) states that a procurement strategy includes the choices made related to what is delivered and through which contract and contracting arrangements are finalised.

Numerous completed studies and reviewed reports found that changes to the adversarial and probable negative effects of the currently used tender and procurement methods are required (Egan, 1998; Black, Akintoye and Fitzgerald, 2000; Cumberlege, 2000; Pesämaa, Eriksson and Hair, 2009; Eriksson and Westerberg, 2011).

Egan (1998) stated that current methods should be adapted towards long term relationships with role-players and should be based on performance which ultimately would lead to improved quality and efficiency. Meng (2012) concurs by indicating that long term supply chain collaboration and partnering could assist in solving performance issues. Watermeyer (2014) concurs that procurement is able to contribute to the efficiency of a project.

Chappell, Walker and Greenwood (2002) presented the following pertinent issues with respect to current procurement practice:

- No single service provider can manage the speed of technological advancements and technical competence to provide the necessary skills for both design and production;

- Current fragmentation of the construction process has been exacerbated by economic downturn; and,

- Procurement plays a crucial role in the success of a project.

2.5.7.1 Traditional Contracting

In South Africa, similar to other countries, current procurement practice relates to the following:

"Traditionally, construction clients rely on competitive procurement procedures involving invitation of numerous bidders that prepare lump sum contract proposals based on detailed design documents prepared ex ante by the client and their consultants. In bid evaluation the lowest lump sum price is the most important criterion. In recent years this type of procurement has received increasing criticism for causing

disputes and adversarial relationships, which in turn lead to time and cost overruns, diminished quality and poor customer satisfaction." (Pesämaa, Eriksson and Hair, 2009)

Traditional methods of procurement in the construction industry seemingly create an adversarial client and contractor relationship (Bresnen and Marshall, 2000).

In South Africa the CIDB (2011) notes that the current procurement of both contractors and consultants are major barriers to achieving better quality outcomes. In both cases, the inclusion and assessment of functionality criteria in procurement can alleviate these issues (CIDB: South Africa, 2011). Relative to 2011 statistics, 25% of provincial/local authority contracts did not take into account any quality criteria and 13% were awarded in contradiction of the tender committee recommendations (CIDB: South Africa, 2011).

Smyth (2015:38) comments on the use of traditional contracting and notes the following which are applicable to this research undertaking:

- A high level of procurement and project management knowledge is required to assess bidder capability, value for money and level of value added; and,

- The mentioned client capabilities come from specialist knowledge, education and past experience. Many client organisations struggle with upholding of such capability.

Sherrat and Farrell (2015) conclude that the role of construction managers will change if contractual agreements move away from the traditional roles. In more progressive procurement arrangements, the construction manager will have to stay abreast with new material and process developments, methods of construction, quality and planning and health/safety/environmental requirements to be able to add value during earlier involvement on projects (Sherrat and Farrell, 2015).

2.5.7.2   Partnering or Relational Contracting

"Relational Contracting moves away from a market and procurement driven approach towards relational capabilities that flow from the contract and governance based on trust" (Smyth, 2015). Pesamaa, Eriksson and Hair (2009) state: "Procurement is crucial since it sets the basis for cooperation between clients and contractors".

There is a move to go beyond traditional procurement methods and create contracting arrangements based on "cooperation and trust" which promise more positive performance outcomes (Bresnen and Marshall, 2000). Avumba (2014) notes, as part of the drive to use more integrated and collaborative delivery methods, that there is a need and emphasis for research focusing on the social aspects.

Black, Akintoye and Fitzgerald (2000) show that partnering is being used more frequently than before in the UK construction industry and further state that the following is required for partnering to succeed:

- Trust;

- Communication;

- Commitment;

- Clear understanding of roles;

- Consistency; and,

- Flexible attitudes.

Crespin-Mazet and Portier (2010) identified that one of the main factors influencing the clients' reluctance to partner with contractors is understanding what the concept of 'partnering' is.

Helper and Henderson (2015) note that large American firms became bankrupt in the 1950's-1970's due to problems associated with adapting to the development of effective relational contracts. Some of the reasons noted for the business failures are as follows:

- The adversarial treatment of suppliers and workers as homogeneous and interchangeable;

- Experts were portioned and there was very little knowledge sharing among departments or at management levels; and,

- Defined financial criteria were used to make decisions.

Smyth (2015) highlights a repeat work or reappointment occurrence to "help facilitate relationship development" in both the client and service provider organisations, but records that many relational contracts, such as partnering, are usually a "once-off"

affair. Smyth (2015) further directs that governance is insufficient to assist with relationship structuring and concludes that trust and confidence are the basis for relationship building.

Pryke (2012) and Smyth (2015:48) state, as one of the many positives, that relational contracting induces customer focus.

Kadefors, Bjorlingson and Karlsson (2007) state that a focus on assessment of the attitudes and teamwork potential of persons within potential contractor partners could be highly developmental and that past performance could possibly have lessor value related to a final decision as to whom to collaborate with.

The researchers found that cooperative procurement procedures, invitation of a limited number of bidders, incentive-based compensation, and careful partner selection based on task related attributes, increase the overall cooperation between the contracting parties (Pesämaa, Eriksson and Hair, 2009).

As a perceived implementation limit, Bresnen and Marshall (2000) note that the application and effects of partnering in most cases are ignored beyond the client, consultant and contractor arrangement and ultimately do not filter down to sub-contractors.

In SA, the CIDB has promoted relational contracting strategies which could enhance both quality and value for money (CIDB: South Africa, 2011). Watermeyer (2014) states that to complete projects successfully in South Africa, procurement strategies should be adapted to include possible design and construction integration which in turn lead to early contractor involvement in design and construction practices. The effective implementation of such strategies in essence actually requires the SA construction industry to review its practices and undergo a "culture change" (Watermeyer, 2014).

The following ten contractual norms or behavioural patterns are used as guides towards relational contracting (Smyth, 2015):

- Role integrity;

- Reciprocity;

- Implementation of planning;

- Effectuation of consent;

- Flexibility;

- Contractual solidarity;

- Restitution, reliance and expectation interests;

- Creation and restraint of power;

- Proprietary of means; and,

- Harmonisation.

Smyth (2015:104) concludes that relational contracting has strong links with both individual and group emotional intelligence.

Relative to the partnering or relational contracting debate, Bresnen and Marshall (2000) indicate that this type of arrangement does not guarantee positive outcomes or success. Conflicts in a partnering arrangement, do occur in instances due to the above mentioned expectations (Bresnen and Marshall, 2000).

2.5.8 Trust

The development of trust between role-players is seen as a major ingredient to facilitate project success in construction projects (Wong and Cheung, 2004). Ngowi (2007) relates in his research study on selecting alliance partners in construction, that trustworthiness is an influencing factor throughout all the stages of developing an alliance.

Trust is seen as a major part of relationships and the compilation of gains in relation to the instances where trust was misplaced, would still outweigh the losses (Smyth 2015:129). Trust is a valuable social capital and should be a clear focal point for all role-players and mainly evidenced by behaviour (Smyth, 2015). Walker (2011) shows that integrity and demonstrated concern for others, are seen as components of trust.

Smyth (2015) proposes routines which would guide relationship growth to ensure better client and staff experiences which in turn would lead to better performance.

When investigating the importance of trust in project partnering success between clients, contractors and consultants, Wong and Cheung (2004) specify that clients and

consultants rely strongly on contract terms (systems based trust), and contractors rely mostly on action/behaviour (performance/permeability).

Relative to finances, Zaghloul and Hartman (2003) note a clear link between contracting methods and trust. The authors note that relationships are "vital" to the process of project management and contract administration. The aforementioned trust relationships could be at the root of major monetary savings on construction projects (Zaghloul and Hartman, 2003).

"Project affinity" (Dainty *et al.*, 2005) which relates to an emotional attachment to project outcomes, could have a positive and significant effect on creating psychological contracts between parties.

Finally, an important point is made that clients cannot distinguish between an organisation and its representatives, viewing them as "one and the same" (Smyth, 2015).

2.5.9 Communication

Griffith and Watson (2003) note that communication could be the "most important management function" in construction. Dainty, Moore and Murray (2006) enforce the importance by noting that construction teams are "compels, interdisciplinary and temporary" which then makes effective communication essential for proper operation and performance. Hoezen, Reymen and Dewulf (2006) further reflect on the type of industry setting when noting that the communication environment could be classified as "complex".

Furthering the discussion on the importance of communication in construction projects, Tipili, Ojeba and Sa 'adiya Ilyasu (2014) indicate that poor communication has the following outcomes on projects:

- Delays;
- Cost overrun; and,
- Project abandonment.

In recent decades effective communication has been given prominence in most managerial disciplines (Verma, 1996). This is mainly due to many authors

demonstrating that it plays a pivotal role in the attainment of project success (Verma, 1996; Sherrat and Farrell, 2015).

Furthermore, Verma (1996:26) states that projects have unique features in the form of managerial skills; such as communication, which are vital for project success. Werner *et al.* (2011) note that communication as a basis of information exchange and relationship building is vital and that barriers in communication are usually either process or personal barriers. The following communication challenges are presented by Verma (1996:26), related to the project environment:

- Responsibilities which are overlapping;

- Changes and scope constraints;

- The complexity of integration and interface requirements;

- Decentralised decision making; and,

- Conflict potential.

According to Lee and Tiedens (2001) people who acquire and maintain power, communicate well and often, with others. The manner of relationship development, creation and maintenance is also through communication (Lee and Tiedens, 2001).

2.6   Literature Review – Summary

In summation, Herzberg (1966:11) reflects on the influence of business as the dominant institution and notes that if this institution "fails to assume leadership in its multitudinous relationships" it will eventually do great harm to itself, the institution and mankind. As an extension of this dominant institution, the impact of project management on teams can also be seen in the same manner. If all the multitudinous relationships are not cultivated, both the project management aspects and the role-players on the projects, will be harmed.

The views of the various authors, the sources and web searches stated in the literature review, can be summarised as follows:

- The current state of construction industry performance is sub-optimal (Egan, 1998; Carr and Tah, 2001; Aibinu and Jagboro, 2002; Takim, Akintoye and Kelly, 2003; Ballard and Howell, 2004b; Leung, Ng and Cheung, 2004a; Assaf and Al-Hejji, 2006; Xue *et al.*, 2007; Emuze, 2011; X Meng, 2012).

- In general, there are calls for change, and advantages in changing the ways in which project performance is measured (Cheung *et al.*, 2003; Takim, Akintoye and Kelly, 2003; Hughes, Tippett and Thomas, 2004).

- Individual role-players' performance on project teams is reliant on certain factors (Herzberg, 1965, 1968; Scholl, 2003; Werner *et al.*, 2011; McShane and von Glinow, 2013).

- Current tender and procurement practices are not conducive to performance (Egan, 1998; Black, Akintoye and Fitzgerald, 2000; Eriksson and Westerberg, 2011; X Meng, 2012).

- Motivation, as one of the factors which impact performance, is an important factor for PMs to aspire to (Jay, 2003; Peterson, 2007; Chinowsky, Diekmann and Galotti, 2008).

- The manner in which human resources are managed, have a definite impact on project success (Raiden, Dainty and Neale, 2004; Tabassi and Bakar, 2009; Emuze, 2011; Tabassi, Ramli and Bakar, 2012).

- Project success is ill-defined, but nevertheless is still a specific goal in the industry (Barnes, 1988; Dainty, Cheng and Moore, 2003; Chan, Scott and Chan, 2004; Hughes, Tippett and Thomas, 2004; Acharya, Lee and Lee, 2006; Olander, 2007; Deacon, 2011).

- The construction industry is a challenging environment for role-players (Ballard and Howell, 2004b; Herroelen and Leus, 2004; Shelbourn *et al.*, 2006; Bertelsen *et al.*, 2007; Rezgui, 2007).

- Project teams have many nuances, which makes management of teams, demanding (Jay, 2003; Baiden, Price and Dainty, 2006; Pheng and Chuan, 2006; Fong and Lung, 2007).

- Project role-players are distinct and important (Assaf and Al-Hejji, 2006; Wang and Huang, 2006; X Meng, 2012).

- Project Management has a major role to play in the attainment of project success (Howell and Koskela, 2000; Pheng and Chuan, 2006; Toor and Ofori, 2008).

- Information Technology is changing the way in which projects are managed (Alshawi and Ingirige, 2003; Rezgui, 2007; Froese, 2010; Lee and Yu, 2012).

- The 21st century is changing the management landscape and is giving rise to new challenges for the industry and Project Management (Egan, 1998; Dainty, Cheng and Moore, 2003; Ballard and Howell, 2004b; Rezgui, 2007; Toor and Ofori, 2008; Bhargav Dave and Koskela, 2009; Froese, 2010; Lee and Yu, 2012).

- Research undertaken in the industry mostly relates to technical project related matters (Chinowsky, Diekmann and Galotti, 2008; Peterson *et al.*, 2011).

- Communication is still a very important and integral part of any performing team (Verma, 1996; Griffith and Watson, 2003; Dainty, Moore and Murray, 2006; Werner *et al.*, 2011; Tipili, Ojeba and Sa 'adiya Ilyasu, 2014; Sherrat and Farrell, 2015).

2.7   Chapter Summary

In this chapter, a comprehensive and detailed literature review which highlights the current trends and commentary both nationally and internationally, relative to the construction industry in general, but also focusing on the research topic was undertaken.

This chapter also presented a summary of the review of literature related to the study. The literature review was presented under various headings which identified certain aspects relative to the study's investigative questions and domain. Once the literature summary is dissected and analysed, the following questions come to mind:

- Why are role-players still not performing optimally?

- What is negatively/positively affecting role-player performance on projects?

- In which ways could role-players be motivated towards optimal performance?

- Is there a lack of focus on the "human" aspect of management related to the project team environment?

- What are some of the non-negotiable environmental conditions which affect project role-players functioning optimally?

- What are the disreputable issues which make these role-player teams difficult to manage?

- What are managers and leaders of project teams currently doing correctly or incorrectly relative to teams performing optimally?
- How is performance management implemented in the project team environment?
- Which solutions available relate to the major problems which arise through the identification of areas where PMs will need to adapt and change from old or currently used methods, tools, styles and theories?

These unanswered questions further assisted in the formulation of the various investigative questions for the research.

The following chapter addresses the Theoretical and Conceptual Frameworks used in this study.

3. CHAPTER 3: THEORETICAL AND CONCEPTUAL FRAMEWORKS

3.1 Introduction

This chapter introduces the reader to the Theoretical and Conceptual Frameworks that underpin the topic and the main problem.

The following sections present the reader with the theoretical and conceptual frameworks which guide the researcher and assist the reader to comprehend the topic of sub-optimal performance in construction project teams in relation to the many fundamental concepts which form part of the research. Towards the end of the chapter, the evolved Conceptual Framework illustrates the various factors identified for optimising construction project role-player performance in a diagrammatic format.

3.2 Introduction to the Theoretical Framework

Henning *et al.* (2004:25) state that the theoretical framework guides the research into a clear and identified position in the discipline in which the research is undertaken. The chosen theoretical framework provides a lens or viewpoint from which the world is perceived (Henning *et al.* 2004:25). This viewpoint clearly states the "point of entry into the research", which would be dissimilar from discipline to discipline, due to the different manner in which disciplines engage with the topic and the actual purpose of the study (Henning *et al.* 2004:26).

Yin (2012:9) notes that the theories used could challenge or support the current literature, and that the qualitative researcher should be careful not to let the theory "limit your ability to make discoveries". Yin (2012:9,10) emphasises that a study with a theoretical base is easier to implement compared to a study with no such base to commence from, and the value of the study's findings might be questioned.

The proposed theoretical framework in this study, attempts to highlight in line with Herzberg's and other motivation theorists, strong links between satisfaction and role-player performance. The aim is to identify how Performance depends on four factors; namely, inherent ability, developed competence, opportunity and, motivation. Combining the Two-factor theory with the performance models created a strong logical link between the theories' motivators/hygiene factors and the model's motivation/opportunity factors.

3.3   Theoretical Framework for Individual Performance

As previously mentioned in Section 2.5.3, well-known motivation theorists have created revolutionary theories in the field of motivation (Verma, 1996; Gerber, Nel and Van Dyk, 1998; Werner *et al.*, 2011). In general, motivational theories are usually defined in two categories, namely content or process theories (Walker, 2011). Content theories focus on what, or the factors that motivate people, and the Process theories focus on how people are motivated (Verma, 1996; Gerber, Nel and Van Dyk, 1998; Walker, 2011; Werner *et al.*, 2011).

In relation to other motivation theories, Table 4, adapted from Walker (2011), shows the chronological order in which some of the major content theories were developed.

Table 4: Content theories of motivation in chronological order

Maslow's hierarchy of individual needs	Herzberg's motivation-hygiene theory	McClelland's theory of learned needs	Alderfer's ERG theory
Early 1950's	Late 1950's	1960's	1970's
Self-actualisation	Motivators (job content factors e.g. satisfaction)	Achievement	Grow th
Self-esteem		Pow er	
Social (group affinity)	Hygiene's (organisational factors e.g. pay, w orking conditions	Affiliation	Relatedness
Safety		(Not concerned w ith primary needs)	Existence
Physiological needs			

Emanating from the main research problem identified and subsequent investigative questions, both the content and process theories provide guidance towards the identification and solution of the research problem. This statement is mindful of Walker (2011:108) stating that many motivation theories are "slanted" towards the motivation of semi-skilled workers and not educated professionals. Through careful deliberation; identifying work related theory and the fact that the chosen theories' original study participants included knowledge workers (accountants and engineers), it was decided to place specific interest and focus on the theory put forward by Frederick Herzberg (Two-factor or Motivator / Hygiene theory).

Oldham and Richard Hackman (2010) note that Herzberg's approach to motivation and job design was revolutionary. If the definition given by Gibson and Brown (2009:16) for a Grand Theory is applied to Herzberg's Theory, it does comply in that it

accounts for "generalised social practices" and more importantly it is not "specific" or "localised" to a certain domain or setting. Sachau (2007) notes that it would be wise to use Herzberg's theory as a "metatheory of employee growth and development". Cameron and Mcnaughtan (2014) enforce the validity of specifically Herzberg's research and theory by noting that as part of Positive Organisational Scholarship and Positive Change Practice, the assumption is made that there is always the desire of humans to improve and that most systems actually have the capacity to harbour this improvement.

Sachau (2007) boldly promotes the resurrection of Herzberg's theory, encouraged by "surprisingly consistent" alignment with current emerging positive psychology research. This is so, after claims were made over time that Herzberg's theory was dead and of no more use to operatives (Sachau, 2007).

As mentioned before, strongly related to Hertzberg's Theory, both Scholl (2003), Werner *et al.* (2011), McShane and Von Glinow (2013) have created models which indicate links between motivation, the operating environment and an individual's performance. Henning *et al.* (2004:26) show that the theoretical framework provides the researcher with the space within which he or she can clearly indicate his/her biases towards the study. Therefore, the mentioned job satisfaction/motivation theory and performance models relate strongly to the research question which is aimed at firstly; gaining insight into the motivation and project environmental factors on construction projects, and secondly to:

- Enhance the industry and PMs' understanding of the phenomenon of sub-optimal performance experienced by the construction project teams;

- Investigate and appreciate the role that PMs could play to assist in the motivation of project role players and in creating optimal performance environments; and,

- To create valuable insight by which a PM and role-player interaction could be guided during future project life-cycles.

The research is embedded in Herzberg's theory with assistance from the performance model proposed by Werner *et al.* (2011). A full description of Herzberg's theory and Performance models is presented in the next section.

3.3.1 Herzberg's Theory

Herzberg's theory is mostly known as the "two-factor" or "motivator / hygiene" theory (Werner *et al.*, 2011).

Verma (1996:64) and Sachau (2007) state that Herzberg's theory is a very controversial theory. Verma (1996:64) supports this belief with the following comments:

- Some work related factors could only lead to satisfaction and others would only assist a person becoming dissatisfied which could put a person in a "neutral" position of not being dissatisfied; and,

- The level of the "neutral" position could escalate as people expect more.

Gerber *et al.* (1998:279) notes a very close relation between Maslow's theory and Hertzberg's theory. In addition, Gerber *et al.* (1998:279) indicate that Herzberg added the following valuable insights:

- A broadened outlook of Maslow's theory and application in the workplace;

- Focus on task enrichment to motivate;

- Explanations related to the limited influence on motivation of money, fringe benefits and working conditions; and,

- Managers focus mostly on hygiene factors, which will not motivate workers.

Ruthakoon and Ogunlana (2003) tested Herzberg's theory related to the Thai construction industry with engineers and foremen as respondents. The following is presented:

- The theory was not entirely applicable to the Thai industry;

- Motivation factors were responsibility, advancement, growth possibilities and supervision;

- Hygiene factors where working conditions, job security, site safety and relationships with others; and,

- Recognition, the work, policies, administration, interpersonal relations, personal life and status were reflected as items which contribute to satisfaction and/or dissatisfaction.

Further commentary and criticism of the theory note that:

- Interviews were used, and objectivity could have led to certain interpretations (House and Wigdor, 1967; Werner *et al.*, 2011); and,

- The research population only consisted of accountants and engineers, and the generalisation of the research outcomes and recommendations applied to all workers (Werner *et al.*, 2011).

In summary, Herzberg (1966:x) gives a clear indication of the essence of the theory which noted:" The primary functions of any organisation, whether religious, political or industrial, should be to implement the needs required for man to enjoy a meaningful existence".

Related to Herzberg's theory the research outcomes are the following:

- What the major performance barriers could be for project role-players which would keep hindering them from being satisfied in the project team environment;

- Possible strategies for motivating role-players towards optimum performance from the "neutral position";

- Enhancing PMs' capabilities on the formation of optimum performing teams; and,

- Identifying feasible motivation strategies which have been used with success in other industries, for use in the construction project environment.

3.3.2 Performance models

As noted in the literature review, Werner *et al.* (2011) note that performance levels of individuals can relate to the following factors:

- Inherent ability;

- Developed competencies;

- Opportunity; and,

- Motivation.

Scholl (2003), McShane and Von Glinow (2013) have very similar models and added the individual's role perception to the above list. Individually these authors also note situational factors and resources as factors to consider when looking at what enables individuals to perform.

Related to the aforementioned performance models and of importance to the research, the following outcomes are presented as:

- To identify the major performance barriers affecting project role-players;

- Possible strategies for motivating role-players towards optimum performance;

- To enhance PMs' capabilities to form optimum performing teams;

- Clarification of the effect of role-player culture on performance;

- To develop understanding of team diversity for increased performance;

- Ascertain current and possible Project Management practices which clearly enable or hinder role player performance; and,

- Identifying feasible motivation strategies for use in the construction project environment.

As previously stated in Section 1.6 (The Delimitations and Assumptions), it is assumed that all Project team members have the inherent ability and developed skills to operate at the required level as set out by the various professional bodies when appointed to a project team. This assumption is made due to the following reasoning:

- To ensure that the study focuses on the issues in the research problem;

- The nature of appointments as per the SACPCMP for professional Construction PMs and general project constraints do not allow for PM's to be responsible for identifying training or inherent ability issues; and,

- South Africa has a skills shortage and this has been widely addressed and confirmed as a constraint towards development of the local economy and service delivery. Solutions and proposals for solving the skills shortage do not form part of this study.

An adapted model from Werner *et al*. (2011) shown in Figure 5 highlights the following:

- The discussed delimitations and assumptions, noting clearly that Motivation and the opportunity to perform are focus areas for the research; and,

- The location of the Theoretical framework for Individual Performance.
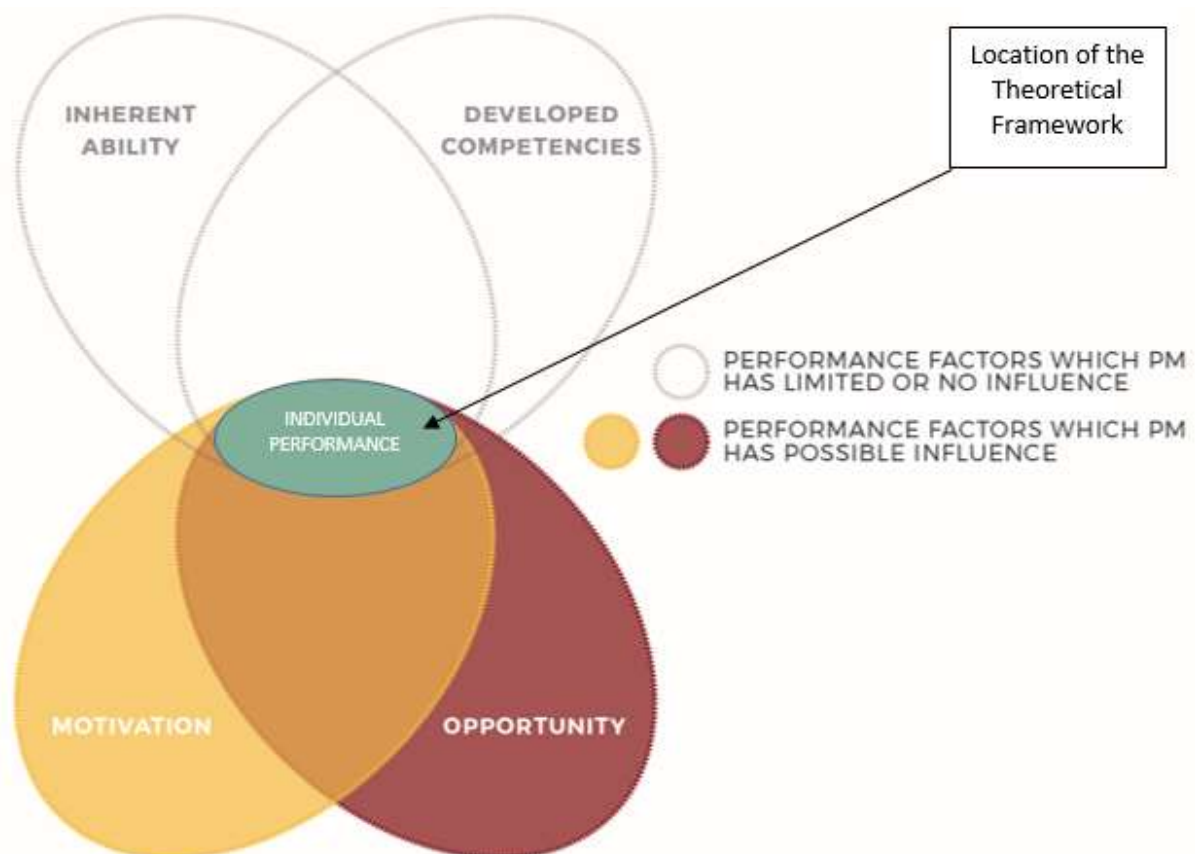
Figure 5: Adapted performance model noting location of Theoretical Framework

3.4   Conceptual Framework for Optimal Performance

In this section, the pertinent concepts which underpin the theoretical framework are discussed. Okolie (2011) and Henning *et al.* (2004:26) note that the theoretical framework creates a platform for the creation of a conceptual framework. Henning *et al.* (2004:26) concur that the conceptual framework is "an alignment of the key concepts of the study". Gibson and Brown (2009:17) clarify that the various concepts "serve as interpretive frames for labelling, categorising, telling people about, analysing" and in a greater sense "giving meaning to the world".

At the end of this section (Section 3.4), the application and co-existence of the theory and performance model and its concepts are discussed in detail as a synopsis of the Theoretical and Conceptual frameworks.

3.4.1.1 Herzberg's Motivator/Hygiene Theory Concepts

The two main concepts which emanate from Herzberg's Theory are Hygiene Factors and Motivators. Both these concepts will be discussed in the following sub-sections.

3.4.1.1.1 Hygiene Factors

The word 'Hygiene' is a medical term indicating a preventative and environmental concern that has the possibility to not "make people healthy, but it can prevent illness" (Sachau 2007; Herzberg 1966:74). The word "Maintenance" factor was also recommended as a synonym for "Hygiene" (Herzberg 1966:74).

Hygiene factors are in most cases external or extrinsic to the team member (Herzberg, 1965, 1968; Werner *et al.*, 2011).

The Hygiene factors, if they are in place, could assist with creating a situation where a team member is experiencing no dissatisfaction (Herzberg, 1965, 1968; Verma, 1996; Werner *et al.*, 2011). Nevertheless, the limitation of a hygiene factor is, that it would not lead to a team member experiencing satisfaction (Herzberg, 1965, 1968; Verma, 1996; Werner *et al.*, 2011).

The satisfaction of Hygiene factors does not automatically enhance productivity and motivation; it could at best only realise a neutral level of no dissatisfaction with a role-player (Verma, 1996:64).

Gerber *et al.* (1998:278) and Werner *et al.* (2011:96) comment on Hertzberg's theory, that management and unions in many instances focus on the hygiene factors to motivate workers, which is seldom or never the case. This could result in people becoming "hygiene seekers" who strive towards material things and are bound to being "perpetually miserable" due to "the satisfaction of hygiene factors" being "of short duration" (Sachau 2007; Herzberg 1966:89). Herzberg (1966:13) suggests that humans should rebel against lusting after the "animal needs" (hygiene) because the constant gratification of only those needs always leaves the recipient with "partial utilization of his ability".

In relation to monetary incentives, Sachau (2007) indicates that Herzberg's theory never indicated that monetary incentives would "ruin intrinsic motivation" but subsequent research has shown negative effects such as the undermining of interest in work activity and "over justification" (Sachau, 2007).

Herzberg (1965; 1968; 1974), Verma (1996:65), Gerber *et al.* (1998:276) and Werner *et al.* (2011:95) note the following hygiene factor examples:

- Quality supervision;
- Fair compensation;
- Working conditions;
- Company policies;
- Status; and,
- Job security.

3.4.1.1.2 Motivators

Motivators assist team members to experience satisfaction (Herzberg, 1965, 1968, 1974; Verma, 1996; Werner *et al.*, 2011). Motivators are mostly intrinsic or internal to the team member (Werner *et al.*, 2011).

Herzberg (1965; 1968; 1974), Verma (1996), Gerber *et al.* (1998), Pink (2009) and Werner *et al.* (2011) indicate that the following could be seen as motivators:

- Performance and success in completion of tasks;
- Acknowledgement of success achieved;
- Work design;
- Responsibility;
- Autonomy;
- Mastery;
- Purpose;
- Advancement or promotion opportunities; and,
- Personal growth.

Walker (2011:22) concurs with 'Autonomy' as a motivator, noting that in recent research the degree of autonomy of PMs had the biggest effect on their job satisfaction.

As a general comment, Walker (2011:108) proposes that managers can influence performance by understanding intrinsic and extrinsic motivators.

3.4.1.2   Performance models Concepts

In relation to the discussed performance models and the identified research focus, the following concepts are defined and validated (Sections 3.4.1.2.1 to 3.4.1.2.3) under the headings:

- Performance;

- Opportunity – Enabling Environment; and,

- Motivation.

3.4.1.2.1 Performance

The performance concept is discussed in line with the three entities which require performance in relation to the project outcomes. The three entities being:

- The industry as a whole;

- The project team; and,

- The individual role-player.

3.4.1.2.1.1 Performance – Construction Industry

Performance in general (nationally and internationally) relative to the construction industry is sub-optimal (Egan, 1998; Carr and Tah, 2001; Aibinu and Jagboro, 2002; Takim, Akintoye and Kelly, 2003; Ballard and Howell, 2004b; Leung, Ng and Cheung, 2004a; Assaf and Al-Hejji, 2006; Xue *et al.*, 2007; Emuze, 2011; Xianhai Meng, 2012; X Meng, 2012). Due to the lacklustre performance, there were calls towards the end of the previous century and at the start of the 21st century for changes in the way that the construction industry operates (Egan, 1998; Edum-Fotwe and McCaffer, 2000; Dainty, Cheng and Moore, 2003; Ballard and Howell, 2004a).

Performance in the construction industry is closely related to Performance Measurement. Many parameters and indicators have since been developed to measure and quantify project performance. For many years the "Iron Triangle" parameters (Time, Cost and Quality) developed by Barnes (1988) has been the main measure of performance. Subsequently, many authors have noted the requirement for

a more holistic measure of performance (Takim, Akintoye and Kelly, 2003; Cheung, Suen and Cheung, 2004; Hughes, Tippett and Thomas, 2004).

3.4.1.2.1.2 Performance – Teams

Well known team and group development and performance models also indicate stages through which groups move towards performance (Tuckman, 1965; Drexler, Sibbet and Forrester, 1991). It appears that teams have certain barriers to overcome before performance can be realised. Further to the discussion in Section 2.5.4, this movement is evident in Figure 6 and Figure 7 respectively illustrating the Team Performance model (Drexler, Sibbet and Forrester, 1991) and also the Group Development stages by Tuckman (1965).
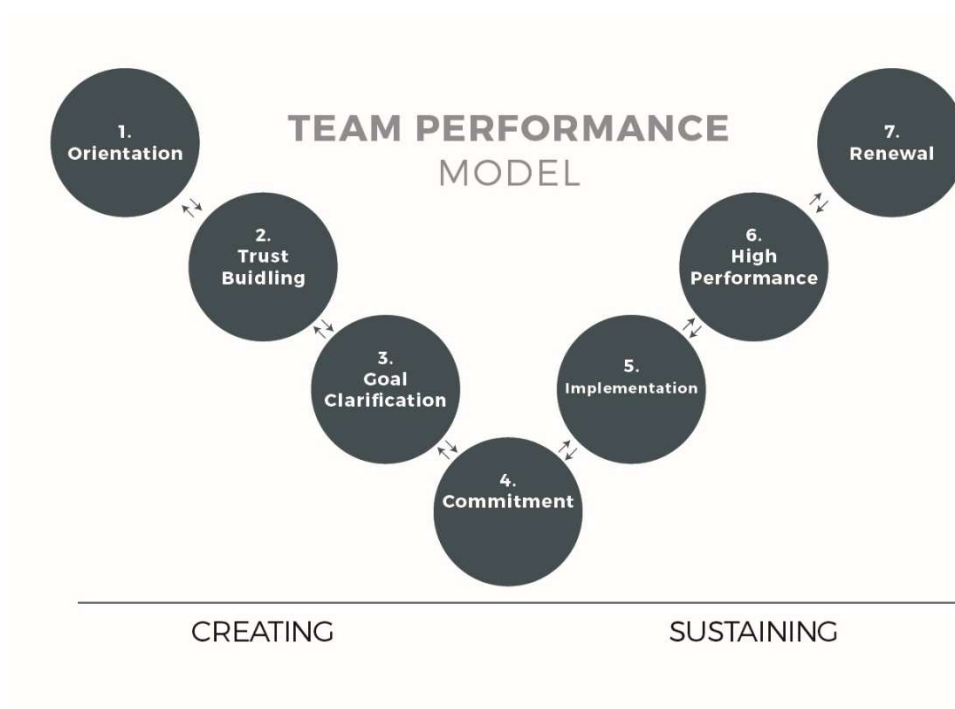
Figure 6: Team performance model (Drexler et al., 1991)

Figure 7: Group development stages (Tuckman, 1965)

3.4.1.2.1.3 Performance – Individual

Various performance models have been established to identify what factors influence an individual's performance (Scholl, 2003; Werner *et al.*, 2011; McShane and von Glinow, 2013). It is pertinent that motivation, opportunity, developed competence, inherent ability, role perception, situational factors and resources, influence performance. Within the built environment, performance is directly related to the requirements as per the various contracts, service agreements and the perceptions of other role-players.

3.4.1.2.2 Opportunity - Enabling Environment

Werner *et al.* (2011:107,108) indicate that as part of the factors that influence performance, opportunity could relate to a team member being able to demonstrate their ability to perform.

As noted in the various performance models, the individual needs the opportunity to perform (Scholl, 2003; Werner *et al.*, 2011; McShane and von Glinow, 2013). The opportunity relates to resources required to do the work, or situational factors. For instance, a worker could be motivated, have the inherent ability (talent), develop competency (skill), but if a person is placed in an under-resourced environment, they will not be able to perform. If a performance enabling environment does not exist, performance is not likely to occur or be seriously restrained. Jay (2003:25) notes that if a manager is able to create the "right" environment for the team to operate within, the members will "effectively motivate themselves".

3.4.1.2.2.1 Construction Project Team Environment

According to Herroelen & Leus (2004), and Bertelsen *et al.* (2007) the construction project team environment is an uncertain and complex environment with defined characteristics differentiating it from other industries and environments. The construction project environment is the environment within which the main role-players on a project operate. Relative to the environment, the client, contractor and consultant are in contractual agreement with each other for certain services, products and financial reimbursement (Assaf and Al-Hejji, 2006; Sherrat and Farrell, 2015).

The three role-players would meet and be in constant interaction during the various phases of a construction project lifecycle. Various means of communication are used

(verbal, written and electronic) to convey instructions, requests, technical information, contractual or legal matters, strategic thinking, feedback, etc. In support of these comments, Sherrat and Farrell (2015:40) propose that the construction industry is a very social one where a range of people bring their skills/knowledge to "work as a team and achieve project success".

3.4.1.2.3 Motivation

As one of the factors on which individual performance relies, it would be a PM's intent to motivate role-players on their team.

Verma (1996:56) quotes Herzberg and notes that: "Motivation is an intrinsic phenomenon. Extrinsic satisfaction only leads to movements, not motivation." Motivation can be defined as "the force within us that arouses, directs and sustains our behaviour" (Werner *et al.* 2011:82). Verma (1996:60) further notes that "motivation is dynamic and complex".

In this research, as one of the factors that influence performance, Herzberg's views and outlook on motivation and motivators is used to define the concept. This is directly linked to the theory discussion in Section 3.4.1.1.2 (Motivators) which clearly reiterates how Herzberg defined and implements the 'motivators' concept.

3.4.2 The evolution of the logic from the working Theoretical Framework to the Conceptual Framework for the research

When Herzberg's Theory is married with the models created by Scholl (2003), Werner *et al.* (2011) and McShane and Von Glinow (2013) it creates a strong basis for the proposed conceptual framework.

The combination of the theory and models has evolved during the literature review to show that the hygiene factors as indicated by Herzberg could have the same implication within the performance models, specifically when linked to the "opportunity" factor. An elementary deduction is also made to link the motivators in Herzberg's theory with the "motivation" factor in the performance models. The combination of the theory and models and its influence as mentioned above is shown in Figure 8.
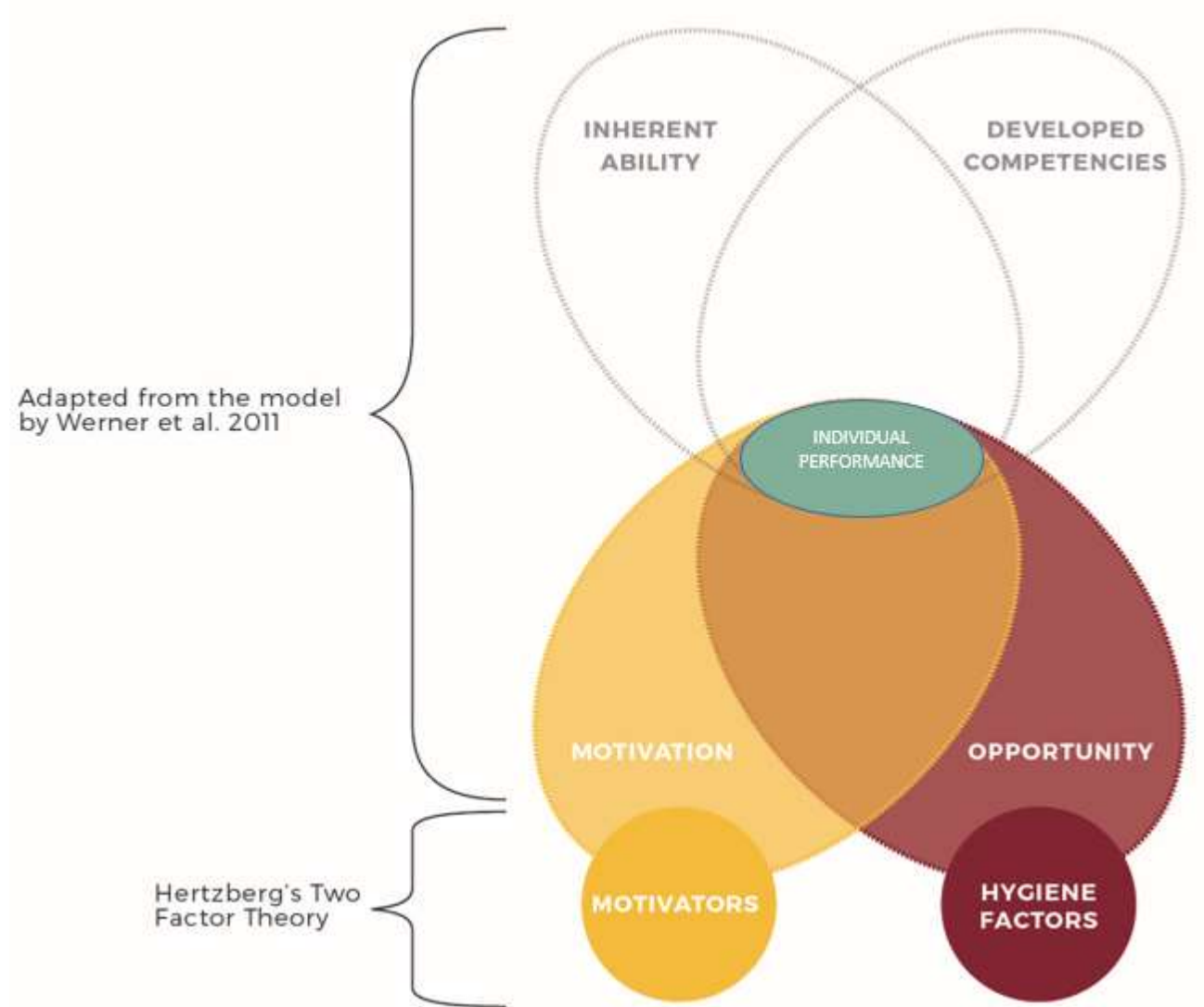
Figure 8: Combination of theory and models

Figure 9 illustrates the adaption of the created framework incorporating and modifying the initial performance models, to not only show impact on the performance of an individual, but also the flow deducted from Herzberg to which he alludes to in his theory, whereby a person would only be able to be motivated once the hygiene factors have been satisfactorily fulfilled and the person has become not dissatisfied. Only once a person is in a "neutral" position, can they be motivated to perform optimally.
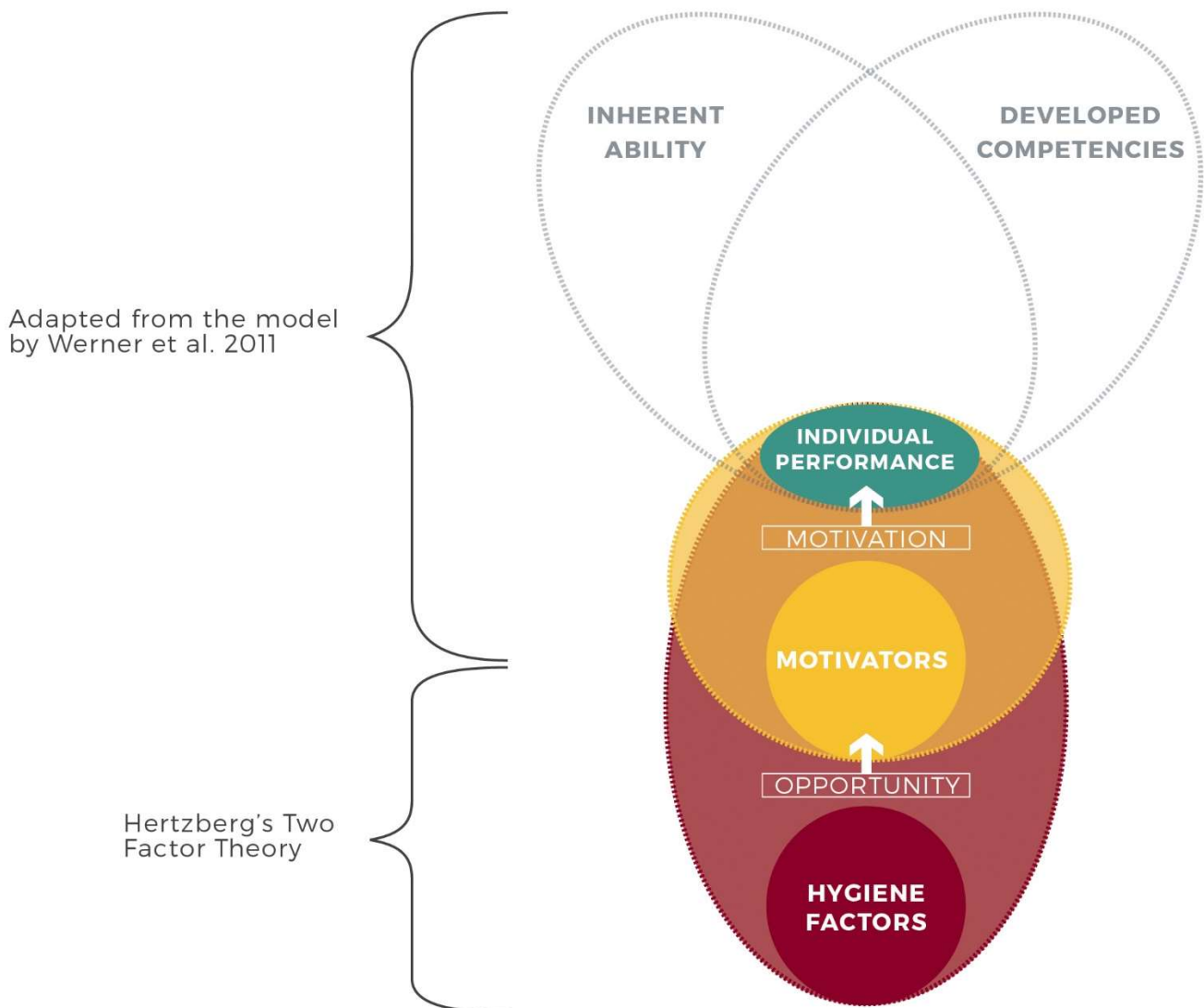
Figure 9: Adaptation of Theory and Models to show flow from Hygiene factors towards Motivators

The final proposed Conceptual framework depicted in Figure 10 below, is recommended and unfolds as follows:

- As afore mentioned, there is a possible flow from the bottom up from being dissatisfied, becoming neutral and finally aiming for satisfaction for the role-players;

- The ability of the hygiene factors to only move a person towards neutrality;

- The probability that the existence of three of the performance model factors, namely inherent ability, opportunity and developed competencies is only able to create a situation where a person is either dissatisfied or neutral;

- Only the motivators could logically lead to motivation which will, in all probability, lead to possible satisfaction and performance; and,

- Taking into account all the commentary, it can be noted that at the height of satisfaction lies Optimal Performance.
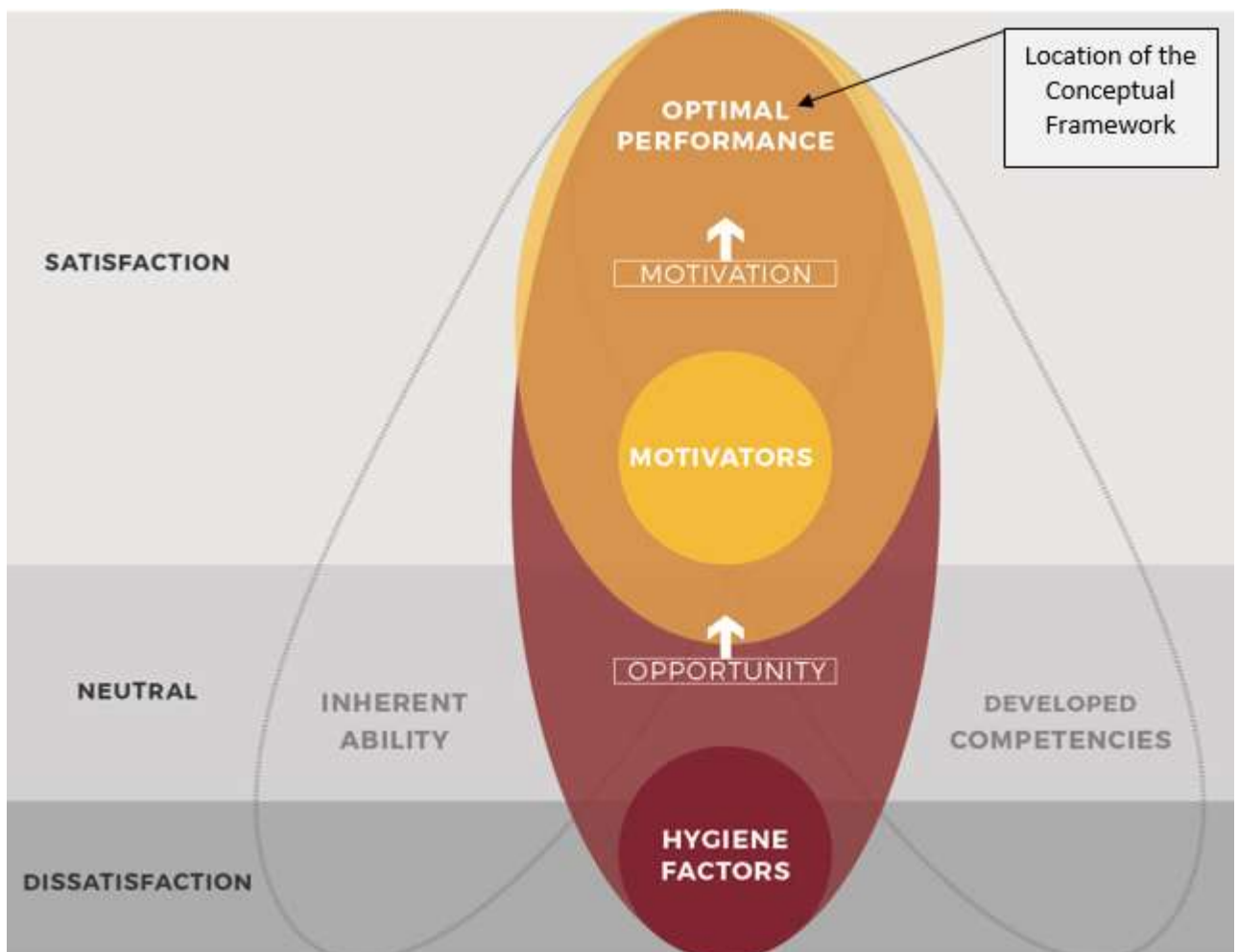
Figure 10: Final Proposal of Conceptual Framework for optimizing construction project role-player performance

3.5   Concluding remarks – Theory and Concepts

The focus of this chapter has been to describe the "composition and location" of the Theoretical and Conceptual frameworks. Yin (2012:7) indicates that case studies could be used to either study a remarkable event, or an everyday/common phenomenon. Yin (2012:7) further notes that when a researcher undertakes a case study related to an everyday or common phenomenon, such as the sub-optimal performance of construction, that a "compelling" theoretical framework be presented to ensure that the research will add valuable insights to the existing literature.

In this vain, the proposed theoretical framework is identified and suggests, inline with Herzberg's and other motivation theorists, strong links between satisfaction and role-player peformance. Performance seemingly depends on four factors, namely inherent ability, developed competence, opportunity and motivation. As illustrated, a combination of the Two-factor theory with the performance models creates strong logical links between the theories motivators/hygiene factors and the models motivation/opportunity factors.

The conceptual framework emphasises that without any of the four performance dependants, performance cannot be achieved, let alone optimal performance. The combination of the theory and model proposes the existance of an order related to the satisfaction of the person involved linked to the performance factors. The possibility exists that even if inherent ability, opportunity and developed competence are in place, that performance will not be optimal and the persons experience would be neutral. Both leave the person (role-player) dissatisfied or neutral and the project owner in jeopardy due to a possible lack of performance. Both these situations lead to dismal project outcomes and would keep on enforcing the current view that projects and the industry are performing sub-optimally.

Together, motivation and opportunity have strong underlying roots in both the project environment and the persons employer organisation, thus making many of the assumptions and outcomes difficult to predict. Numerous factors could be dependant on either the project or employer organisation environment. In essence the employer organisation influences the creation of the opportunity and motivation towards performance. This has a direct impact on the personal motivation and opportunity needs on a project.

Herzberg (1965) equates and summarises the needs of humans by using two biblical examples of how God defined the goals of two men. Firstly, Adam, the first human being, was banished from the Garden of Eden and seemingly was set to battle unhappiness in the environment he had to navigate. The needs of Adam relate to the avoidance of physical discomfort (hygiene factors). Secondly, God calls a human towards "innate potential" and stating that this human is capable (motivators). In the second instance, Abraham was called by God to be exceedingly more and was given a vision of a great future. According to Herzberg, both these needs exist in humans, to have a comfortable environment and the ability or ambition to attain optimum potential. The one need cannot be ignored, or exchanged for the other.

Deducting from the above commentary, it seems that if we do not create environments where humans as project team role-players can function as comfortably as possible, the result will be dissatisfaction, and the outcome will be low levels of performance. The fulfillment of a human's hygiene factors could lead to the possibility of a hypothetical position where the role-players are ready to be motivated. If these hygiene needs are not properly addressed and comfort created, a human will always be lured back into the fight against discomfort or dissatisfaction.

Furthermore, if the desires of these project team role-players are not aroused to fulfil their full potential and be part of fulfilling their own and the project vision, there will be continued low levels of performance.

The possibility of working with motivated humans, could and should excite any true leader. For PM's in construction, each team role-player could then strive for excellence. Clients will be motivated about the possibility to undertake more construction projects and role-players would want to work together, repeatedly. The role-players would investigate more options to build on the synergy and high energy levels created by role-players being highly motivated and performing optimally to realize both their own and team objectives.

This research identifies ways in which the role-players' potential can be unleashed and create teams which complete projects optimally and timeously. It appears that currently the above scenario sounds utopian, but a dream to be pursued nevertheless.

3.6 Chapter Summary

This chapter noted where both the Theoretical and Conceptual Frameworks are located through the combination of Herzberg's Theory and individual Performance models. Both the theory related to Herzberg's Theory and the Performance models were noted, and subsequently the various concepts which are key to this study, were discussed.

Henning *et al.* (2004:25) importantly state that the theoretical framework anchors the research in the literature. It was the aim in this chapter to clearly indicate the links between, what is noted in literature and specifically the theories and models which exist and are applicable. The various concepts which relate to the understanding of the theory and models were discussed and implied in the manner in which they will be used, defined and understood during the research as the conceptual framework.

The following chapter clarifies the Research Methodology and Design chosen for this study, and incorporates a qualitative approach using the case study design.

4. CHAPTER 4: THE RESEARCH METHODOLOGY AND DESIGN

4.1 Introduction

Fellows and Liu (2008) reflect on research in the construction industry and note that research is a "voyage of discovery". On this voyage, the research could discover new knowledge or support existing theory (Fellows and Liu, 2008).

This chapter indicates which philosophical assumptions, methodology, design and analysis types have been selected to undertake the study 'voyage' while aiming to create new knowledge or enforce current theories.

4.2 The research problem and study objectives

As stated in Section 1.2, the research problem relates to the sub-optimal performance of construction industry role-players. The research question requires clarification on how project role-players can be motivated and their operating environment improved to ensure optimal performance.

Taking the research problem and question into account, the research speaks to the motivation of project teams towards optimum performance and ultimately enhancing project role player performance. The full set of objectives and outcomes are explained in Sections 1.7 and 1.8, with this chapter aiming to identify the alignment of the philosophical assumptions and methodology with these sets of objectives, outcomes and finally the overall research problem.

4.3 Philosophical assumptions

Creswell (2013:16) defines philosophy as being "the use of abstract ideas and beliefs that inform our research". Shakantu (2014) reflects that a researchers philosophical assumptions guide and shape the subsequent choice of strategy through which to solve the underlying research problem. Knight and Ruddock (2008) agree when indicating that a research project's methodology is a combination of the "rationale and the philosophical assumptions" on which the study is founded, and further influences the methods used and analysis types employed to gather and make sense of the data.

Creswell (2013:15) goes further to note the difficulty of being both aware of, and incorporating the researchers philosophical assumptions and beliefs into a research project. It could be construed that our philosophical assumptions and beliefs would

influence the theories we evoke for usage and direction towards a research topic (Creswell, 2013a).

Rubin and Rubin (2012) reflect with prominence, the reasons for, and understanding a certain philosophy in a research project and the ensuing research tools employed:

- The philosophical understanding guides the undertaking in relation to the role of the researcher and manner of flexibility in the data collection;

- Regulatory bodies do not accept research with no clear stated assumptions;

- In certain research, a standard compliance is required in relation to the choice of paradigm, and,

- The global understanding of the pros and cons of various techniques used and in line with the assumptions made.

Further to the general comments on philosophy, Creswell (2013:19) identifies the following philosophical assumptions or beliefs to be expressed when undertaking research:

- Ontological assumptions – reflecting on the "nature of reality and its characteristics";

- Epistemological assumptions – stating "how knowledge is known", "what counts as knowledge and how knowledge claims are justified"; and

- Methodology – "the process of research".

With regards to these stated philosophical assumptions, the following sections clarify the various assumptions made.

4.3.1 Ontological assumptions

Knight and Ruddock (2008) state that ontology could reflect on our "conceptions of reality", while Nicholas and Hathcoat (2014) note that the aim of ontology is to "dissect the underlying structure of reality". In relation to Creswell's (2013:19) definition, ontological issues converge around the "nature of reality and its characteristics".

Shakantu (2014), Nicholas and Hathcoat (2014) reflect that in broad terms, all ontological stances are either based on an Objectivist or Subjectivist position. Blaikie (2011) reflects a similar distinction between philosophical views when noting that the

"nature of social reality" falls either within the view of either "material phenomena" or the "set of ideas that human beings have". Shakantu (2014) indicates that the philosophical stances of objectivist and subjectivist positions could be traced back to the opposing ancient world philosophies expressed by Parmenides (objectivist) and Heraclitus (subjectivist).

Nicholas and Hathcoat (2014) further note the following in relation to an Objectivist or Parmedean philosophical stance:

- Realism aligns clearly with an objectivist stance, reflecting on realities which exist "independent of the human mind and are governed by causal laws and mechanisms". Realism driven research aims to find a defined truth for a certain reality; and,

- Historical realism denotes a reality which is seen as a "product" or the outcome of history. This type of realism believes that reality is shaped or constructed over time and if it exists in history. Karl Marx and Friederich Engels commended the notion that historical forces "shape individual consciousness".

Nicholas and Hathcoat (2014) summarise the following when reflecting on a Subjectivist or Heraclitan philosophical stance:

- Reality in this stance is constructed through the social factors surrounding a participant. This stance is usually defined as Constructivist. The Subjectivist ontology reflects strongly, in direct contradiction to realism, that a human's mind "completely imposes meaning upon reality". Both the philosophical stances of Postmodernism, Idealism and Transcendentalism are part of a Subjectivist stance. Idealism described by Blaikie (2011) as the proposition that major differences exist between natural and social phenomena mixed with humans making and giving meaning to their experiences which finally creates a "social reality".

The philosophical stance in-between the above mentioned opposing ontological stances is "Scientific realism" or "Critical realism" (Nicholas and Hathcoat, 2014). In Scientific realism, the researcher reflects on the idea that research would describe a participant's reality independent of the person, but it still indicates value towards human input into knowledge of a reality which is fallible.

Ontologically, this research undertaking is assumed to be through the lens of the internal reality of a personal and subjective experience. It is based on the premise that teams are made up of individual people working within them, with respondents experiencing "multiple realities" (Creswell, 2013:20). Project success is dependent on each person's performance as a part of the greater drive towards success. Each person has a subjective view, interpretation and experience of their own relation within the team and what a performance environment would or could be. Each person also has the same subjective views of what could motivate them towards optimum performance. The conclusion drawn from the interaction with the role-players would also not be finite, due to the fact that the role-player's views and perceptions might change.

Supporting this view, the philosopher Heraclitus famously stated that "you cannot step twice into the same river; for fresh waters are flowing in upon you" (Aylward 2008). Aylward (2008) comments that this metaphor clearly notes that situations are constantly in flux. With careful consideration of the identified ontological stances, it was decided that this stance could enhance the general understanding, meaning and management of the phenomena of sub-optimal performance in project teams.

4.3.2 Epistemological assumptions

Epistemology reflects on what exactly knowledge is and how it can be known (Creswell, 2013a) or the nature, limits and acquisition of knowledge (Knight and Ruddock, 2008). Bakker (2012) refers to the notion that epistemology is possibly "sound common sense" when reflecting on what could be "valid and reliable" knowledge. Shakantu (2014) indicates that there are two contradicting epistemological stances. These being Empiricist or Rationalist. Pernecky (2017) notes that these two stances are "two rival doctrines" which was seen as the main epistemological stances for decades.

Empiricist epistemology, as explained by Blaike (2002), reflects "that knowledge is produced by the use of the human senses, that knowledge comes from 'observing' the world around us". There is a strong sense of being objective, and that what is 'observed' can be denoted in a scientific manner, while claiming that the knowledge gained is "sure and certain" accurate evidence, which is a "true representation" of the external world.

A Rationalist epistemology, on the other hand, directs its focus toward the "unobservable collective consciousness can be found in the consequences it has on people's lives or in the thought process and structures of the mind itself" (Blaikie, 2002). O'Leary (2011) argues that in Rationalism, "reason drives knowledge and that truth is found through intellectual logical processes". O'Leary (2011) further exclaims that the "power of knowledge" can be found in how skilfully we can use the created knowledge in "rational and informed" outcomes, to improve people's lives.

Reflecting on the above ontological discussion and aiming to align the ontological assumptions with the epistemological, the researcher's Epistemological stance is Rationalist. In line with the Rationalist epistemology, the research interprets the rational actions, perceptions, views and experiences of the role-players.

As a requirement noted by Creswell (2013), with this study, the researcher endeavours to intimately engage the construction role-players involved in project teams and thus bring the in-depth data from within each person's experience to the surface. Through the engagement, attempting to peel away layers of superficial feedback and dwell deeper in the attainment of rich and rewarding data to create knowledge which could assist in understanding the sub-optimal performance phenomenon.

4.3.3 Paradigms

Fellows and Liu (2008) note that a research paradigm "includes the system by which people view events" and influences the further questioning and discovery. When discussing research methods in construction, Fellows and Liu (2008) take cognisance of the following paradigms:

Positivism:

- This paradigm only recognises "non-metaphysical facts and observable phenomenon";

- Research issues are observable and measureable;

- The researcher or observer remains uninfluenced by both their observation and measurement of the phenomenon;

- The observer should be objective and their existing knowledge is excluded from the research process, which raises questions such as:

- How investigations are instigated?

- How investigations are carried out?

- How conclusions are formulated?

- Strong relations could be found with a Quantitative research approach;

- In relation to the aims of positivism as a paradigm, it seems that the absolute objectivity and accurate observation is questionable, and seem to be more devised and linked to natural phenomenon such as the measurement of temperature etc.; and,

- The paradigm puts the principles of replication of results and reliability to the fore.

Interpretivism:

- Reality is relative (to the observer) and therefore many realities could exist;

- This paradigm is "particularly valuable for research in management" related topics;

- Truth and reality could be seen as social constructs to be derived from the feedback of participants and do not exist independently in the overall environment;

- Extensive discussion and interaction with participants are required to devise the truth and reality in a certain situation;

- This paradigm aligns often with a Qualitative research approach;

- Knowledge in this paradigm reflects the truth and reality of participants in a certain context; and,

- Interpretivism reflects an anti-positivist epistemology.

In conclusion, on the impact of the relevant research paradigm on the overall research project, Fellows and Liu (2008) posit that "techniques are devised and developed by researchers, and so, encapsulate the values of those involved…".

4.3.3.1 Interpretivist paradigm

The above mentioned Ontological stance and Epistemological assumptions align with an Interpretivist paradigm, as discussed above.

Henning, van Rensburg and Smit (2004:19) note that the interpretive researcher understands that pure observation has possible flaws and that most theory is open to revision and even change. In contrast to pure scientific methods of research, Henning *et al*. (2004:20) indicate and agree with the idea of situations being in constant flux which gives rise to uncertainty, which they note to be a key principle in this paradigm.

Henning *et al*. (2004:20) state that: "Reality is assumed to exist, but to be imperfectly grasped because of, basically, flawed humans with their biases or the theoretical standpoints that underpin their work." This statement relates to the viewpoint that interpretive researchers have the belief, that no one researcher will be or is able to capture a situation perfectly, and that the best possible way of making sense of a certain phenomenon is to view it through many "fallible" perspectives (Henning, Van Rensburg and Smit, 2004).

Lastly, Henning *et al*. (2004:41) are adamant that the interpretive tradition should be moving beyond only assessing the content of feedback received, which would rather relate to a positivist research undertaking, but move "beyond content as empirical fact".

4.3.4 Research Methodology

Henning *et al*. (2004:36) state that a methodology discussion in an academic thesis or dissertation should not only be a clear description of what methods are available to be used, but a careful argument as to why the proposed methods used in the study are chosen and best suited to extract the data. Henning *et al*. (2004) note further that "each study stands or falls on its methodological qualities".

This section addresses the research methodology and design used in reaching the study's objectives (Section 1.7) and resolving the research problem (Section 1.2). The data collection method and research strategy are noted, with clarification of the type of data required from the population and specification of the sample size.

4.4　Research Approach

Fellows and Liu (2008) state that research approaches reflect more on the collection and analysis of the collected data and not so much on the initial examination of theory and literature. The approach however does impact on the type of analysis to be used and finally on the "results, conclusions, usefulness, validity and reliability".

Flyvbjerg (2006) indicates that the choice of approach should not be methodology driven put problem driven. The problem at hand should dictate the approach. The following summarises the research approaches investigated:

Quantitative approach:

- Strongly relates to a positivist paradigm;

- Gathers facts to be used to prove relationships between facts;

- Measurement is used to create quantifiable data;

- Precise definition of subject matter under investigation is required; and,

- A Quantitative approach could "restrict the scope and potential" of a specific research undertaking.

Qualitative approach:

- The aim with this approach is to "gain insights" and "understand people's perceptions";

- Beliefs, understandings, opinions and views reflect the data collected;

- Data is detailed and rich in both "content and scope";

- The objectivity of the approach is questionable;

- Analysis of the data is difficult and laborious; and,

- Intimate involvement of the researcher in the research process.

Triangulation studies:

- Quantitative and Qualitative data are used; and

- "Multi-dimensional view of the subject, gained through synergy" of the combined data sets;

To guide the discussion in the next section, it could be noted that Knight and Ruddock (2008) reflect that the qualitative research methods and designs are clearly "rooted in an interpretative research paradigm". The interpretative paradigm is used to frame the overall research paradigm as discussed in Section 4.3.3.1 and in alignment with the ontological and epistemological assumptions expressed (Sections 4.3.1 and 4.3.2).

The next section indicates the relevance and discussion surrounding the choice of a Qualitative approach for this study.

4.4.1 Qualitative Approach

As an introduction to the qualitative approach, Denzin and Lincoln (2003:1,3) indicate that this approach to research has been used formally for the past 100 years and is used throughout a wide spectrum of academic disciplines. Morse and Richards (2002:9) clearly state that qualitative research is challenging, demanding, rigorous and in the end should lead to defensible and useful conclusions.

Creswell (2013:44) notes the following definition pertinent to Qualitative research: "Qualitative research begins with assumptions and the use of interpretive/theoretical frameworks that inform the study of research problems addressing the meaning individuals or groups ascribe to a social or human problem. To study this problem, qualitative researcher's use an emerging qualitative approach to inquiry; the collection of data in a natural setting sensitive to the people and places under study; and data analysis that is deductive and establishes patterns or themes. The final written report or presentation includes the voices of participants, the reflexivity of the researcher, a complex description and interpretation of the problem, and its contribution to the literature or a call for change."

Each of the above mentioned elements does find purpose and understanding in the subsequent sections in this chapter when reflecting on the following:

- The research design;

- Population and sampling method;

- Data collection method;

- Type of Analysis used;

- Research strategy and process;

- The data, and,

- Generalisation of research findings.

For the purpose of understanding the qualitative process and research, Denzin and Lincoln (2003:5,6) use two pertinent metaphors which assisted with accommodating the process of knowledge making in this study.

Firstly, Denzin and Lincoln (2003:5) equate the qualitative researcher with a quilt maker, which takes data and pieces these together to "specifics of a complex situation".

Secondly, Denzin and Lincoln (2003:5) note the concept of a montage as a picture, created from many different images.

Both of these metaphors suggest a slow and painstaking creative process of making sense of an issue by using pieces and parts to make a "new creation" of knowledge (Denzin and Lincoln 2003:6). Stake (2005:448) makes it clear that the qualitative researcher aims at "complexities connecting ordinary practice in natural habitats to a few abstractions and concerns of the academic disciplines".

Noting the above statements, the choice of approach relative to the construction industry, is supported by the following:

- It is stated that currently in the construction industry, many researchers associate research with a quantitative approach (Adejimi *et al*. 2010) which makes this research undertaking different. Knight and Ruddock (2008) note that current construction management research is largely objective, mostly quantitative and aligns with the positivist research paradigms and note a general industry wide "methodological conservatism";

- There seems to be a definite move towards using more qualitative approaches (Amaratunga *et al.*, 2002; Thorns, 2012). This is being driven by the need to comprehend material and non-material issues (Thorns, 2012). It is further stated that there are clear signs of growth in the use of qualitative research approaches in specifically the built environment (Amaratunga *et al.*, 2002);

- It has also been shown that qualitative interviewing has increased in its use in the Built Environment (Adejimi, Oyediran and Ogunsanmi, 2010; Thorns, 2012);

- A journal article related to using qualitatively enriched semi-structured questionnaires, indicates that the addition of qualitative data can give rich and meaningful results (Adejimi, Oyediran and Ogunsanmi, 2010), which is what is required to answer this study's research questions and deal with the intricate phenomenon of sub-optimal performance. As found in this study, it is also stated that qualitative research can be a powerful tool to study the meaning that people place on events, processes and structures (Amaratunga *et al.*, 2002);

- Finally, but probably the most important, the aims of the research are best met by a qualitative approach (Morse & Richards 2002:25). The research question and subsequent objectives in this instance are not informed by measureable outcomes and variables, but rather the opposite. The objectives are met by careful systematic analysis of powerful and rich word data which leads to better understanding and appreciation of the sub-optimal performance phenomenon. The major desire for understanding, greater insight and future application is met by a qualitative approach to the research. Morse and Richards (2002:5) state that qualitative research gives the researcher the following options, which in this study assisted in meeting the objectives:

  - Different perspectives of viewing the current reality;

  - Different ways in which to organise chaos; and,

  - Using the above to interpret different realities.

4.5 Research Design

Research design could be seen as "the plan for conducting the study" (Creswell, 2013:49). Rugg and Petre (2007) suggest the following are the main types of research designs commonly used:

Case study:

- The researcher does focus on detail within the identified case; and

- A rich understanding is gained;

- Outcomes and findings are very interesting; and,

- Interesting questions arise from such case studies.

Survey:

- Optimal sample size is important;

- Surveys are not synonymous with questionnaires; and,

- Unanswered questions remain related to research outcomes.

Field experiments:

- Respondents do not answer questions, but rather give feedback in relation to their actions;

- Larger sample sizes are required than for case studies;

- Samples are usually random, which could influence outcomes quite drastically; and,

- Certain research questions though are unanswerable via a Field Experiment.

Controlled Experiment:

- Changes and influences introduced by the researcher are measured and results shown;

- The sample of the population is controlled; and,

- The variables are minimised to identify with the goal of the research.

Rugg and Petre (2007:67) summarise related to designs, and state that each design has advantages and disadvantages. It is important to be aware of the above strengths and weaknesses to ensure that the right design is chosen (Rugg and Petre, 2007:67).

4.5.1 Case Study

Knight and Ruddock (2008) point out that the Case Study as a research design is "highly relevant to an industry that is project driven", but it is noted that the design is not widely used.

This research undertaking is best encapsulated in a case study design. This decision is justified by the following supporting commentary:

Gerring (2007:20,37) defines a case study design as "the intensive study of a single case where the purpose of that study is, at least in part, to shed light on a larger class of cases (a population)". For further clarification, Yin (2012) defines a case study as: "An empirical enquiry about a contemporary phenomenon (e.g. a case), set within its real-world context – especially when the boundaries between phenomenon and context are not clearly evident". Stake (2005:443), Gerring (2007:10), and Yin (2012) indicate that case studies, as a design, are a common way of undertaking qualitative research. Case studies provide the researcher with "rich descriptions" and "insightful explanations" (Yin 2012:5). Gerring (2007:2,3) further motivates the use of case studies, by noting that in almost all industries and academic disciplines, case study designs are used and even "thriving", thus moving from a "variable-centred approach" towards a "case-based approach" to gain understanding.

Flyvbjerg (2006) clarifies that if there is substantial distance from the research object and little or no feedback, it could lead to a "stultified" or dull learning process which in turn could lead to "ritual academic blind alleys" whereby the actual value of the research is unclear and in some ways untested. The use of the case study could indeed be a possible solution to the tendency of not paying attention to "blind alleys" which are not clearly encapsulated in hypothesis and problem statements (Flyvbjerg, 2006). This was, at the data collection and analysis stage, found to be an ideal situation and advantage for the current study in relation to the many issues which surfaced during the research process.

Yin (2012:5) states that the choice of a case study is also influenced by the research question. Case studies are relevant if the research questions are either descriptive or explanatory, thus wanting to know "what is happening", or "how it is or why it is happening". For this research, the questions are descriptive and explanatory, which

supports the choice of a case study design. For reference, the investigative questions are listed in Table 5:

Table 5: Statement of Investigative Questions

Teams – Dynamics, Organisational Culture and Diversity:
Question 1:
Question 1a: What are the team dynamics that influence project role-players' performance?
Question 1b: What environmental factors are causing dysfunction within the project teams?
Question 2:
What is the effect on performance of the combination of the various role-player organisational cultures on the projects?
Question 3:
In what ways does the diversity of role-players impact performance?
Leadership/Management – Influence and Practice
Question 4:
Question 4a: What is the influence of the project manager on the role-players' performance?
Question 4b: What management and leadership practice would be needed to enable optimum role-player performance?
Performance – Drivers, Motivators and Barriers
Question 5:
Question 5a: What are the performance barriers experienced by role-players?
Question 5b: What drives role-players to perform?
Question 5c: What motivates role-players to perform?

Although widely used, there are still many arguments and negative commentary towards case studies and their research objectives / outcomes. This could be due to

possible misunderstanding of the design (Gerring, 2007:5,8). In the research design defence, Stake (2003:134) notes that the case study is the most common design for qualitative studies, and relates more to the choice of "what is to be studied" than the method to be used. For better understanding and clarity, it is also indicated that the case study is "defined by interest in an individual case" and not by the specific methods used to research the case (Stake, 2005:443). Yin (2012:5) notes the following as current concerns, and poses some reactions, when undertaking case study research:

- Some researchers view case studies as only being used during a study's exploratory phase. Yin (2012:5) makes it apparent that this view is out-dated, and that case studies "go well beyond" the exploration phase; and,

- There could be a lack of trust related to the credibility of the procedures used by the researcher and there might be problems with some researchers not being able to generalise the research findings to the wider community. Yin (2012:5) notes relative to this comment that if a case study is done poorly, the above mentioned might well be the case but, if done correctly, a researcher will use systematic procedures for both the collection and analysis of data and then be able to generalise the findings analytically.

Gerring (2007:19) notes that in the social sciences, case studies are related to "social or political units", which in this research, would relate to each of the construction projects. The author further indicates that case study research could include more than one case, in a multiple case study, although the intensity of the study would decrease at some stage as the number of cases grow (Gerring, 2007). A full discussion on the use of multiple cases is given in the following section highlighting the detail of the cases for this study.

4.5.1.1 The Multiple/Collective Case Study

Stake (2003, 2005) identifies three types of case studies, namely: Intrinsic, Instrumental and Multiple/Collective case study.

The difference between the three types of case studies can be summarised as:

- Intrinsic: The specific case is of great interest to the researcher. Understanding of a specific issue or phenomenon is not the end goal (Stake, 2005);

- Instrumental: The chosen case is studied to create better understanding of a current issue. The case in itself is not the main focus. The case assists with the understanding of the current issue (Stake, 2005); and,

- Multiple/Collective: "When there is even less interest in one particular case, a number of cases may be studied jointly in order to investigate a phenomenon, population, or general condition" (Stake, 2005). The understanding of the chosen cases could lead to better understanding of a larger group of cases (Stake, 2005).

Taking the above descriptions of the types of case studies into account, the following was critical for this specific study:

- The understanding of an overall issue or phenomenon is definitely the aim. In this study, the phenomenon of sub-optimal performance of construction role-players is under scrutiny, and,

- Not only one case is examined, but many. This is due to the fact that four projects consisting of identified role-players did form part of the study; each project is a case with a specific context and influences, thus giving the study a broader base and justification for generalisation of the results.

By taking the above explanations and research population into account, a multiple/collective case study is identified as the ideal design for the research.

4.5.2 The Case

Yin (2012:6) states that defining the case is very important, because your literature review and research questions will relate to this case, or cases. If you find through the process of data collection that the initial definition of the case should be changed, it would then mean that additional literature should be reviewed and the research questions adapted (Yin 2012:6). Yin (2012:6) goes further to define a case as the following: "generally a bounded entity (a person, organisation, behavioural condition , event, or other social phenomenon)". The case also serves as the main unit of analysis (Yin 2012:6).

For this research and taking into account that a multiple case study is used, it is sufficient to note that each project provided participants from each role-player group who served as the "bounded entity". This then makes each of the projects, a case.

The unit of observation, defined as "an object about which information is collected", would be seen to be the individual project team members (Lavrakas and Boyd, 2008). This highlights the fact that each case is made up of a group of construction project role-players and their combined views could provide the relevant data for analysis.

4.5.3 The Case Study Context

Both Stake (2005:444) and, Fontana and Frey (2005:716) note that the case study focuses on the experiential knowledge and the influence of the current context (social, political, etc.).

To further clarify the choice of case study, the literature indicates the importance of context (Stake 2005:449). Context is described by Stake (2005:449) as being the "milieu or situation" within which a case is situated. The context can relate to history, cultural, physical, social, economic, political, ethical or aesthetic environment (Stake 2005:449). Yin (2012:4) notes that when choosing a case study as the research design, an assumption is made that both the context and complexity of the conditions surrounding the phenomenon are essential to understanding the case. Stake (2005:452) makes the point that the context is expected to influence the case, but even if there is no evidence that it is not, it should be described. Henning *et al*. (2004:41) argues that the context within which the case exists, is the case, and that the interface between the context and actions of the participants would in the end, be the research unit of analysis.

Taking the above into account, full descriptions of the case context and on-going influence is discussed during the analysis of the data.

In conclusion, Creswell (2013:48) indicates that the context or setting of each participant is important and what is said cannot be seen in isolation from "the place where they say it".

4.6 Population and proposed sampling method

As an explanation of the use of case studies in research, Gerring (2007:1) states that there are times when "in-depth knowledge" based on a single case could be of much more value than high level superficial knowledge related to a large group of participants. Stake (2005:460) and Gering (2007:20) make it clear that a case study outcome is not representative of the entire population or "world", but rather of the case,

thus gaining and creating an "extension of experience". Taking this statement into account, it can be noted that the many role-players who participated in this research did provide input for the various project cases, from which conclusions and interpretations were made; and the outcomes are representative of these project cases. Although the experiential knowledge gained, could be extended onto other cases.

Stake (2005:450) notes that formal sampling is required for both instrumental and collective/multiple case studies and that the chosen cases should be representative of the overall population (Stake, 2005). Taking into account the commentary related to formal sampling, representativeness and sample size, the following was decided:

The population for this study consists of persons involved in the construction projects as identified by the representative role-player groups (Acharya, Lee and Lee, 2006):

- Clients;

- Contractors, and,

- Consultants.

These three groups are clearly defined in different strata and were chosen as they are seen to be the three major role-players during any construction project. The mentioned role-players are thus able to provide sufficient input into the investigative questions stated earlier.

In this case, the sampling is defined as Proportional Stratified Sampling (Leedy and Ormrod, 2001), where the sample for each strata is in proportion to the members in a generic construction project team. In this instance a generic team consists of:

- One client or representative;

- One Contractor, and,

- On most projects, seven consultants (an Architect, Quantity Surveyor, PM and four Engineers -Mechanical, Electrical, Civil and Structural).

The ideal population sample was set out in relation to the 1:1:7 ratio derived from the Proportional Stratified Sampling (Leedy and Ormrod, 2001). It was aimed at involving as many role-players in line with the guiding ratio as possible until the saturation point in the interview data is reached and no new or alternative trends can be identified.

Proportional Stratified Sampling assures representativeness, decreasing the chance of excluding population members and comparisons between stratum can be made (Miller, 1991:62).

The disadvantage to this form of sampling is that it requires accurate information on each stratum's population and a stratum can be incorrectly classified (Miller, 1991:62). In this study, the advantage of cross comparison of feedback between cases in relation to typically what the various clients noted on all the projects, was invaluable for the analysis and for the proposed outcomes. Furthermore, the mentioned disadvantage to the stratified sample is not a concern for this research undertaking due to the strata being clearly classified due to their varying roles and responsibilities on a project. In fact, it was simple and logical to identify the strata.

A summary Table 6, shows the reader the ratio of participation of each strata.

Table 6: Ratio of research participants

Strata	Ratio of Participation	Strata Identification
Proportional Strata 1	1	Clients
Proportional Strata 2	1	Contractors
Proportional Strata 3	7	Consultants

As a final comment on the sample/population and in line with the proposals made by Morse and Richards (2002:15), the research topic, related to the sub-optimal performance of construction project role-players, was firstly identified before the sample/population was identified or chosen.

4.6.1 The case sample

In this study, a purposive sample of cases was used, "building in variety and acknowledging opportunities for intensive study" (Stake 2005:451). Stake (2005) and Henning *et al*. (2004:71) concur that the selection process should have an emphasis on choosing cases where there is potentially the greatest "opportunity to learn" (Stake 2005:451). Stake (2005) also indicates that the choice should fall on the case where

we can learn the most. It could be the most accessible or the case with which one could spend the most time with (Stake 2005:451). In case studies, Stake (2005:451) indicates that the potential for learning is sometimes an overriding factor and not representativeness.

Henning *et al*. (2004:71) claim that these cases do have "desirable participants" due to the experience the participants have with respect to the research topic. Stake (2005:451) posits that even when utilising the collective case study design, the "selection by sampling of attributes should not be the highest priority". The make-up of the cases, being balanced and of a wide variety, is important, but the opportunity to learn is even more important (Stake, 2005:451). Henning *et al.* (2004:71) further notes that "snowball sampling" could be used at some stage due to the fact that the data gathered to date could indicate whom the researcher should interview next.

Gerring (2007:21,22) indicates that case study samples are small, usually less than twelve. Stake (2005) notes that in relation to the randomness of the sample that "even in the larger collective case studies, the sample size usually is much too small to warrant random selection.

For this research, four cases where identified due to the mentioned variety, opportunity for learning, access, ability to spend time with participants and the experience of the participants. Creswell (2013:157) concurs with the number of cases identified when noting that 4-5 cases is the maximum that the author would include in a case study. All relevant detail of the cases are explained and discussed in Section 5.2 which gives an overview of each case study's context.

4.7   The Research Data Collection Method - Interviews

Kvale (1996:1) rhetorically asks the question: "If you want to know how people understand their world and their life, why not talk to them?" As background to the interview design, it should be noted that the interview as a method for data collection is historically quite new and that individuals and their experience have not always been seen as important (Gubrium and Holstein, 2003:22). Gubrium and Holstein (2003:26) further note that the interview respondent is able to give a "detailed description" of the respondent's "thoughts, feelings, and activities".

Rugg and Petre (2007:135) indicate that interviews in general have the following components:

- Interviews are seen to be interactive;

- Interaction during an interview is in real time; and,

- Interviews use natural language to engage the respondents.

Amaratunga *et al.* (2002) and Miles and Huberman (1994) note that Qualitative research is "conducted through intense and/or prolonged contact with a field or live situation" whilst aiming to get a rich and holistic view of a real live occurrence which could potentially reveal complex issues. This view is enforced by Kvale (1996:1,19) who states that the qualitative interview is a means to understand a participant's world view and their experiences; and notes that it is a very "specific form of conversation". Fontana and Frey (2005:697) state that "interviewing is one of the most common and powerful ways in which we try to understand our fellow humans". For both the qualitative and quantitative studies, the data gained is currently seen as being accurate and unbiased (Fontana and Frey, 2005:698). Kvale (1996:9) has similar sentiments when noting that "narratives and conversations are regarded as essential for obtaining knowledge of the social world, including scientific knowledge."

Henning *et al.* (2004:20/53) confirm that interviewing is part of the Interpretivist methodology and make a clear differentiation between two types of interviews:

- Standardised interviews: where the interview is a neutral tool used objectively to extract data from an interviewee (Henning *et al.* 2004:54). Where the researcher needs to control the interview process; the data should be "without pollutants in a "standardised" procedure of non-interference from the interviewer". In this case, the interviewer is neutral and solicits feedback by using questions in a forthcoming environment. The interview is still seen as only a data extraction process and is not a "data making process" (Henning *et al.*, 2004:54). This arouses the question whether objectivity could ever be achieved in a situation where two people interact? Due to the aim of trying to extract data which is as objective as possible, the possibility of knowledge creation and using it as a "discursive event" is discarded, and,

- Discursively orientated interviews: the process of data collection is seen as a social interaction. The interviewer and interviewee are "co-constructors" of the data (Henning *et al*., 2004:57).

In both types of interviews, it seems that the references suggest that the researcher should look beyond the actual text data in order to make sense of what is actually being said which could enrich understanding (Henning *et al*. 2004:65). As noted by Fontana and Frey (2005:695), the interview data will be "inextricably and unavoidably historically, politically, and contextually bound". Due to this fact, the literature further indicates that interview data are neither objective nor neutral (Fontana and Frey 2005:695). It seems that the above notion has changed the interview's emphasis from being a "neutral" tool, to one where the interviewer is "empathetic" and actually takes a stance on an issue, working towards a "collaborative effort" between two people in the process of making sense of an issue (Fontana and Frey 2005:696). Fontana and Frey (2005:696) go further and note that the researchers involved in social sciences agree that they actually need to interact with the participants of interviews and acknowledge this fact.

A further advantage is, that the researcher's openness could lead to openness and revelation of more information and being honest (Fontana and Frey 2005:696). Such a discussion has clarified common issues, as Henning *et al*. (2004:55) state that: "Getting a person to speak frankly is not easy and the pure interview is a fallacy".

The new stance in interviewing is to be empathetic towards the interviewee and becoming an "advocate and partner" to work towards a solution or betterment of the interviewee's situation (Fontana and Frey, 2005:696). Taking the "empathetic" stance, in relation to the proposed study means the following:

- Being focussed on the aspects which could make each role player perform "better" or potentially create higher performance in the construction project environment and in the end making them happier with their operating space;

- Discussing ways and means to achieve higher project success rates. This could spur the individual and industry to create a more sustainable environment in which to conduct business, and,

- In the words of Herzberg (1966:x), "implement tasks that make man enjoy a meaningful existence".

To ensure the "intense" interaction and sourcing of "rich" data based on the proposed research questions, interviews were held with the defined role-players in each of the cases (Clients, Contractors and Consultants). The individual interviews were conducted in a semi-structured manner to ensure that all the relative issues highlighted by literature are covered. The pilot highlighted the fact that participants might not discuss pertinent issues or literature topics if not specifically asked about them. A full description of the pilot study and its role is given in Section 4.9.6.

4.7.1 Interview Questions and Guide

Henning *et al.* (2004:72) suggests that the interview questions should assist to create the impression in the interviewee, of being on a journey with a companion. In this vein, Henning *et al.* (2004:72) state that the novice researcher should be assisted/guided by the set of exemplary qualitative questions penned by the legendary Kathy Charmaz and note that they are useful for qualitative interviewing (Henning *et al*. 2004:72).

Taking the above mentioned issues and example questions into consideration, the interview questions were set up to yield mainly qualitative data. However, the demographic data was collected in the form of numbers.

The interviews, focused on the context of each participant within the project case and aimed to solicit detailed information regarding their perceptions and their own experiences.

The questions were compiled into an interview guide. The guide consisted of an introductory section which explained the details of the study and a close-out section which notified the interviewee on typical outcomes of the research and the possibility of future assistance if clarification on any commentary made during the interview is required. The full interview guide can be viewed in Annexure 1.

4.7.2 Interview participant considerations

Henning *et al.* (2004:77) note interesting pitfalls which exist when interviewing participants. These are summarised as (Henning *et al*., 2004:77):

- Interviewees being afraid of "losing face" or being humiliated;

- Presenting to the interviewer a "preferred self" and not being honest;

- Interviewees aiming for consistency with what they are saying to the interviewer; and,

- Typically interviewees would like to make a good impression or be seen as "good people".

To overcome the above, Henning *et al*. (2004:78) promote certain measures:

- Using certain question types and wording during the interviews in order to reduce the incidence of interviewees being self-focussed;

- Indicating to the interviewee that the aim is not to get to the "ultimate truth";

- Accentuating the view that the interviewee is not some object for the gathering of data, but a person telling a story about their everyday life;

- Using a gentle tone of voice when questioning;

- Steering clear of judgemental phrases;

- Using the information gained during the interview in following questions, typically suggesting a "knowing approach";

- Giving the interviewee the leeway to be projective about situations or issues; and,

- Finally, starting with less threatening questions and moving towards more complex questions once you have "your foot in the door".

As far as possible, the above were taken into account during both the compilation and revision of the interview guide, the pilot and final data collection stages.

4.8   Qualitative Analysis

Gibson and Brown (2009:1) note that the success of a research project hinges on the data analysis. Marshall and Rossman (2010:207) define qualitative data analysis as: "a search for general statements about relationships and underlying themes". Gibson and Brown (2009:4) comment on the definition and note that themes are used to examine relationships in the data. Creswell (2013:45) further indicates that a strong characteristic of Qualitative research is the ability to use "complex reasoning through inductive and deductive logic" while building "patterns, categories, and themes from

the bottom up, by organising the data inductively into increasingly more abstract units of information."

Gibson and Brown (2009:5) make a further note in relation to a definite distinction between "Description", "Analysis" and "Interpretation". This distinction being summarised as:

- In a broad sense, "Description", relates to giving a proper account of the data, in line with and "close" to the original data;
- "Analysis" would then elaborate on the description and systematically identify relationships and key factors from the data, and,
- "Interpretation", would be the final step which aims to make sense of, and "creatively producing insights" related to the data.

The main difference between analysis and interpretation is that interpretation moves beyond the conservative analysis, only based on the controlled data, towards an "inventive and creative" space (Gibson and Brown 2009:5).

4.8.1   Presentation of the case study evidence

Yin (2012:14) clarifies that the evidence from the case study must be presented clearly. Here, tables and other forms of presentation can be used. Creswell (2013:187) states that both text, tables and figures can be used to present data. This then allows the reader to draw their own conclusions about the interpretation of the data (Yin 2012:15). Creswell (2013:48), however, cautions against a rigid structure when noting that in qualitative research, the writing would include "literary, flexible style that conveys stories, or theatre, or poems, without the restrictions of formal academic structures of writing."

4.8.1.1   Thematic analysis

Thematic analysis could be defined as "the process of analysing data according to commonalities, relationships and differences" in the collected data (Gibson and Brown 2009:127). Gibson and Brown (2009:128) further note that the three aims of thematic analysis are:

- Examining commonality (issues which are common across the data);

- Examining differences (contradictions and peculiar issues in the data set); and

- Examining relationships (the manner in which codes/themes relate to each other).

The overall aim of thematic analysis is the identification of "aggregated" themes from the data (Gibson and Brown, 2009:127). From a broad discussion relating to other qualitative designs, Gibson and Brown (2009:128) show that thematic analysis is used across the board to analyse the data in these designs, and specifically notes its application to cross-case analysis. This has a direct application to this research undertaking which also investigates multiple cases.

Challenges faced by presenting thematic analysis could be summarised as (Gibson and Brown 2009:196):

- The choice of "key forms and extracts" representative of the overall data and seen to be clear. This is typically overcome by "exemplification" (giving examples) which shows how the data is to be relevant to a specific "concept, code or category". This process is simplified by the use of a Computer Assisted Qualitative Data Analysis Software (CAQDAS) tool. In this study, ATLAS.ti was used with great success to organise and sift through the massive amount of transcribed data. The decision to use ATLAS.ti or CAQDAS tools in general, was greatly influenced by the author's exposure to these tools and their efficiency and capability, during participation in the SANTRUST PhD proposal development program. An evaluation of the usage of ATLAS.ti in relation to the overall research approach is given in Section 6.12 (Critical evaluation of the Research Approach, Techniques and Limitations).

4.8.1.1.1 Organising Thematic Data

Gibson and Brown (2009:196) refer to three ways of organising the thematic data:

- Structured around concepts: The themes that arise from the data are used to structure the analysis;

- Analysis using the cases: Each case is discussed and analysed. The process involves comparisons of responses (similarities and differences), and

- Organising analysis around research questions: Using the research questions to structure the data analysis. The process of analysis here, is structured

around each of the research questions and the themes which prevail are also addressed. Gibson and Brown (2009:197) comment that this is a "very clear way" to organise the analysis and ensuring a strong narrative which could be followed by the reader. Yin (2012:16) proposes that if the research is focussed and aimed at answering some investigative questions, the process of analysis should start with these questions.

Although each of the above has merit, the most logical way of organising the data for this study was through using the research questions to organise the analysis. The logical flow is from the research questions and objectives, through each of the cases; the sample strata (client, contractor and consultant) and the data. The aim throughout is to not lose the influence of the context on the cases, and its final impact on the results.

Thereafter the data were organised so as to show a movement towards the main concepts which were coded. Subsequently, the researcher then highlighted the identified categories as groups of codes huddled around a common issue and finally the creation of themes which arose from the categories. This gives proper structure and meaning to the process of thought, understanding and relevance to the final summary, conclusion and recommendations of the thesis.

4.8.1.1.2 Coding

Gibson and Brown (2009:130) define the use of coding in qualitative analysis as creating a "category that is used to describe a general feature of data" and this category could pertain "to a range of data examples". These codes then assist with the aims of thematic analysis (examining commonality, difference and relationships throughout the data) (Gibson and Brown, 2009:128).

To summarise, "codes are simply categories of data that represent a thematic concern" (Gibson and Brown, 2009:133).

4.8.1.1.3 Code Types - Apriori and Empirical

A clear difference related to the following types of codes is noted (Gibson and Brown, 2009:132):

- Apriori codes: These codes relate strongly to the research questions/interests. These are identified prior to starting the analysis.

- Empirical codes: These codes start to emerge once the researcher engages with the data. Typically these are codes or issues which were not previously foreseen. This coding type strongly supports qualitative research with respect to its flexibility to incorporate previously unforeseen issues of importance (Morse and Richards, 2002; Flyvbjerg, 2006). So, in a sense, this supports iterative research design (Gibson and Brown, 2009:133).

As part of the analysis of the transcribed data, codes were created and not predetermined. Therefore, in line with the definition, all the codes are empirical.

4.8.1.1.4 Creation of codes

Gibson and Brown (2009:134) provide an outline to assist with the creation of codes:

- Something occurring more than once;

- Something is said with intensity or strong emphasis;

- Parties agree, or an issue is unnoticed or not commented on;

- Disagreement with something, and,

- Mistakes and the resolution thereof.

As suggested in literature, each code was given a specific definition. This was done to ensure that a specific code is applied in accordance with the initial definition throughout the coding exercise (Gibson and Brown 2009:135). This ensures that the data related to a code is consistent and does not change or deviate during the entire process of analysis. The code definition includes the following:

- Outline of the code features; and,

- Rules of fulfilment to be included.

Consistency in the creation of the codes was assisted by analysing the various role-player strata separately when working through the interview transcriptions. This ensured consistency in the coding and making sure that cross-case analysis takes place by viewing commentary from each of the cases which could be applied to the relevant strata.

4.9 The Research Strategy and Process

The research was undertaken in the following manner, taking the mentioned headings in chronological order:

- Exploratory Literature Review;

- Clarification of the main research question and problem;

- Full Literature Review;

- Clarification of the research methodology and design;

- Research instrument design;

- Pilot interviews;

- Data Collection Tool Review: Review and finalisation of questions and interview guide;

- Data Collection;

- Analysis and Interpretation (coding, categorising and theming);

- Additional Literature Review in line with emerging issues; and,

- Conclusions and Recommendations.

The following sections (Section 4.9.1-4.9.10) give a brief description of each of the steps or tasks in the research process.

4.9.1 Exploratory Literature Review

As is good practice with most research, the study started with a broad review of current literature in relation to the initial interest of the researcher. This was aimed at the broad spectrum of issues which look at the performance of the construction industry and its role-players with specific interest in the influence of PMs.

4.9.2 Clarification of the main research question and problem

The exploratory literature review lead to a clearer understanding of the current issues and guided the researcher towards clarification of the specific research question and problem to be investigated.

4.9.3 Full Literature Review

During clarification of the research question/problem, a full and comprehensive literature review was conducted to flesh out the detail in relation to the main topics highlighted in relation to performance of role-players in the industry. These converged around the following:

- Teams – Dynamics, Organisational Culture and Diversity;

- Leadership/Management – Influence and Practice; and,

- Performance – Drivers, Motivators and Barriers.

4.9.4 Clarification of research methodology and design

The literature review provided the basis for investigation of current methodologies, movements in methodologies in the industry and the application of methodology in relation to the research question/problem.

Greatly assisted by input from the supervisors and SANTRUST PhD proposal development program presenters, the final methodological and design issues were ironed out.

4.9.5 Research instrument design

Again guided by the literature review in relation to both research content and methodological issues, the initial questions and interview guide were produced. On recommendation of the supervisors, these were used in the pilot study to test the efficacy.

4.9.6 Pilot Interview and Data Collection Tool Review

Marshall and Rossman (2010:95) state that Pilot studies test the researcher's strategies and ensure that the arguments and rationale are sound.

As noted above, before embarking on the interviews, the interview questions were tested through a process of pilot interviews to ensure that the respondents understood what is required and to ensure that the feedback received aligned with what was intended by the research questions. Stake (2005:453) indicates that many qualitative researchers do not spend enormous amounts of time and resources to develop a comprehensive instrument. This is due to the fact that, within the research process,

some questions seem to grow in maturity and complexity, and others fizzle out (Stake 2005:453). In line with this comment, feedback received from the pilot participants was used to revise and refine the interview questions. Through this process and constant feedback from the Study promoters, the interview questions and structure were finalised. The interview questions were designed to ensure that enough data and balanced information would be obtained.

Pilot interviews were held with persons knowledgeable in the research field and with industry experience. They were able to respond convincingly to the various questions. The pilot participants were also asked to comment on the general interview experience. A total of three pilot interviews were held with participants from the construction industry.

Invaluable lessons were learnt from the pilot interviews. The process and transcription of the data opened up various avenues and required various changes to be made to the initial interview guide.

The lessons learnt, changes made and implications for the research are summarised under the following notes:

- The initial interview questions were too vague and thus elicited only elusive feedback;

- The pilot interview settings were all in controlled environments (offices), which ensured that the sound quality of the recorded conversation was clear enough for detailed transcription;

- The interference of cell phone signals on the digital recorders' recording capability was quite harsh and in the second and third interviews, participants were asked to move their cell phones as far as possible from the recorder;

- A focussed discussion with each participant related to a current project, yielded positive results with useful data. This was a much better strategy than asking a participant questions about their entire industry experience. The project case study approach assisted with contextualising the four accessible cases rather than having participants giving feedback related to random project experiences. Random project experience feedback would have led to the context being totally derived from each participant's demographic information, and not a

specific project. This observation cemented the case study design to ensure achievable research outcomes; and

- The interview questions were reduced to the required minimum to ensure that the respondents could provide enough data for each question. This ensured depth of data, rather than volume.

4.9.7 Data Collection

"The qualitative research interview is a construction site of knowledge" (Kvale, 1996).

For the researcher to comprehend and conduct research on issues which were experienced or seen by the researcher himself, interviews were used to solicit the data from those who had experienced the research phenomenon (Stake 2005:453,454). The data collection entailed interviewing construction industry role players within the confines of the experience gained from the four project cases. The semi-structured interviews were held within purposively sampled cases where individuals operated. The role-player interviews were used to probe and seek to understand the underlying issues related to motivation and an optimal performance environment related to construction project team role players in each of the case projects.

Each interview consisted of two sections. The first section of the interview questions solicited general demographic information from the participant. The second section of the interview typically dealt with the clarification of perceptions, perspectives and understanding of the issues related to the research questions.

Prospective participants were requested to participate in the interviews via telephone and email. Requests for the interview were accompanied or followed up by a letter indicating the following (See Annexure 2):

- The qualification towards which the author is studying and its requirement for completion of a research thesis.

- What the research revolves around;

- A request to take part in the research by being interviewed;

- The contribution which the interviewee would add to the Project Management body of knowledge by participating in the research;

- The length and time it would take to perform the interview;

- Assurance of anonymity and confidentiality of the interviewees; and,

- General observation of research ethics.

4.9.8 Analysis/Interpretation (coding, categorising and theming)

After each interview, the electronic voice recording was transcribed. Once the transcribed data sets became available, they were analysed and interpreted. The full process is described in Sections 4.10.3 and 5.1.

Henning *et al*. (2004:20) state that a phenomenon is best understood by means of "mental process of interpretation" and the influence of the social context in which the phenomenon exists. Once the interpretation of each data set is complete, the various similarities and disparities are analysed and interpreted, in order to clearly identify what motivational strategies are being used, and enabling environmental factors in the current construction industry practice.

Morse and Richards (2002:18) suggest that the data should be creatively played with to move beyond "tidy explanations". The authors go further to note that theoretical models should be created and discussed to confirm ideas (Morse and Richards 2002:18). The extent of the full analysis and interpretation to deliver a creative outcome is discussed and summarised in Chapter 5.

4.9.9 Additional Literature Review in line with emerging issues

In line with qualitative research designs and an Interpretivist paradigm, not all issues can and are clearly identified in the initial literature review. As the interpretation of the analysed data becomes clear, some specific areas which require further reading become apparent.

At this stage specific issues which became evident and needed further review beyond the initial literature towards the merging and moulding of the final themes, were:

- Procurement;

- Leadership, and

- Team dynamics.

4.9.10 Conclusions and Recommendations

The final conclusions were drawn from the range of analysed data and taking into account the comprehensive literature review. Recommendations were made to specifically enhance the sections identified as objectives and aims of the research.

4.10 The Data

Yin (2012:10) indicates that in case studies, "multiple sources of evidence" could be used as data. These include (Yin 2012:10):

- Direct observations;

- Interviews;

- Archival records;

- Documents;

- Participant observation; and,

- Physical artefacts.

Two types of data which were used for the compilation of information for the research are interviews as primary, and related literature, as secondary data.

4.10.1 Primary Data

The primary data comprised of transcribed word data from the interviews conducted with various clients, consultants and contractors as identified within the target role-player groups. The relevant data were subjective feedback as transcribed word data from the construction industry role-player participants (Stake 2005:454) . Creswell (2013:173) cautions against the "lengthy" process of transcription of recorded interviews. For the researcher a vast amount of time and effort were spent in transcription of the recorded interviews.

4.10.2 Secondary Data

The secondary data were gathered from sources such as books, journals, magazines, newspapers and the internet. The secondary data were used in the literature review and data interpretation.

4.10.3 Specific processing/treatment of sub-question data

The following applies to all the sub-questions and data generated:

The data required:

Word data related to role-players' perceptions, views and experiences related to the sub-questions.

Where the data were located:

The three role-player groups are defined as Clients, Contractors and Consultants. Participants from these three groups were requested to partake in interviews, which solicited the data in line with the research questions.

How the data were secured:

An interview process was undertaken to solicit the data.

How the data were analysed and interpreted:

The interview data were transcribed by a professional assistant appointed for the task. The interview transcriptions were then analysed for content through coding in order to theme the data. ATLAS.ti Qualitative Data Analysis and Research Software (QACDAS) was used to analyse the data. Stake (2005) indicates that in a case study, the researcher should identify both what is particular to the case, and what is common. The research did endeavour to search for both of these and clearly identify the commonality and disparity in the participant's feedback. It is also borne in mind that the data produced and results of the study were influenced by the following (Fontana and Frey 2005:712):

- Type of interview;
- Techniques used in the interview; and,
- The way of recording the interview.

4.11 Generalisation of research findings

Yin (2012:18) proposes that analytical generalisation is suitable for case study findings. Analytical generalisation is dependent on the theoretical framework, which

then provides the logic behind the application to other similar situations (Yin, 2012:18). Yin (2012:18) defines the objective of the generalisation of the findings in a process:

- Step 1: Using conceptual claims which "informed the relationship among particular concepts, theoretical constructs, or sequence of events"; and,

- Step 2: Here the researcher applies the same theoretical propositions to other similar situations where the same "concepts, constructs, or sequences" might exist.

Case studies seemingly aim to generalise towards similar situations and not across populations (Yin 201219).

In this study, the Theoretical and Conceptual Frameworks clearly inform the entire research and will also inform general practice which occurs in "similar situations". These situations being multi-disciplinary teams which operate in project environments.

4.12 Ethics

"Qualitative researchers are guests in the private spaces of the world" (Stake 2005:459). Stake (2005:459) is very explicit in his comments on ethics and maintains that researchers should have the highest ethical codes.

Over time, associations have come to adopt an overlapping code of conduct which is highlighted by the following:

- Informed consent (Henning, Van Rensburg and Smit, 2004; Christians, 2005; Fontana and Frey, 2005): All involved must be informed of the type, extent and effect of the research. Included with informed consent is the agreement of the participant to voluntarily participate;

- Deception (Christians, 2005:144): All forms of deception or misrepresentation in anyway, are prohibited;

- Privacy and confidentiality (Christians, 2005:144) (Fontana & Frey, 2005:715): All participants should be guaranteed anonymity related to who they are and their locations;

- Accuracy (Christians, 2005:144): Data must be accurate. Any contravention should be seen as non-scientific and unethical; and,

- Protection from harm (Fontana and Frey, 2005:715). No harm should come to anyone during the process of data collection.

Following on the above comments, the researcher undertook to:

- Inform participants on how they would be reported on, prior to the research being undertaken (Christians, 2005; Stake, 2005);

- Participants would be able to access written up sections noting how they have been "presented, quoted, and interpreted" (Stake, 2005:459);

- Privacy and confidentiality of all information would be assured; and,

- All data collection and transcription would be done as accurately as humanly possible while using both software and electronic equipment to assist with the collection and analysis thereof.

4.13 Chapter Summary and General Reflection on the methodological path taken

Kvale (1996:4) equates the use of interviews in a metaphor using firstly a miner and secondly a traveller. The miner typically digs and finds information which is later refined and used as objective facts. The traveller freely roams the area of interest and acquires enough information through conversations to finally assist with the qualitative descriptions and interpretations which once written up, have an effect on future readers, but the journey also has an impact on the researcher (traveller).

Finally, the goal is to conclude and make recommendations on the data, all of which is still informed by current literature and linked to the context of the study environment (Morse and Richards, 2002:18).

The chapter noted the types of data which were to be sourced and the research methodology. The population sample and size were also discussed.

In summary, the Table 7 illustrates the methodological approach and proposed methods:

Table 7: Summary of Research Methodology

Ontological stance	Subjectivist
Epistemological stance	Rationalist stance
Paradigm	Interpretivist
Approach	Qualitative
Design	Multiple Case Study
Data collection Tool / Method	Interviews
Data	Transcribed interview word data
Type of analysis	Thematic analysis
Population	Industry project role-players
Sample	Proportional Stratified Sample

5. CHAPTER 5: DATA ANALYSIS AND INTERPRETATION

5.1 Introductory discussion on the analysed data and explanation of the analysis process

As discussed in Section 4.8.1.1, thematic analysis would be used to analyse, code, categorise, theme and present the outcomes of the analysis.

The analysis process simulates a flow from the 'real' data collected towards the 'abstract' conclusions and recommendations. Firstly, the process originates with the transcribed data and identifying codes from the data. The codes focus on the contents which are identifiable commentaries commonly occurring across a spectrum of respondents' feedback.

Secondly, the codes were sorted into categories which assisted with the creation of the final themes. Figure 11 (Gibson and Brown, 2009) below presents the suggested flow towards the themes and finally, theoretical input enhancing the academic body of knowledge.
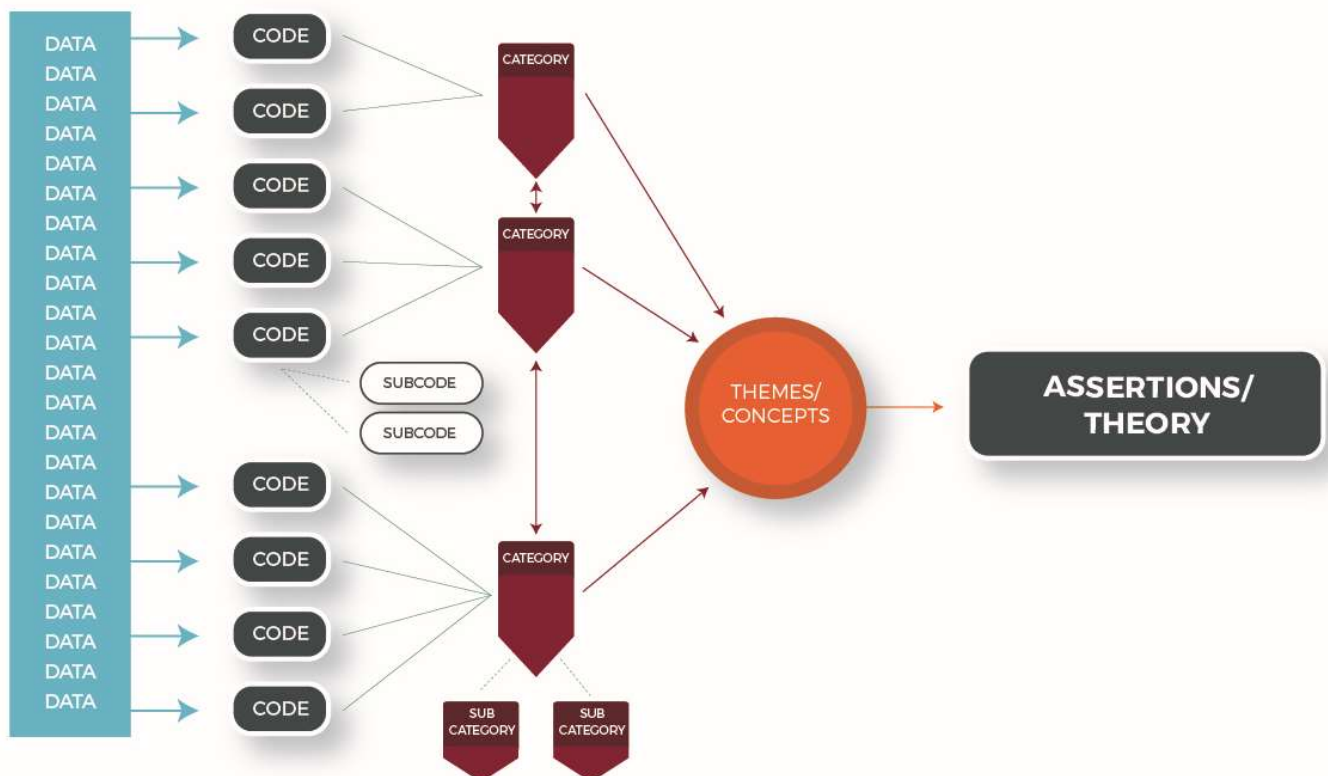
Figure 11: Codes-to-theory model (Gibson and Brown 2009)

The codes as discussed in Section 4.8.1.1.2 focussed on examining commonality, differences and relationships in the data. ATLAS.ti computer assisted qualitative data analysis software (QACDAS) was used to assist in the analysis and general organisation of the data. The ability to view certain coded sections at a glance in relation to cases and the role-player strata, was invaluable.

It is further noted that in instances where only one strata of role-player feedback was mentioned in any of the codes, it was still treated as important. For example only client commentary was coded for a specific code. This is due to the fact that other role-players might be the cause or have an impact on the performance of the entire project team. Therefore, an issue which was found to be code worthy, impacted on all the role-players in some way and influenced the performance of the team (positively or negatively). Only the "strongest" or most direct comments were included in the sections below, to insure that the noted evidential quotes are focussed and easily comprehensible for the reader.

In line with the initial main research question (Section 1.2), the focused coding lead to a wide variety of codes which either related to a motivational issue or a clear environmental factor which influences the performance of the role-players.

5.1.1 Logic behind the sequence of analysis related to the identified sample strata

The sequence of data analysis attempted to be consistent with the use of codes for each section being analysed. To enable this, the data analysis commenced with the first five interviews being analysed to ensure that the correct codes are in use and that the definitions are clear and recorded.

Subsequently, the analysis moved to completing each group or strata noted as part of the sample (Clients, Contractors and Consultants). Therefore, the analysis began with each of the clients represented in each case. Thereafter, analysis was completed for the contractors represented in each case, and finally the consultants. Where noteworthy commentary came from a specific discipline (for example the PMs) in the consultant strata, it was noted and indicated in the analysis presentation as a particular point of interest.

For this research, four cases were identified due to the mentioned variety, opportunity for learning, access, ability to spend time with participants and the experience of the

participants. All relevant details of the cases are explained and discussed in Section 5.2 which gives an overview of each case's context. The cases were analysed and presented chronologically with the first interviewed project participants making up Case A and the last interviewed project participants, making up Case D.

5.2 Case study context

The full description and importance of context in case studies is noted in Section 4.5.3. Due the importance of the context, each of the case specific sections below is exploring the case specific information to highlight and clarify the context within which each of the cases and the role-player participants exist. The many case specific issues and influences which could impact the feedback from the various cases, added to the data which were analysed.

5.2.1 Case study context – Case A

The summary Table 8 indicates the demographic information relative to the team members:

Table 8: Demographic information - Case A

Participant	Role	Years Experience	Gender	Race	Age	Qualification	Professionally Registered
P1	Quantity Surveyor	30-40	Male	Coloured	40-50	BSc	Yes
P2	Electrical Engineer	5-10	Male	White	25-30	B-Tech	No
P3a	Architect	10-20	Male	White	30-40	BSc	Yes
P3b	Architect	40+	Male	White	60-70	PhD	Yes
P4	Construction Manager	5-10	Male	White	25-30	B-Tech	No
P5	Client Representative	30-40	Male	White	50-60	BSc	Yes
P13	Structural Engineer	30-40	Male	White	50-60	BSc	Yes
P24	Project Manager	20-30	Male	White	30-40	BSc	Yes

Number of Participants: 8

Value: R60m

Building Type: Multi use offices, class rooms, communal user spaces, laboratories and ablutions.

Contract Type: Contractor/Client – JBCC, Consultant/Client – Specific service level agreement set up by client organisation

Time duration for project: 12 Months

Time lapse to date: 6 Months

Team Diversity: The team is not diverse in the sense of ethnicity or race, but does combine a range of age groups (25-60+ years) and the entrenched diverse skills base combined in most construction projects (architects, quantity surveyor, engineers, construction manager, PM and client representative). The entire team of participants was male.

Teams' industry experience: With the diversity in age, comes a range of experience levels. The least experienced had 5 years industry experience, and the most experienced had over 40 years' experience in the industry.

Project Management: The client appointed a dedicated PM to lead the team through the entire project life-cycle (concept/viability, design, tender, construct and handover/closeout.). Many comments and actions noted by the respondents also noted the input from the client representative in many facets of the project (motivation, recognition, chairing meetings, etc.).

Procurement: The client envisaged a method of procurement, which when measured against the general South African norm, is progressive. The idea was to design up to a stage where at least the concept and layouts were finalised. Thereafter, a request for tender was put to the open market, but with a document which had many unknowns and finalisation of the detail happened with the assistance of the appointed contractor. The architect was appointed first through a competitive tender with emphasis on an overall concept based on a scope of needs provided by the client. Thereafter, requests for proposals were made to selected consultants to procure the various other disciplines (engineers, quantity surveyor and PM). Finally the contractor was appointed, as explained.

Client: The client is a large institution with general but constant infrastructure development and construction requirements.

Client representative: The client representative is an industry professional with over 30 years' experience as a Quantity Surveyor.

Perception of Performance: The general comments from the team and client representative was that the project and team is performing well. The client representative, although had a sense of apprehension about the future and if positive momentum could be maintained.

General comments: The respondents noted repeatedly the positive effect of software applications which the PM had introduced with far reaching positive outcomes.

5.2.2 Case study context – Case B

Table 9 summarises the participant demographics for Case B:

Table 9: Demographic information - Case B

Participant	Role	Years Experience	Gender	Race	Age	Qualification	Professionally Registered
P6	Construction Manager	10-20	Male	White	30-40	B-Tech	No
P7	Project Manager	20-30	Male	White	40-50	BSc	Yes
P8	Architect	10-20	Male	White	30-40	MSc	Yes
P9	Electrical Engineer	20-30	Male	White	40-50	B-Tech	Yes
P10	Architect	10-20	Male	White	30-40	MSc	Yes
P11	Quantity Surveyor	10-20	Male	White	30-40	BSc	No
P12	Client Representative	20-30	Male	White	40-50	B-Tech	Yes

Number of Participants: 7

Value: R50m

Building Type: Multi-use facility combining offices, communal spaces, presentation hall, laboratories and ablutions.

Contract Type: Contractor/Client – JBCC, Consultant/Client – Specific service level agreement set up by client organisation

Time duration for project: 12 Months

Time lapse to date: 5 Months

Team Diversity: Similar to Case A, the team is not race diverse, but again combines a range of age groups (30-50 years) and diverse skills base. Gender wise, the respondents were all male.

Team Experience: Age diversity again brought with it various experience levels, ranging from least experienced with 10 years, to the most experienced with 30 years in the industry.

Project Management: A similar responsibility requirement as in Case A was requested from the appointed PM. In this case, most of the commentary related to absolute disdain for the appointed PM. Seemingly elevating this problem was the fact that the client representative was not as strong and supportive as in Case A.

Procurement: The same procurement method was used as in Case A. Although in this case, the commentary was very negative on the outcomes of the process and on-going "value-engineering" as the participants referred to the on-going redesign which occurred to overcome a large budgetary shortfall.

Client Type: Large Institution

Client representative: The client representative is an experienced architectural technologist with 10 years professional and additionally, 15 years client representative experience.

Perception of Performance: In Case B, general comments related to performance were negative and the general experience from most of the role-players was also negative.

5.2.3 Case study context – Case C

The role-player demographics for Case C are summarised in Table 10:

Table 10: Demographic information - Case C

Participant	Role	Years Experience	Gender	Race	Age	Qualification	Professionally Registered
P14	Quantity Surveyor	40+	Male	White	60+	BSc	Yes
P15	Client Representative	20-30	Male	White	40-50	MSc	Yes
P16	Project Manager/Architect	10-20	Female	White	40-50	MSc	Yes
P17	Structural Engineer	5-10	Male	White	20-30	B-Tech	No
P18	Construction Manager	10-20	Male	White	30-40	BSc	No
P19	Electrical Engineer	30-40	Male	White	50-60	B-Tech	No

Number of participants: 6

Value: R25m

Building Type: Industry specific research and development laboratory

Contract Type: Contractor/Client – JBCC, Consultant/Client – Specific service level agreement set up by client organisation

Time duration for project: 8 Months

Time lapse to date: Project was completed

Team Diversity: Of all the cases, this could be the most diverse. The architect was a female, and she also fulfilled the project management duties. Both the age groups and experience levels had a wide variance. With the youngest person being a graduate

with just over 5 years' experience and the oldest a 72 year old gentleman with many years of experience (40+ years). The team although again was racially all white.

Team Experience: As noted relative to diversity, the team had the entire spectrum of industry experience from start-ups, through mid-career operators to highly experienced role-players.

Project Management: As mentioned, the female architect fulfilled the role of principle agent as well as the architectural duties. Comments on her success and performance were divergent.

Procurement: A traditional method of procurement was followed. The entire consultant team was procured via a call for project proposals. The consultant procurement was, though limited to only a preferred group, unlike an open tender. The design was completed with relevant estimates from the appointed consultants. Thereafter a full comprehensive tender document was compiled and put out to the open market.

Client Type: Large Institution

Client representative: The client representative has a broad industry background with a construction management degree and many years of client representative experience in governmental, semi-private and private institutions. The commentary obtained from the case participants indicated a high regard of his role and inputs.

Perception of Performance: One or two of the role-players had minor negative comments related to performance, but the general comment on performance was positive.

General comments: This role-player group enjoyed the traditional manner in which the contract was conducted with age-old held, norms and standards.

5.2.4 Case study context – Case D

Table 11 reflects the role-player demographics for Case D as indicated below:

Table 11: Demographic information - Case D

Participant	Role	Years Experience	Gender	Race	Age	Qualification	Professionally Registered
P20	Construction Manager	10-20	Male	White	30-40	B-Tech	No
P21	Architect	20-30	Male	White	40-50	MSc	Yes
P22	Project Manager	30-40	Male	White	60+	M-Tech	Yes
P23	Client Representative	20-30	Male	White	50-60	BSc	Yes
P25	Quantity Surveyor	40+	Male	White	60+	BSc	Yes

Number of Participants: 5

Value: R 700 million (spread across several phases of implementation)

Building Type: Health Care – clinics and hospital wards

Contract Type: Contractor/Client – JBCC; Consultant/Client – Specific service level agreement set up by the client organisation

Time duration for project: 50 Months

Time lapse to date: 20 Months with several of the phases being already completed.

Team Diversity: As in all the other cases, the team was not well represented from an ethnic, cultural or racial perspective. All the participants were male and aged between 30-60+ years.

Team Experience: In this team, the participants are a well experienced role-player group. It seemed that all involved were seasoned industry operators.

Project Management: Similar to Case A and B, the PM was appointed to only fulfil the regulated duties. Most of the respondents note a positive view of the PM, which in this case was an engineer who has been operating as a PM for many years.

Procurement: The consultant group was procured as one entity by the client as a consortium. Within this consortium, there were roughly two different consultancy firms appointed for each of the design and costing disciplines. Therefore a large group of consultants where presented on this project. This appointment flowed from a proposal requested from the client. Thereafter the consultant group would design and plan each of the many phases and let construction tenders out to the open market for each of these phases.

Client Type: Industrial Development Corporation

Client representative: It seems to be a common thread, but once again the client representative was a highly skilled, respected and experienced individual. Commentary from the team reflected positively on his role.

Perception of Performance: Generally the commentary reflected a positive view on performance, but also strong relations to the on-going involvement of the role-players over an extended period of time.

5.2.5 Summary of Case study context

In summary, the following could be noted in relation to the entire group of participants:

- Roles: The participant group consisted of 26 participants made up of 18 Consultants, 4 Contractors and 4 Clients;

- Gender: There was only one Female participant;

- Race: The entire population was white, barring one coloured participant;

- Professional Registration: 18 of the participants were professionally registered;

- Qualification types: There was a range, but with a minimum level of a B-Tech degree and highest level of a PhD graduate;

- Experience levels: The experience levels ranged between fairly inexperienced (5-10 years) up to over 40 years' experience which would be seen as 'very well experienced' in the industry;

- Value: In the context of the South African construction industry, the project values are substantial; and,

- Contract type: All four cases made use of the JBCC agreement between the client and contractor.

5.3 RESULTS AND ANALYSIS

This section will, in line with Marshall & Rossman (2010:207), aim to "search for general statements about relationships and underlying themes" in the data.

The full description of each aspect of the analysis is noted in Section 4.8 and in the introduction to this chapter, with preluding commentary given at the start of the

sections Codes (Section 5.4), Categories (Section 5.6) and Themes (Section 5.7). This commentary is done in order to ensure the understanding and relevance of each section.

5.3.1 Participant classification

In the following section, which elaborates on the identified codes, a classification system was used to indicate each participant's inputs.

The participants were classified, as explained below, for ease of reference during the coding and the analysis. The example and clarification of the classification would appear in the following section (Section 5.3 Analysis and Results – Codes) after each quote from a participant.

Example: *P9:26 Case B*

P9: This is an indication of the participant number. In the example it was participant number nine which was quoted.

26: This section in the classification shows the 26th quote for this participant as identified in ATLAS.ti the QACDAS software used to assist with the analysis of the transcribed interviews.

Case B: This clarifies the identification of the case which the participant formed part of.

5.3.2 Random and fictitious names used in the presentation of the transcribed interviews

It could be prudent to note that all names expressed in the following section were randomly changed to fictitious names to ensure the anonymity of all companies and individuals involved.

5.4 CODES

The following sections (Sections 5.4.1-5.4.3) present the codes which were identified through the analysis of the transcribed word data under each of the headings, as previously stated, under which the investigative questions were grouped. As identified in section 1.3, the headings were identified as:

Questionnaire Headings or Themes:

Heading 1:
Teams – Dynamics, Organisational Culture and Diversity:
Heading 2:
Leadership/Management – Influence and Practice
Heading 3:
Performance – Drivers, Motivators and Barriers

The sections under each heading, note the applicable questions probing the relevant area of interest and thereafter the codes with descriptions follow, combined with pertinent quotes indicating the logic behind the identified codes and the code descriptions.

When reflecting on the description given and Figure 11: Codes-to-theory model (Gibson and Brown 2009), Chenail (2008) further states that coding the data is usually the first step in analysing the transcribed data. During this coding exercise, the researcher did aim to make sense of the data; and coding is seen "to describe a general feature of data" and it applies "to a range of data examples" (Gibson and Brown, 2009). As noted previously, the code title and description then contribute to the thematic analysis when used to examine commonality, differences and relationships all the way through the data (Gibson and Brown, 2009).

5.4.1 Teams – Dynamics, Organisational Culture and Diversity

5.4.1.1 Analysis and Results for Question 1

Question 1 was set up to probe the team aspects of the project environment. The research questions are presented as follows:

Question 1:

Question 1a: What are the team dynamics which influence project role-players' performance?

Question 1b: What environmental factors are causing dysfunction within the project teams?

These questions align with the literature reviewed under Section 2.3.

In the following sections, the various codes and sub-codes, which were assigned to the transcribed data with relevance to the questions are identified and explained. A summary of these assigned codes is given at the end of the analysis.

5.4.1.1.1 Code 1: It takes time to trust

This code encapsulates the idea that trust in others is gained over a period of time, and is not instantaneous. The role-players expressed the view that there was a time lapse or period of time that went by, before the role-players began to trust each other. Pertinent quotes for this code are stated as follows:

Consultants:

"And sometimes normally with the architects, usually because I am in the game long enough […] I've build up this trust with the architects over the years, I've worked with them on a couple of projects, they ask and you say it is like that and they do not even question it..." P9:26 Case B

"I think he began to build trust in the team, and we told him the stuff will be done, and he could see it was happening. I think it is about trust, trust, trust." P13:48 Case A

"You know it's no problem working with builders. Some are easier than others…you soon develop a relationship and you know where you stand with them." P14:4 Case C

"You interact and you get to know each other. And you become comfortable with each other and you deal with whatever needs to be dealt with each day." *P16:25 Case C*

Contractors:

"If you look at building relationships. It depends on the person… you learn after a while how to work with that person. For example, the electrical engineer, if you met him earlier, it could have made all those [issues] easier to resolve." *P6:46 Case B*

Clients:

"Over time, that is where things work through relationships and built up partnerships. Client with Consultants, and you have trust and you know you getting the real deal." *P5:51 Case A*

As expressed in the quotations, the respondents reveal that over a period of time, the role-players' trust of one another developed. This trust was gained through the expected or envisaged performance of the role-players involved; and it forms the basis for relationships when going forward. These relationships could unlock certain aspects, such as communication and the subsequent information flow or problem resolution. All these aspects assist in improving the role-players' performance.

5.4.1.1.2 Code 2: Technical competence/ability

Technical competence or ability were mentioned as specific requirements in relation to what the team requires from the various role-players. Specific mention was made of the reliance of role-players on the technical competence and the ability of the consultants. The responses for the code noted the following:

Consultants:

"We've had some hiccups with the engineers; the architects do not see the full picture; the little bit we've worked with them, you can say not on the same page. With the project manager not always the most experienced person I've worked with. Not understanding the technologies of the industry." *P9:21 Case B*

Contractors:

"Just my opinion, but she did not know or was totally at ease with the details and finishes she required. You would ask for information and it would not be forthcoming" P18:8 Case C

Clients:

"They did not know anything about it, they were too scared.   That is the hindrance. It was out of their comfort zone; he does not know how to design it." P12:30 Case B

"And many times I am left thinking that the Principle Agent, Architect or Quantity Surveyor, did not think this point through properly."15:46 Case C

"Even our designs and that, we've got people here, but they can give you a design that is not compliant with [the] regulations. And you've built the building, but you can't get an occupational certificate." P5:57 Case A

5.4.1.1.2.1 Code 2a: Technical ability – Specific critiques of Architects

Specific critiques were levelled at the competence and abilities of the Architectural profession. Commentary on the architects was encapsulated in a sub-code. Critique related to the Architect in this sub-code, of whom a slight lack of comprehension was noted of the general construction site issues and the practical solutions. This seems to create some apprehension between the role-players. Specific quotations for this sub-code noted:

Consultants:

"You know they can get a bit airy-fairy, our Architect friends. One must make allowances for that as well. They are artistic rather than business related." P14:28 Case C

"The architects seem to lose themselves a bit in the situation and [they] want to be too diplomatic towards everyone […] they are on a total different planet than the rest of us." P17:10 Cases C

"They don't always understand. You can go and ask in town; I am known amongst the architects as someone who cannot understand how they think and cannot see how they cannot see the practical application of something

[…] They should maybe one day come and pick up a trowel and come and lay a few bricks to see how it works." P19:17 Case C

"The building was designed to a certain level and given a certain budget, based on a square meterage; and some of the areas were increased but not the budget, but you work with what you've got, there is an understanding, sometimes the architects do not understand that," P 9:10 Case B

Clients:

"And then one of the common things, I don't know if you picked it up in your time, there still seems to be a lack of understanding with Architects. In my experience, the Architect is the leader of the design team; and he doesn't always get it. He must be pro-active and not reactive. They wait for the problems to come. They wait for the Contractor to ask and the different levels of services and ceilings, and then they are done. Surely, you [should] manage that right from the outset?" P5:26 Case A

5.4.1.1.3 Code 3: Transparency

In relation to a business interaction or concerns, transparency means and can be defined as (BusinessDictionary, 2016):

- "Lack of hidden agendas and conditions, accompanied by the availability of the full information required for collaboration, co-operation, and collective decision-making;

- The minimum degree of disclosure to which agreements, dealings, practices, and transactions are open to all for verification; or an

- Essential condition for a free and open exchange, whereby the rules and reasons behind regulatory measures are fair and clear to all the participants."

Highlighted from the above definition would be words such as: co-operation, collaboration, disclosure, fair and clear. Many of these noted constructs mentioned as part of the definition were discussed by the participants. Due to the various issues noted, and to ensure full understanding and disclosure to the reader, the following were identified as key elements, which in this case would be sub-codes to the overall transparency code:

- Actions by the Consultant Team;

- Actions by the Consultant Team – Financial;

- Actions by the PM;

- Actions by the Contractor;

- Actions by the Contractor – Financial;

- Actions by the Client; and,

- Transactions.

5.4.1.1.3.1 Code 3a: Transparency – Actions by the Consultant Team

In this sub-code, the focus was mainly on actions taken by the consultants, which either indicate their transparency; or they give rise to doubt of the transparency. Quotes reflecting the role-player feedback noted:

Consultants:

> *"I don't think that everybody's got your back, but its more the case of people looking after themselves, and making sure that they are not to blame.[…] I do get on well with the guys, but there is hidden agendas also hey. Guys just do enough so that they are not the cause of things." P11:42 Case B*

> *"You've got certain personal standards, you've got ethical and work standards. You don't reduce them for anybody. You don't hide mistakes. You tell them there is something here; and I had to do it many times." P14:21 Case C*

> *"Their openness. They were open with everyone. Every time we got around the table and there was a problem, then we would talk about it and resolve it." P19:32 Case C*

Contractor:

> *On many projects, it almost feels as if the Project Manager and the design team are almost on their own […] Yes, it feels as if they first have their own meeting and will then come and talk to you […] With some projects, it feels as if the contractor is on his own and you are fighting against everyone. You always have to prove your point." P20:78 Case D*

> *"Sometimes you just have to go-ahead and finish. There were many elements, which we had to decide on our own. Just to keep the process going. And then when it came to final completion, then it was not exactly what the Architect wanted. Then all of a sudden, we have to fix it; and then it becomes our fault."*
> *P18:8 Case C*

Client:

> *"I feel there are certain individuals. I do feel I've got absolutely no problems with; and then there are other guys who will try to keep quiet and hide things – especially if there are some issues. […] When I feel part of the team is when I get involved with certain things. Don't try and dance around me, rather address me and say, Gary, we've made a bugger-up; and this is how we are going to rectify it, play open cards."P12:83 Case B*

> *"It (consultant service level agreements) are very loose; it's not sort of advisable for you to whip them in any way. Not that you want to. You still need that." P5:64 Case A*

In many of the commentaries, a lack of trust is a clear outcome of others being perceived as not being transparent in their actions. This leads to damaged or even severed relations, who have definite communication and team-cohesion implications. In the end, the lack of transparency reinforces age-old operation silos between the three role-player groups.

5.4.1.1.3.2 Code 3b: Transparency – Actions by Consultants – Finances

Money seems to strike a sensitive nerve on projects. This sub-code is related to the actions or the motives of the consultants in direct relation to project finances; and the manner in which this is dealt with. Specific quotes relate to the following:

Consultants:

> *"I don't know how their fee structure works, but I know the Architects complain that the PM has fees on work that they did. I mean fees are always a touchy subject … you don't ask the guy next door what he earns." P11:25 Case B*

Clients:

> *"Now, it seems that it is all about profit. It is almost a money-chasing agenda. It almost comes down to why should I give the client a cheaper and more effective product? No, that is how I can make money… It is as if the industry has lost its professional status. Everyone is just focused on the money."* P23:7 Case D

> *"I said how you treat that, they must take it out and they must re-invoice. Then Clint Croft through a massive wobbly in terms of this. We had a meeting and we sort of came to a compromise in terms of the value they can base their fee on. […] That definitely has put a red flag on XYZ Company, which was the first time they worked with us."* P12:36 Case B

5.4.1.1.3.3 Code 3c: Transparency – Actions by PMs

In this sub-code, the role-players mention actions taken by the PM, which alluded in most cases to the fact that the actions were seen to be not transparent. The actions and possible effects are reflected on in the quotes. Clear statements from the role-players were:

Consultants:

> *"… it was at the tender stage, and I noted to the client that we might be over budget and the reason being that the building is bigger, etc. Then Gabby came on board and emailed me back saying: "Fred, don't cover your ass…" […] and now I cannot reply to her, I just have to manage the situation. P7:25 Case B*

> *"I think Billy then phoned the client. The client then indicated that the report should have been in long ago and it has no use now. But they still wanted to do it. So, now it seemingly becomes a case that they (Project Managers) want to cover themselves."* P8:24 Case B

> *"And we ended up having a huge box-up with Danny Duff. And I said to him, it is bullshit, this is your role. He said it felt like I was accusing him of not doing his job. It got nasty. It was difficult and I said I am out of here. And then he came and shook my hand, but he had real nasty comments hey. […] and*

I always feel there is the tail that needs to be nailed on the donkey. Just don't know when or who…" P11:71/72 Case B

Contractor:

> *"In my opinion, we did not have the best Principal Agent. I view someone who can be impartial as a good PA. You have to be able to distance yourself in this role towards the other agents involved. […] And the biggest problem was she could not distance herself from the client." 18:6 Case C*

> *"Kenny and QRT Company were practical guys. If there were problems, you get people who take chances, but if you could show that you weren't a chancer, they said okay, let's make a plan. That was positive […] in the bigger picture they were fair." P20:69 Case D*

> *"You know as contractors, we always say that we are the guys that if the hammer comes up…it is always us. Not the consultants." P4:97 Case A*

Clients:

> *"…when there were issues it was immediately brought to my attention. They (the PM's) were not trying to listen, and say we are a team and let's try and sort it out; he did that, but if there where issues, he raised a concern, in cases when the other guy really become sticky." P12:59 Case B*

As seen above, Consultants were particularly scathing in their responses. This could be due to the fact that they know what is expected in the PM role; and they have intricate knowledge and possibly very high expectations.

Again the perceived actions can be seen to breed distrust in general related to ethics or ability/competence, which is influenced by the manner in which the PM communicates in these situations.

One could also reflect on the fact that the role-players' require a lot from the PM; and, in a sense, he is dependent on their transparent inputs and communication, in order to function optimally.

5.4.1.1.3.4 Code 3d: Transparency – Actions by Contractors

General commentary on the transparency of the contractors related to very general views; and a sense of predisposition could be felt. This code is indicative of the on-

going adversarial nature of conduct in the industry, with a special focus on common beliefs among contractors. It can be seen that due to the industry's beliefs, the contractors are also set to "play their role"; and they are aggressive and possibly counterproductive. Typical quotes for this code included the following:

Consultants:

> *"You are working as a team with the contractor, not fighting against them and not trying to see where he can nail an extension of time; he is not trying to nail you where there are penalties that he can get himself extra money and blame the consultants. He must work with us as a team that builds trust." P9:23 Case B*

> *"I sent him (the contractor) a mail last week. And he said, "oh I asked for it on a Monday and you send it on a Thursday, so there is another four days delay"…you don't know where that thing would go to. You know what I mean? I don't want to get involved in that type of Jekyll and Hyde type of things." P11:72 Case B*

Contractors:

> *In our industry, you have to protect yourself. […] At the moment if it is not on the drawings, then I can't work. It has come to the point, I don't know about other contractors, where you actually don't want to give design input, because down the line they turn around and say, 'but you said we should do this'? Even the contractors know to take a back seat and ask 'what do you want me to do?'" P20:29 Case D*

> *'When you are in meetings, and there is more than one person involved, in most cases you are seen as a villain. […] I often use the phrase "I am just a stupid builder', I have to work off a plan […] And if the information is not there then the second step. Speak to me how we are going to resolve this or things are going to get ugly." P18:18 Case C*

Clients:

> *"I can't really put my finger on it, but back to the contractor; they also just sit and wait for information." P15:26 Case C*

Again, the perceived lack of transparent actions creates distrust on all sides. This distrust is counterproductive; and from the contractor's perspective, it is almost on the fringe of sabotage, which is fuelled by self-preservation and having a feeling that everyone is against them. It can also be the start of a very apathetic stance towards the project and its outcomes – if the contractor does not feel part of the processes and the project inputs.

5.4.1.1.3.5 Code 3e: Transparency – Actions by Contractors - Finances

Comments made of the actions by contractors and their inputs on financial or budgetary issues during the project were captured under this sub-code. A range of specific comments came from the Quantity Surveyors involved. This is mainly due to the interaction related to project finances with the contractors during a project. These were presented separately due the direct applicability and possible interest for the reader.

Consultants:

What I don't like about contractors is that they have a tendency to withhold financial information which they need, and then at the meeting they make a big thing about it. Where they could have requested the info two or three days before. There is always a small power struggle there." P17:16 Case C

"… many times when it comes to costs and contractors, then you might find they are only in it for the money. The moment you find someone who is only doing it for the money, then you have a problem. They aren't interested to do the job properly." P19:11Case C

"Some of the things which are coming up now, the QS noted that they (the contractor) should have highlighted to us earlier…" P7:67 Case B

Comments from client-appointed QSs from the cases:

"Obviously if your contractor, in construction phase, doesn't play the game, it leads to difficulties, extra work and adds undue pressure." P25:15 Case D

"I think it is strategic from their side. I think they're giving you quotes just in time, […] a way out so that you are forced to say "it is not approved", value engineer it, but the information is now late. And I mean, the way this project has been structured from the Contractor, is that their rates are very very low.

Lower than our estimate. However, the Preliminaries & General is three times our estimate."P11:11Case B

5.4.1.1.3.6 Code 3f: Transparency – Actions by Client

Again, the transparent actions were noted with specific commentary on actions by the clients. Prominent quotes for the code included the following:

Consultants:

> *"So if you get a project for KLM Company, you are going to get paid. You are going to get your letter of appointment. Everything that is supposed to happen will happen. And they will expect a high standard from you, which you will deliver." P16:15 Case C*

> *"You know they are honest guys. You have to do a good job for them, but they are not trying to do you in at each and every chance. So have a very open relationship with them." P13:24 Case A*

> *"Although not directly said. It was quite nice. Everyone is on equal par. Just like we felt we were on equal par with the Client. We could talk to him about anything." P2:45 Case A*

Contractors:

> *"I turned it around, and said "contractually you (as the client) are obliged to give a safe environment. […] When you give me a safe working environment, I will return". So he said, "No let's not take it that way". Like I say, something I find very unfair is my company is taking all the knocks alone." P4:28 Case A*

> *"For example, if a sub-contractor stuffs up, according to the JBCC, I can give him notice of non-performance; and he has five days to sort it out. Otherwise, I can bring in another contractor. Here, they have three weeks to sort that same scenario out. You know how long three weeks are on a project! […] And that is not taken into account by the client. He just says you have to manage your sub-contractor." P20:14 Case D*

> *"… interestingly, the client said that the contractor should not be held back by a lack of info. […] That was said, but when a situation arose around*

information, that person is not handled in the same manner. There was a disconnect. "P18:50 Case C

Clients:

> *"We've been fair and created something that makes the consultants happier and they perform better. They pay both within time and without fail. And that gives a lot more trust…." P5:113 Case A*

Some commentary reflected on the relationship with the client and a clear understanding that they are the providers of the work. This relationship is affected by the actions by the client, and as previously stated, the lack of transparent actions leading to distrust and enforcing operation in silos.

5.4.1.1.3.7 Code 3g: Transparency – Transactions

Transactions were noted as a sub-code of transparency; because of the seemingly give-and-take position, which many role-players take in the daily workings and interaction on a project. The transaction sub-codes comments noted the following:

Consultants:

> *"Be compassionate towards the architect and help him get there as well; don't just sit back and point fingers. You will also be as frustrated. If you see the mistake, speak to the oke. Hey you are a structural engineer you remembered about this, broadcasting e-mails, don't do it, don't send it to the PM, don't send it to the client and everybody else, just speak to the guy. If there is a hassle with the QS or whoever, speak to him, is he happy to an extent, then it builds up that confidence, don't burn those okes." P9:15 Case B*

> *"… if the contractor makes a mistake, let's say the concrete mix was wrong. That is a problem; and I as an engineer I must help him. On another day, he again could help me. There might be a problem on the steel and he sees it. That type of thing of we help each other." P13:35 Case A*

Contractors:

> *"I personally see myself as a friendly person who is approachable; but if I don't get the same back, then it quickly becomes a situation where I am demotivated." P18:2 Case C*

> *"They were open, direct and fair. Most of the time they did not try and catch me out in meetings and make me look bad […] They would remind me by email and would even phone. […] And I did the same for them. […] so they had the same attitude and it felt like we worked together." P20:75/76 Case D*

> *"…he will phone me and say give me two days, and although it is 99% to my deprivation, but I do it, on the hope that on the flipside, when I am in a situation I need this, and I need it now, that he does the same." P4:42 Case A*

Clients:

> *"…being part of that whole thing and when the team as one are still all in agreement in working hard together, that does motivate you. It puts you into a good position in terms of the project. You've got that interaction and willingness to drive and change and solve design issues, but in a nice way…'" P12:3 Case B*

The commentary reflects on the transactions that take place and the expectation that if one role-player assists another, that there would be a similar positive action or assistance in the future. Therefore, the role-players indicate a willingness to assist in the hope that when needed, others will do the same. If these transactions are positive and successful; one could note logical links with trust and team cohesion. The feedback also alludes to the role-players' need to keep the project going, or to keeping the positive momentum.

5.4.1.1.4 Code 4: Cohesive Actions

Some role-players note the short- and long-term value of team cohesion; and they indicate that they take action, in order to make the team cohesive. Specific quotes noting the action and process were:

Consultants:

"… an approach that I find really works well is that you meet with the Contractor and you go through the plans and ask "what do you mean with this" and, "have you done this before". And you get so much feedback and it works so well. And from then, they feel like they are part of this here. If you can revise your drawings, according to what they recommend, they are getting input there. Although it is at a later level, and then your project often goes a lot smoother." P2:47 Case A

We always try to be the lesser. We have seen the guys try to be hard assed at the beginning, but if they see you are not against them, they seem to relax. We have seen architects that can be really difficult. And then we say 'listen here, we are here as a team, this is what we want to do, we have this goal to achieve'." P17:22 Case C

"Even if things are not going well, you support each other. Not to the point of telling lies, but bringing to people's notice: you can't do that, because it is going to cost xyz. I will be in trouble; because the budget will be blown …there are ways of handling it." P14:18 Case C

"When we had the negotiations with GHI Company, we had a separate meeting with them for negotiating around certain things to cut and change here and there. We sat with them before they were given the contract, so we could still streamline. That worked very well; I was happy; and we did work with their sub-contractors beforehand." P9:40 Case B

Contractors:

"The professional team plays a big role in this. The manner in which they treat you as a professional is important. A core aspect for many people is a nice working environment. It goes a long way for me to be comfortable with all the role-players." P18:1Case C

This code commentary also indicates that these specific actions build trust and links, with the focus on many future transactions that would be taking place during the course of the project.

There is also a sense of urgency felt in the way that the action is specific, purposive and not random. The actions are taken for a reason; and that is to make the other parties feel that they are part of the team. In a sense, the role-players are taking ownership of these relationships; and they want to make them work. Understanding that if the relationship works, the outcomes would be positive for both the parties; and the project as a whole would benefit.

5.4.1.1.5 Code 5: Part of a Team

This code reflected on the feedback, which indicated pure motivation that related to being part of a team. The belonging in itself was a strong motivator, combined with the fact that in some cases, the team was operating well. Being part of the team bestows a responsibility on the individual role-players to perform well. The responses framing this code noted the following:

Consultant:

> *"… but it is important for people to feel like they are part of the team. That in itself is motivation." P16:49 Case C*

> *"I think the cooperation of everyone gave me that boost experience wise, that made it a success. There was nothing we could not handle or resolve." P19:38 Case C*

Contractors:

> *"Look, I think it is a lot about camaraderie. I think everyone should be on the same wavelength and should be trying to reach the same goal." P6:34 Case B*

Clients:

> *"…so when you are busy with the initial design stages and stuff like that and you have everybody that is on board and try to achieve the same goal." P 12:2 Case B*

The interdependence of the team seemingly strengthens the individuals' drive towards performance, in order to ensure that they are not the weak link, or seen to be underperforming and letting the team down.

5.4.1.1.6 Code 6: Continuity of team members

When team members leave or enter the project environment, it seems to have an influence on the project. The consultants were very much aware of this impact; and they noted a change in performance when the team membership changed. Specific quotations for this code included the following:

Consultants:

> *"We got ourselves into a situation, where the team had challenges thrown at them. The lead Architect resigned from the practice within a month from project being on the ground. There was a lack of continuity. I had a major car accident. So it is difficult to know who it could have panned out. The PM himself is only coming to meetings every 2nd week." P1:51 Case A*

> *"I think what happened with him is that he had a lady working for him; and then she left, so he decided to do it himself. And he is on his own. So all of a sudden, he had all this business to run by himself." P16:37 Case C*

> *"Related to the QS, what was also bad, they took the original guy on the project off, after they noted that he had missed some items. So they had a new guy for a while, and then he left as well. Now, they have another guy, who will also be remeasuring; but when he is done; there were still will be a lot of things that had not been accounted for. So it just created a massive delay." P8:42 Case B*

Contractors:

> *"There was a lot happening behind the scenes, before we started with the value engineering. […] And it was very difficult. But I was not involved with that whole setup. Bruce Big was part of that initial project. P6:1 Case B*

> *"A lot hangs on the people involved. Especially if you have worked with them before on projects. It plays a big role." P18:26 Case C*

> *"If it is generally the guys I work with; I know what I can do, in terms of timelines and that. It means that if it takes three months, I can actually be able to do it in a month, if I am working with the guys that I know." P4:17 Case A*

Clients:

> *"…we had issues with that, there is no continuity, so you will have a structural guy and you get another and another structural guy. He's got the qualification,*

but he does not have the background knowledge in terms of the design philosophy, etc. It is like somebody is writing a book, you take it over and finish it off; and your thought patterns are totally different from the previous guy. You are going to read it, but you are not going to end up with the same entity."
P12:146 Case B

All the commentary above noted, a negative impact related to the team role-players and their non-continuous involvement. In some of the comments, a sense of apathy is also picked up, which indicates that the problems created by the team members entering and leaving almost gives the ones that are left behind a reason or scapegoat; if performance in the future is not up to standard; or the project goals are not met.

Although some of the commentary related to team members' non-continuity and its influence on performance is negative, for some respondents it seemed to be acceptable or "okay" if team membership changed. These cases noted the quest for sustained good performance of the team and personality clashes as acceptable situations, when the teams could be changed.

Consultants:

"… we had a client saying, I don't want to speak to Nicky and Elton. And the guy was happy with me, so that can happen as well. You are just not gelling. It is important that you are aware of it, and that you can change people."
P25:29 Case D

"I came back and chatted to Abbott Angle, and said I don't want to be on the project if I am dealing with him. So eventually, we sorted things out; it is better now and we get on all right now. But it has always been a bit of a bad taste…" P11:71 Case B

"In theory, they had quite a bit of confidence in the team to take the current Client Representative off the project. I think they needed him elsewhere, somebody with his character." P21:25 Case D

"Look, they completed the building; and it was acceptable and the client was happy in the end. Only as a result of getting a new site agent and getting rid of the other one. […] But when they changed the previous site agent with this one, it turned the whole project around." P22:12 Case D

5.4.1.1.7 Code 7: Relationships

The participants' feedback in many ways, related to relationships and the importance of having good relationships on projects. So much emphasis was placed on this aspect, and its effects on the team performance and environment, that to unravel the code, the following sub-codes were created:

- General;

- Effects of a lack of relationship, or no relationship at all;

- Client relations;

- Socialising; and,

- Socialising weariness.

5.4.1.1.7.1 Code 7a: Relationships – General

The following feedback relates to relationships in general, and the value that role-players put on these relations. It also shows how these relationships assist with the achievement of project goals. Noticeable quotes which support this sub-code were:

Consultants:

> *"Yes, the whole team thing is one of my strengths; relationships with certain consultants. We argue, we resolve it and we look at it together and find a solution. I think that builds relationships." P8:32 Case B*

> *"Build up that relationship with your co-workers and respect. You are a team and you're working in an environment where you are working towards a common goal. […] improve your working relationship with the team. And support each other, when it is needed." P22:45/46 Case D*

> *"For me, every team that I am involved with, works very well together. So the personalities gel. You get to know each other, you work together."P16:24 Case C*

Contractors:

> *"And with the engineer again, we have a wonderful relationship. I can just phone Fred and tell him this is the problem. You can communicate with him and he is fair." P20:42 Case D*

"I believe, and I hope the others do too, that we have a good relationship; and when I phone the guys for inspections and so on, they are willing, although we all are on a tight schedule […] I even had a case where the engineer was willing to come and inspect on a Sunday." P6:24

"... it is also relationships and that. I take my hat off to Glen. He has been very good in terms of, I've been looking at different ways of speeding up the project, and luckily we've met prior to coming up; and he almost designed it around the way I wanted to do it. It is nice from Glen's side that he tries to see where he can assist as well; and that he tries to speed the job up as well. The commitment from him is definitely there." P4:72

The above mentioned feedback indicates the coexistence of relationships and the team cohesion. This connects to the understanding of the dependence on others to achieve the project goals.

The respondents also noted that commitment and performance breed these professional relations; and therefore, sustained commitment towards the project and what others need from a role-player assists with building and strengthening the professional relationships.

5.4.1.1.7.2 Code 7b: Relationships – Effects of a lack of, or no relationship at all

The participants had an understanding of what the effects were of having a lack of good relationships on a project; or what the deterioration of relationships can do on the achievement of the project goals. Quotes which relate to this sub-code noted:

Consultants:

"…I could have told the guys up front, without the involvement of the contractor. But it wasn't my place in the team to tell them listen here […] this thing is out of concrete and I think it is a bullshit idea.[…] Well you can say it, but no one will listen. But the contractor is the guy with the money, so if they say it… There is some of the stuff which I knew will happen, then I just wait quietly and just go on. So most of the changes did not surprise me." *P13:18* Case A

Contractors:

> *"It becomes difficult to get information from the consultants, even to have a day-to-day conversation due to the environment, which has gone sour. The relationship has been tainted. You don't want to converse or meet with these people. You feel you are not being considered anymore." P18:5 Case C*

> *"But that difficult architect, we had a meeting this Thursday; and I did not even want to go. Sadly, you can act as professionally as possible, if you are rubbing each other up the wrong way all the time, you will have conflict." P20:45 Case D*

The quotes note a breach or lack of trust, which then impacts on the relationships and subsequent communication. The outcome is reticent behaviour; where the role-players do not share any information; and they keep their thoughts to themselves.

5.4.1.1.7.3 Code 7c: Relationships – Client relations

From the feedback, the researcher was given a strong sense that some respondents have a clear aim to build or focus on the relationship with the client. Some of the feedback almost reflected an indoctrinated response. The responses for the code noted the following:

Consultants:

> *"…there is a great motivation principle within our organisation to give a client a good service and that it is meeting budgets and time deadlines" P1:35 Case A*

> *"If you've made a mistake, make sure your name is still good with the client" P9:36   Case B*

> *"A big driver is to satisfy and keep them happy […] It is a long-term project and we want to undertake the journey with him. At the end of the day, it is to keep the client happy." P 7:15 Case B*

> *"You want to make it work for the client, you sit with him and get to know his situation. There is a lot of pressure on them you know. You get that from talking to them." P8:17 Case B*

"Because we have that relationship with the (clients) maintenance guy, we must make sure the day you hand the building over to the client it can be maintained." P9:8 Case B

Contractors:

"Obviously everything relates to strengthening the relationship with the client…" P6:40 Case B

Clients:

"With consultants, I don't really have a problem. They usually have a positive attitude towards us as clients." P15:86 Case C

"So with the architects, I know Frank, we worked together many moons ago; I think we've got a good working relationship in a sense." P12:82 Case B

5.4.1.1.7.4 Code 7d: Relationships – Socialising

Socialising as a process of relationship-building was mentioned. The following quotes indicate how the respondents see socialising as one of the tools to initiate and also build relationships on projects.

Consultants:

"You know, there is nothing quite like sociability. If we had gathered there not for businesses, but as friends, with tea and biscuits, or a beer afterwards, it would have made all the difference. People are people and they like that interaction, re-action and stuff like that. You get to know people very well over a couple of beers. […] Let's talk about ourselves or the job. It's a start that you do have something in common." P14:38 Case C

"But if you have a team, like with QRP Site for example, the team really works well together and the people enjoy themselves; and they socialize together" P24:5 Case A

"Although it has been a pressured project from design and costs, there have also been a few intense meetings, there is always a lighter part inside, and I think it is also instigated by the Project Manager a lot.   If it is a serious session, he would always say let's go for drinks afterward; and we would have a beer together. We would forget about it; and chat about it. I mean I got to know the

client representative better; and we had lot in common; we've read the same books, philosophy and things like that. We've had serious debates over those things. You build a much better relationship." P2:24 Case A

"… I guess to motivate, but also something more on a personal level. We do some team-building stuff, meaning lunch and golf-day stuff." P24:30 Case A

Clients:

"I've never worked with John Doe before; the first time I met him is when we went on this trip, […] He also came to me; if I see something, which I do not agree with, I will say it is not right its crap; so he will change it. He won't, like a lot of architects; get all twisted up." P12:93

5.4.1.1.7.5 Code 7e: Relationships – Socialising Weariness

In contradiction of the code, which reflected positively on the fact that role-players should socialise to build relationships, some respondents noted a weariness to get involved and socially to interact with the other role-players. Quotes reflecting this weary stance included:

Consultants:

"Certain types of person you can interact socially outside your work environment. Sometimes it is good, and other times not so good. […] I don't interact a lot with my team on a personal level. I don't meet John for a drink afterwards somewhere." P22:47 Case D

"So; although the guys become good friends through the project, they must still know when on the project, they must keep it professional. You have to adapt; and the project has many components; but at the end there must be a successful product." P17:40 Case C

"The project manager must make work a friendlier environment. Not that you become house friends that you know the oke's wife and daughter. Industry friends, you can handle it well, you can have a braai, maybe go to the rugby together, maybe a comfort level, if you've got that, then you are not scared, maybe if you are behind, no hassle, you can pick up the phone and sort it out. You've given a D date, tried to get to it; but things happen in life; those things come across your table. Phone the oke and tell him this is the trouble

you've got, I will have it by then. Give him a revise on that and then stick to it." P9:18 Case B

"It is funny, but there is always the honeymoon period. Everybody is dreamy, you have socials and drink beer together. But it's mostly meet and greet … […] But I think you have to split it, you can't be buddy buddy and work together. Because there is the work ethic. I don't mean that you are not friends with the people, but you don't socialise with them day in and day out. It clouds judgement. Or rather; it clouds the relationship. It complicates things." P21:51 Case D

Contractors:

"On a personal level, the personalities. It is really a nice team. Always jokes and sense of humour. I enjoy the whole vibe about the team. […] The only problem with relationships like this with a professional team, you try and keep these relationships good; but it comes to a point, then it becomes business. I almost want to say that you can abuse that relationship. […]. I suppose it is a gamble you take. In the end, I think I would rather have this relationship, than the fully professional relationship. I prefer the environment that we do have at the moment." 4:42 Case A

"We understood well. You knew when you could make jokes, or when it is serious; and we need to sort this out. It was the manner in which everyone communicated that was open." P20:47 Case D

"I chose not to get involved in this (social) aspect. You only rely on the individual and the experience that they bring." P18:39 Case C

Clients:

"The Client should be very mindful of that fact. Don't get dirty in this space, because when you need to make that decision, good or bad, you must be able to do it." P5:84 Case A

There is a definite fear of the relationships getting too cosy; and that at some level the professional interaction on the project will be negatively implicated. The respondents do not in all cases deny the need for social interaction and relationships; but they reflect on the level of familiarity or intimacy, which could cloud one's judgement.

5.4.1.1.8 Code 8: Dependence on others

Reflections from the participants indicate a dependence on the other role-players. This dependence has many different levels and directions. To ensure a deeper understanding and level of comprehension, the following sub-codes were created:

- Interdependence;

- Not all lost;

- Wider organisation / Peripheral staff;

- Future work:

- Technical input or information; and,

- Financial status information.

5.4.1.1.8.1 Code 8a: Dependence on Others – Interdependence

This sub-code relates to the participants indicating that the attainment of achievement of the project's outcomes and subsequent success cannot be isolated to one party; and that there must be a reliance, or dependence on each other, to achieve success. Respondent feedback reflecting on this dependence included:

Consultants:

> *"Yes we are all reliant. It can't be severed.   You are all intertwined. What I do…what the designers do is all intertwined. So, it is impossible to be independent." P1:31 Case A*

> *"… I would say it is intertwined. Because the building is a product of a team effort. We have often, if someone is not pulling their weight, not 100% acting on the best interest of the client, it affects us all." P21:33 Case D*

> *"If you say it is going well, then you might deserve a pat on the back, but otherwise it is the consortium, which did it. If things go wrong, then there might be some finger pointing; but at the end of the day, it is the consortium. They don't really know who was responsible, or where the mistake came in." P7:61 Case B*

"So if anything goes wrong, then it is the project's mistake and everyone is involved. That sour feeling when a toilet keeps on leaking… the client gets angry with everyone on the team." P13:35 Case A

Specific negativity towards being dependent on a large group:

"So for me, it is a constraint to work with such a large group of people. We did choose the people; but strangely enough it was from a previous tender." P21:15 Case D

"I feel that my performance was better on other projects; but it comes from working with a whole bunch of consultants." P10:27 Case B

Contractor:

"Unfortunately, it can never work like that. The building industry is about an end product. There it stands. How did it get there? So, in most cases, no, you can't (sever yourself from the outcome). […] But it stays difficult when projects don't turn out well. Because your name is associated with what happened; and you are part of that group." P18:30 Case C

"For outsiders, they see PQR project and all the names are there, whoever was involved with the construction. […] The outsider does not really know what went on." P20:48 Case D

Client:

"I try to think of my opening line […], but it was defining the spirit of co-operation. […] it is a sense of co-operation. The spirit of all parties. If you have a positive attitude and awareness to complete the project successfully, and this mutual sense of co-operation between the parties. I encourage that, because to me that already starts the ball rolling in the right direction." P5:156 Case A

"I have to put in just as much effort as they do. That is my perspective. I can give 100%, but it should balance out and we all give 50% and 50%." P 15:54 Case C

"At the end of the day, I see it as a team effort; if the three entities don't work together, something is going to fall behind." P23:33 Case D

This sub-code has strong links with team cohesion, due to the expressed interdependence on each other. The reader can also appreciate the impact on trust; if another role-player on whom you depend does not act in a positive manner.

5.4.1.1.8.2 Code 8b: Dependence on Others – Not all lost

In relation to the dependence mentioned in the overarching code, some participants mentioned their ability to view their contribution as being a success in a project and in a general sense indicating that not all is lost if a project goes sour, or is unsuccessful. There is only so much a role-player can do; and some have the ability to be able to stand back and view the situation for what it is, and to identify where a series of mistakes was made. Quotes for this sub-code indicated the following:

Consultant:

> *"If this job has not gone well, or it's …it can have a little bit of a negatively, but ultimately the firm still remains the central issue." P25:30 Case D*

> *"… you do have to look at it, look after yourself, your own integrity, make sure you are in communication; and unfortunately in South African construction, the man with the best paper work wins the claim award." P9:35 Case B*

Contractor:

> *"But on the other hand, if you are someone who is able to say: "this is how I work and I gave my best"; in my opinion, I did perform, and then you could probably say to yourself "I am happy with what I delivered". P18:30 Case C*

Client:

> *"Did I fail? No, I did not fail. I didn't appoint the first Contractor. If I appointed him and was part of the process, then I failed. In my opinion, because my judgement was wrong. I had no choice but to use what was given to me. I had to deal with the guy." P5:104 Case B*

The feedback indicates a very independent stance towards the project's outcome, especially with regard to being able to sever their inputs from the eventual possibility of project failure. This could in a sense also be a type of apathy towards the team goals; and standing back, and just making sure that their sphere of responsibility was

properly executed and documented. The manner of procurement and team development can also have an effect on this independent stance.

5.4.1.1.8.3 Code 8c: Dependence on Wider Organisation / Peripheral staff

The idea was also raised that in fact the interdependence of role-players runs deeper than just the parties directly involved. The peripheral staff who do some of the work on projects, but are not the main role-player representatives, are also depended on to perform and assist.

Consultant:

> "But what is important is that they (peripheral staff) don't always have some of the knowledge that you know; you have the faith, that if you ask them something and then don't know, that they will go to Frank and get it. So, it is important that the peripheral staff have an idea of what's going on. A team is important because it's no good you just working with the boss man, because other people are doing your work, and you must also be able to do the work." P25:38 Case D

> "The two owners of the electrical contractor were on holiday; therefore, the communication, which plays a very, very, very important role, was a problem." P19:20 Case C

Contractor:

> "… the engineer, he had two junior guys. If I could not get hold of him, then they usually had an overall idea of what is happening on the project. Although they were never on the site. And they could give input to a degree and confirm it later with the main engineer." P20:65 Case D

Clients:

> "We are experiencing it on the second phase; the consultancy does not have a registered structural engineer. Now, they have to bring in their head office expertise to sort out a few things. So many times they are under pressure." P15:89 Case C

> "ABC organisation has been very good. I think they have a very good guy there. Fully backed by Darren (the local office manager). He comes to every second

> *meeting. As soon as there is a problem, he is approachable; and he deals with it." P5:124 Case A*

Derived from the commentary, the reader can see that communication and information flow go beyond only the team members; but it is expected that the peripheral staff would have some knowledge of the current situation; and they would be able to assist in case of an emergency.

5.4.1.1.8.4 Code 8d: Dependence on Others – Future Work

The commentary on dependence on others also reflects on the future. Either for the success on the project, which could lead to future work, or just the fact that a role-player should comprehend that what they do on this project. This would affect future work relations, or acceptance by the role-players on other projects.

Consultants:

> *"In the environment we are in, I am probably going to work in this trade for another 18/20 years before I need to retire; you are going to work with those guys again." P9:15 Case B*

> *"Let's make it work and make it work well. And let's face it, at the end of the day as well, you still want to work with those people again. And you're hoping that by building that relationship, you will get more work." P 25:32 Case D*

> *"For me, it is the performance in the team; and it relates directly to the success or failure. […] A large multinational firm can say we've lost this one." P24:21 Case A*

The dependence on each other for performance and subsequent success relates to future work prospects. The future work prospect is also then; in some feedback, directly linked to the current client. Therefore, the outcome is a strengthened relationship with the client.

5.4.1.1.8.5 Code 8e: Dependence on Others – Technical input or information

As one of the major resources during the project, and due to the multi-disciplinary inputs, the role-players are dependent on each other for information. This dependence influences the individual role-players' performance. Feedback related to this sub-code reflected the following:

Consultant:

> *"They've done things on site, but it is not on paper; you can't do it for them, they actually have to do it." P16:10 Case C*

> *"Also the same thing, if you request information; and a week later, you are having to request the same thing, not received. Because you have to meet deadlines and you have to rely on other outside parties. It is something that is out of control. And you can't do it yourself; because it is drawings, or information that you need." P22:25 Case D*

> *"I think also you need to work together with your fellow consultants. If you are battling to get information, it also affects you badly." P25:12 Case D*

Contractors:

> *"You can only get a glimpse of the bills of quantities; and how they are put together; but it all depends on the skill and ability of the QS. […] You depend on the bill to form some sort of an idea of what you will be facing." P18:33*

> *"…if the consultants don't do their job, I won't be able to work. So, if they perform, I can perform. But if I don't have the information, and I don't perform, I can't deliver." P6:41*

The dependence on technical input and information is hinged on two factors, as can be seen in the feedback; firstly the correct information being given; and secondly, the actual timely provision of the information.

5.4.1.1.8.6 Code 8f: Dependence on Others – Financial status information

The sub-code indicates that the role-players depend on input from others to provide financial inputs or information. Decision-making, and ultimately, performance, is influenced when the current project's financial status is unknown. Evidential feedback noted:

Consultant:

> *"…money and advice on where the costs are sitting; but then you also need the rest of your team to be co-operative." P25:22 Case D*

"…we are supposed to report weekly on cost savings, so for the last couple of months nobody knows where we going …so there is that apprehension at the moment" P11:40 Case B

"At the moment, no one knows where it is financially; and no one makes decisions." P10:47 Case B

"This is with all the QSs, I don't mean that one is better than the other…but with others, we actually got some (financial status) feedback." P 8:18 Case B

5.4.1.1.9 Code 9: Learning from Others/Team

The direct focus of this code was the respondent's feedback as being descriptive of the value they add to working with others. Specifically, other role-players, from whom they can learn; and be able to add to their own future experience and knowledge. The feedback expressed a drive or motivation, due to the interaction with knowledgeable experts in each discipline; while being granted an opportunity to gain personally; and to become more experienced and skilled through the interaction. Quotes, which correlate with the above code description and explanation were:

Consultant:

"The group shapes you and you cross-pollinate, you teach, you learn…" P21:43 Case D

"One is the experience you gain. It is such a large team. You have four architects, two QS's, two teams of civil and structural engineers. […] And the contractor. You are dealing with a lot of information constantly, which ends up with you. It's quite enjoyable to get involved on all aspects." P22:18 Case D

"And because of all these teams, you have the experts from all these different areas. So, you learn from them; and I think it is quite nice." P24:17 Case A

Contractors:

"I enjoyed the fact that you learn from each other; and they listen to what you say. I had the feeling everyone was learning from each other." P20:37 Case D

"I enjoy the interaction with experts. […] I enjoy working with people that know what they are doing." P18:21 Case C

Clients:

> *"You work with so many different parties, each unique. It has its own rules, regulations and processes." P23:52 Case D*

5.4.1.1.10 Code 10: Procurement

The manner in which teams are brought together solicited an array of commentary. Along with the manner of procurement, specific commentary also related to issues with certain specific role-players. To again assist with making sense of such a wide construct, the feedback related to procurement was divided into the following sub-codes:

- Early contractor involvement (ECI);

- Re-appointment;

- Small and Medium Enterprises;

- PM background/competence;

- PM timing of appointment;

- Luck;

- Red tape; and,

- Planning.

5.4.1.1.10.1 Code 10a: Procurement – Early contractor involvement (ECI)

This sub-code indicates the influence, which early contractor involvement (ECI) had on the cases, where this procurement strategy was employed. The role-players can reflect well on the experience, because of the comparisons they can make between a traditionally procured building contract and this strategy. Specific quotes noted were:

Consultants:

> *"… for the client it (procurement method) is healthy. I think he has admitted it. It became a more cohesive team. He (the contractor) became part of the project/process, which nullifies… hmm. How can I put it? Sometimes projects almost become bickering, claims-orientated. It is him (the contractor) against us. Here, he feels, he is part of the process." P1:17 Case A*

"What was good, every single team member was brought into the idea of early integration of the contractor, making him part of the team. Otherwise, if you had resistance, you would not be able to do that. Even one of the sceptical consultants, went with the flow, and also supported it. That actually helped from the team's side." P24:10 Case A

"I think it (involving the contractor early) had a good positive impact. The Contractor was a bit more responsible for designing. They have more ownership, and feel they are part of the professional team, in the decisions as well. […] When so often a contractor feels that way and feels "boss" and "worker"." P2:45 Case A

Specific negative comment related to early contractor involvement:

*"We actually had some cost savings when we dropped the second half of the roof; because the entire façade changed, hence a minor saving. But nothing major or noticeable." P**7**:67 Case B*

"I can't think of anything that they brought to the table, which would have made an impact. From where we lifted the roof; and they said it could work; and when they had to do it, they said they can't do it for those rates anymore." P8:44 Case B

Contractors:

"What is very nice here, from an Architect to Engineer, on a continuous basis, everybody is involving us as a Contractor, as well. Right from the design stage, so that we can also advise as to which is the best way to go about it." P4:34 Case A

"I think the team was actually from the beginning, more cohesive, […] From the beginning, everybody had to sit together, like the electrician, you could quickly chat with the guy and get an idea of his work. Same with the HVAC work. So the team was closer-knit quicker than in a conventionally phased process, in which we would be involved later. […] We got to know each other…" P6:46

"I think it is something you get used to; and you just do it. And I think the environment in which you tender does play a role. […] definitely in a situation where you come in later, and you form part of that team.[…] Most of the time

we accept that we come in later in the process; and that is just the way it is…"
P18:31 Case C

Client:

"When we did the RFP (Request for proposals) with them, we asked them to write Project Plans for functionality, to ask them how they would deal with this early-contractor involvement. […] Our process is brilliant." P5:130

Early contractor involvement assists with many of the relational and trust issues, which exist in traditionally procured projects. Contractors feel that they are part of the team; and they are included on certain design aspects.

Due to the current structure and conventional or traditional procurement strategies being implemented, a lack of value addition by the contractor was also noted. Early contractor involvement in such cases could be negative and compounded by the possible risks associated with the early involvement process.

5.4.1.1.10.2 Code 10b: Procurement – Re-appointment

Re-appointment of a team, as noted as a sub-code, due to the links with team continuity and also the positivity with which the feedback came across. Quotes and commentary noted:

Consultants:

"But a good team, you start understanding each other. So that is sometimes the difficulty with government work, you could just get thrown together. All of a sudden, you are working with MM Engineers; and you've never really worked with them before, and almost have got to learn what they need, what and how. But I think it is the more experienced guys, and if you've worked together before." P25:26 Case D

"So it makes sense, but if procurement comes into it…You have a performing team, like at Site X, you know each other very well; and it works on all levels. The next project you can appoint the same team, they know what to do, so the norming, storming thing is done. You can dive straight into production. […] One should learn/leverage from that; and not always think that if they know each other very well, they make funny things." P24:6 Case A

"…the same team has been carrying on from phase 1 – 4, so we worked together as a team, right from the onset. The same team has done the design right through to the final stages. We know each other; and we are a closely knit team now. We are not getting to know a new team and having to get to know a whole new person from each discipline. Understanding and lessons are learnt."
P22:21 Case D

Continuous involvement of a group of team members seems to have clear advantages. The teams have learnt a lot through the previous project interaction; and it can be noted that they have gained a lot of trust generally in their team members, but specifically in their competence.

5.4.1.1.10.3 Code 10c: Procurement – Small and Medium Enterprises (SME)

A major area of concern mentioned, in relation to site work, was the impact and actual inclusion of Small and Medium Enterprises (SME's). In most cases, the client has made the inclusion of SME contractors a contractual stipulation. The commentary notes a broad spectrum of issues, with both ethical and moral dimensions. Relevant quotes indicated the following:

Consultant:

"And we are warning them about the SMEs. And they say, SMEs have nothing to do with us. Unfortunately, you are going to be building in a National Development Zone, you are paying; but you are going to be hit. And you have to allow [for] that in your thinking." P25:20 Case D

Contractor:

"Making use of the SMEs, their limited knowledge, skills and resources, it is quite difficult. For example, last week the brick guys didn't pitch for three days. That is three days I lost on the programme. […] Something else that restricts me is with the strike and that. If I have a strike of two days in a week, that week is actually very unproductive for me. You know what it is like. I don't have momentum, have no continuation, no momentum. Guaranteed, every month I was stopped somewhere." P4:17/21 Case A

"One thing that was an Achilles heel was the SMEs. It has become a swear word in the industry. We lost a lot of time, money, quality… Everything goes

backward with the SMEs. Not even talking about the process of managing them, and to even initially get them on site! […] I remember that Phase 2b alone was closed down three times. They just walk on site and demand that either you stop work or they will close the site." P20:11/15 Case D

The impact and frustrations are noted in relation to the involvement of SME contractors. A real sense of loss of power and control can be felt with possible future apathy towards the project; and especially the contractors finding this to be an unfair burden to carry.

5.4.1.1.10.3.1 Interesting insights in relation to the involvement of SMEs

The following commentary was quite insightful; and it gave the researcher some insight into possible solutions to the problem of successful integration and the use of SME contractors in the construction industry:

Contractors:

"…I think the Client could definitely be more involved. For example, with the brickwork, I've been paid 90cents a brick, and I'm now paying R1.20 a brick. I phoned the Client. I told him, "listen they've stopped work". I can't pay them (SME contractors) more; otherwise I am losing out now. So he said, "Quite frankly, my contract is with your company; and he suggested we meet with the head of SME in the city with the Client and Pr.QS. And he said my contract is with you; and he has nothing to do with them." P4:26 Case A

"The problem is that they are now SMEs…the brick workers on site, I've spent R5000 on both of them to get them building truffles. I am buying all the equipment, material for the SMEs on site. I am trying to deduct it, but with the rates that I've got, they are deducting such a small portion, it will probably have to write off R3000-4000 per SME. They just won't be able to pay me back. And subcontractors as well. I've already had three this month. And, according to them, they say it is not illegal or corrupt. I am saying to you that "I don't have the capabilities of doing the job for now, this is my work package, but you can buy it back from me." P4:32 Case A

"They (SMEs) would be able to do it, there is no way. He has to undercut my tender price. So you are setting him up for failure. There is no way that as a 'bakkie builder' he can do the work for the same price that I can. OK, they have

few overheads; but most of my overheads are covered and priced for in the Preliminaries and General section. That is why I say they are creating a situation where the little guy is not going to make it." P20:18 Case D

The above commentary indicates a requirement for the client to be involved and sensitive to the issues. The indications are there that the current involvement process also opens up avenues for corruption; and, that it is thereby explained that the current practice is unsustainable.

5.4.1.1.10.4 Code 10d: Procurement – PM background / competence

Specific feedback was levelled at the requirements related to the background and the competence of the person to head up the project, as a dedicated PM.

Consultants:

"And in instances where the Project Manager is too sterile towards the building process, that is a problem. […] I think it is usually when the Project Manager comes from a different discipline or industry like industrial or just process management." P21:60 Case D

"My feeling is that if you are not trained as a Project Manager, there are only two other disciplines, which should do it; and that is the Architect and QS. They are the only ones involved in the entire process." P8:28 Case B

"Maybe, it is because they are new to this project-management environment, Travis from civil engineering and Ronda not being related….not this type of thing, it has been a learning curve for them." P9:59 Case B

Contractors:

"Ideally, it should be an individual; and it should not be an engineer or an architect who is involved in the project. If it is your background, you tend to fall back on that role because you know it. In an ideal environment, it should be an independent person." P18:10 Case C

Clients:

"What we see in industry is that the Principal Agent (PA) is not up to standard. On most of our recent requests for quotations from consultants, we have a

requirement that the PA must have more than 10 years' experience in the industry." P23:55 Case D

The feedback indicates that if the PM does not have the proper background, or the related competence; so, there could be distrust forming in relation to their ability to do the work; and this could be seen in the context of codes, which isolate the role-players' high expectations and various required inputs (motivation, vision, planning, strategy, pro-activeness, keeping others focused and information gathering).

5.4.1.1.10.5 Code 10e: Procurement – PM timing of appointment

Further procurement-related comments in connection with the PM, as to when the person should become part of the project noted that the timing could be vital for effective future involvement and impact.

Consultant:

"So if you didn't have a go-to-it person that is going to co-ordinate everything, then bring that person on board as the 1st person. Tell him what you're doing, how you going to tender this thing out, let them know about the process of evaluation and design, bring the Architect on, OK. Then start work with the Client and PM and get the design resolved; and get the guy to tender for the other things right. Then bring the PM on basically 6 months before you go on tender; but I feel there is quite a lot that is already lost." P10:21 Case B

"You've got that, plus the dedicated PM. Also, the Architects got appointed first and they did a competition; and they won it on that basis, and it was developed to quite a stage, and then we were only appointed; and the PM was appointed the same time, as we were. When, in reality, he should have been appointed earlier..." P11:25 Case B

5.4.1.1.10.6 Code 10f: Procurement – Luck

The feedback below relates to the participants' feedback, which alluded to the view that in many instances the process of procurement and ending up with a "good" team and role-players is actually pure luck. It is coincidence; and it is not usually planned.

Consultants:

"It was just luck. He (the client) does not ask me if I work well with someone, he just says that you will work with so and so. […] but at the end of the day, it went quite well." P13:38 Case A

"Well, I think that with a team that doesn't perform it has probably got to do a lot with luck." P24:38 Case A

Contractors:

"I also think it depends on the type of person. It was coincidental that it works out this way." P20:40 Case D

5.4.1.1.10.7 Code 10g: Procurement – Red tape

The processes and procedures to follow during the procurement cycle were also mentioned, as having an impact on performance and motivation.

Consultants:

"Really just let us do the job. Even coming back, can I come back to the motivation thing? I think on KLM project, a thing that affects your motivation, is ABC Company's requirements that everything is kept; so, you can't talk about it; and you don't have direct access to the tenderers. Whereas, in the private sector world, you have access to the people; and you discuss it […] I find the red tape and the restrictions affect your motivation and your performance […] I think part of the problem is that red tape. If you are in the private sector your client trusts you. But these kinds of jobs, there are a lot of restrictions and you can't do advanced payments. It is a bit governmental. It doesn't help for easy administration." P25:10/11/14 Case D

Client:

"I think the area that concern me in this environment, is the process of procurement; and then managing those timeframes. Nightmarish." P5:67 Case A

"If I have to be honest, if it comes to procurement and that sort of stuff, you have to fall in with the processes. That sometimes becomes a hindrance." P23:49 Case D

"…then I have to go back to the user department and get approval. It sometimes leads to a big paper battle and long delays." P15:12 Case C

This code shares the feedback from those mostly involved with the procurement systems and procedures. In this case, it is the client representatives, which have to fight the internal systemic battles. A sense of frustration can be seen; and to a degree, the lack of full ownership in relation to making decisions and being dependent on internal client organisational committees for their approval. Apathy towards the project could be a possible outcome from systems and procedural hindrance.

5.4.1.1.10.8 Code 10h: Procurement – Planning

Prior planning as a function of the client organisation's motion towards procurement of the role-players, and setting the scope on which they will base their inputs, was mentioned by specifically the client representatives; as having an impact on the ensuing performance.

Clients:

"We do a proposal, they sign it off, and still they don't know what they need. But it has an influence on what services are needed underground. That information I don't have. […] That makes it difficult for me, because I don't have the info to relay to my consultant team. Without the right information, it will influence the budget and performance." P15:82 Case C

"Part of the reason has been time frames, things are left till the last minute. So all of a sudden, we have to do a document to get funding, an estimate, and needs requirement, and what it is based on. And everybody involved is pushed to the last minute. So, these things get knocked up quickly, and there is just not enough to be able to be done on that. And that creates a ripple effect. And now we sit with the situation where the user says "these are our needs"; and they get something totally different." P 5:71 Case A

This code indicates the importance of the early planning stages within the client organisations. The follow-on performance of consultants and contractors is influenced by the initial planning.

5.4.1.1.11   Code 11: Control Freaks

In some instances, the feedback relating to a person with the need to be in control of a project was self-professed; or it was noted by others. The quotes related to this code indicated:

Consultant:

> *"So not having control is probably the thing I haven't enjoyed. […] My performance on this project versus another project is slightly limited; because I am so used to over-performing and making sure that things are right. It is probably a bad thing; because you become close to the person, who wants to control everything; but personally I know at least it is right then. It is difficult to co-ordinate it like that." P10:22/27 Case A*

> *"Very often, I wish I could do things myself, where the Contractor is concerned… (laughing), but that would be ridiculous." P16:2 Case C*

Contractors:

> *"The architect, maybe not that much, relied very much on herself, where she could have drawn in more expertise. […] There were times when talking to her that I got the idea that the project is hers; and she does not really want external input. […] I got the idea that she made the project hers; and she cut if off from her firm." P18:43 Case C*

Clients:

> *"Yes, he did take ownership. I spoke to Gary the other day; and he also noted that he doesn't share too much; otherwise he feels he has no control over it." P15:51 Case C*

The reader could appreciate the underlying high level of individual performance required in the project environment, leading to a feeling of a loss of control. The influence on this high-performance requirement and control could have possible origins in the appointed individual's organisation, thereby reflecting on their internal organisational culture. Another origin could be a personality influence, which expresses a need for such a control. A relationship with the code "Dependence on Others – Interdependence" is clear; and it will be discussed in depth during the discussion of the Categories in Section 5.6.

5.4.1.1.12 Summary of Feedback for Question 1

Table 12 reflects the eleven codes and the sub-codes identified, as part of the analysis of the data related to Question 1:

Table 12: Summary of codes for Question 1 (Researcher's Construct, 2017)

Code No.	Codes with related Sub-codes	Code No.	Codes with related Sub-codes
1	**It takes time before I can trust**	**8**	Dependence on Others
2	**Technical competence/ability**	8a	Dependence on Others - Interdependence
2a	Technical ability – Specific critique on Architects	8b	Dependence on Others – Not all lost
3	**Transparency**	8c	Dependence on Wider Organisation / Peripheral staff
3a	Transparency – Actions by Consultant Team	8d	Dependence on Others – Future Work
3b	Transparency – Actions by Consultants - financial	8f	Dependence on Others – Technical input or information
3c	Transparency – Actions by PMs	8g	Dependence on Others – Financial status information
3d	Transparency – Actions by Contractors	**9**	**Learning from Others/Team**
3e	Transparency – Actions by Contractors - Financial	**10**	**Procurement**
3f	Transparency – Actions by Client	10a	Procurement – Early contractor involvement (ECI)
3g	Transparency/Honesty – Transactions	10b	Procurement – Re-appointment
4	**Cohesive Actions**	10c	Procurement – Small and Medium Enterprises (SME)
5	**Part of a Team**	10d	Interesting insights in relation to the involvement of SME's
6	**Continuity of team members**	10e	Procurement – PM background/competence
7	**Relationships**	10f	Procurement – PM timing of appointment
7a	Relationships – General	10g	Procurement – Luck
7b	Relationships – Effects of a lack of or no relationship	10h	Procurement – Red tape
7c	Relationships - Client relations	10i	Procurement – Planning
7d	Relationships – Socialising	**11**	**Control Freaks**
7e	Relationships – Socialising Weariness		

Figure 12 highlights the eleven codes identified during the analysis of the data for Question 1:
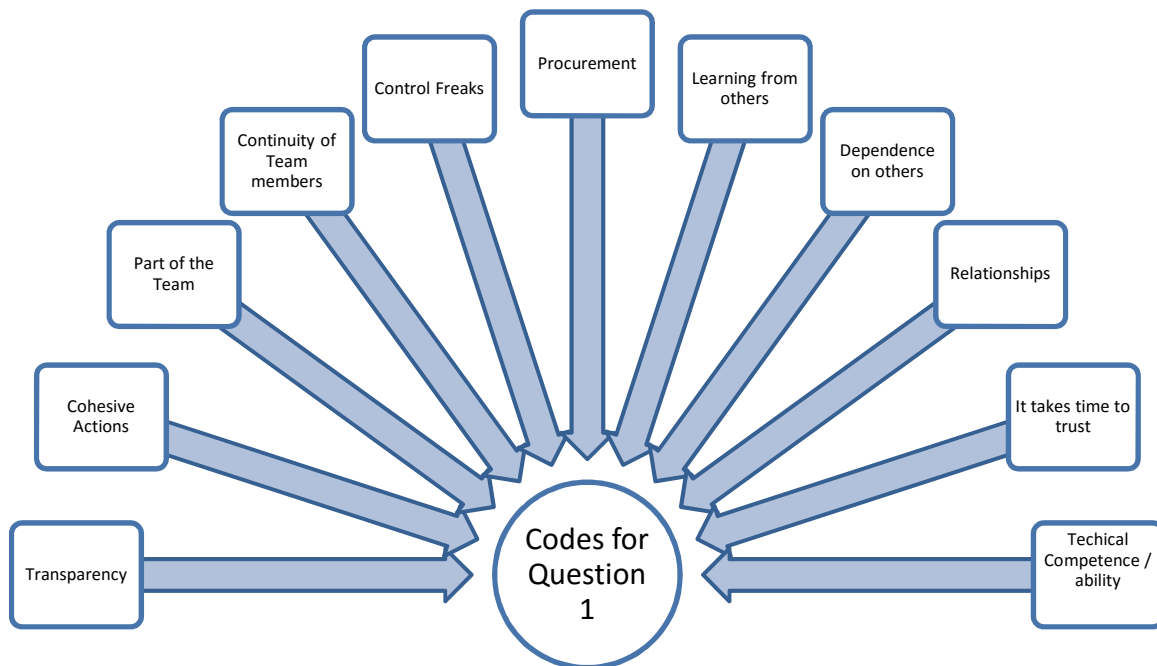
Figure 12: Question 1 – Codes (Researcher's Construct, 2017)

As far as the feedback from the participants can be assessed for Question 1, the overall perspectives can be summarised under each code heading as:

Code 1 – It takes time to trust you:

> The trust in others is gained over a period of time; and it is not instantaneous. Proper or envisaged performance is the foundation for the trust and impacts in the building of relationships. These relationships assist with communication, information flow and problem resolution.

Code 2 – Technical competence/ability:

> Technical competence or ability is a specific requirement from the role-players. The architectural profession was noted in the sub-code to have a miscomprehension of practical site issues.

> Further links are shown in Section 5.3.1.3.1 (Technical competence trumps all). Here it is noted that the same requirement related to the acceptance of a role-player to be technically competent in his/her role.

Code 3 – Transparency:
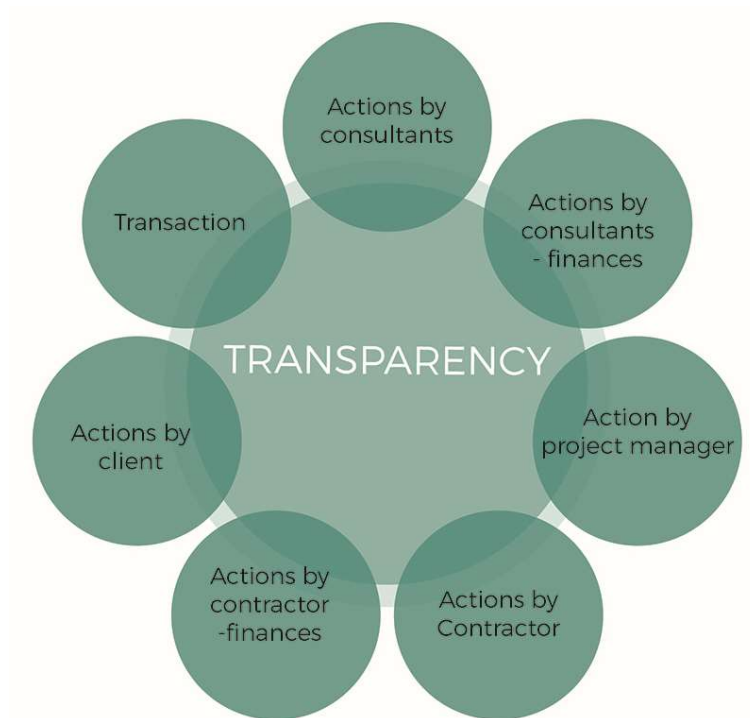
Figure 13: Transparency Code diagram (Researcher's Construct, 2017)

The transparency of role-players has a direct impact on the trust between the role players.

Financial inputs are sensitive and directly linked to transparency.

Consultants expect a lot of transparency to flow from the project-management role.

Distrust which flows from a lack of transparency puts a strain on:

- Relationships;

- Communication; and

- Cohesion within the team.

The perceived actions, which are not transparent, can be seen to even breed distrust in a role-player's ability/competence. This distrust arises from a lack of transparency. It is counter-productive; and it leads to a sense of apathy towards the project and its outcomes.

In the end, the lack of transparency reinforces age-old operation silos between the three role-player groups. Commentary on the transparency of contractors reflects on generally held views of the on-going adversarial nature of the industry.

Transactions that take place on projects note both the role-players expectancy and their willingness to assist others with the hope that they will do the same in the future. The feedback also alludes to the role-players' need to conserve the Positive-Project Momentum (PPM) through transactions.

Code 4 – Cohesive Actions:

Role-players value team cohesion; and they act to achieve this. The actions are purposive and urgent. Role-players take ownership of the project relationships, knowing that positive relations can reinforce positive individual performance and successful project outcomes. These cohesive actions again build trust and links with the sentiments related to the "transactions," which are noted as part of the "Transparency code".

Code 5 – Part of a Team:

Being in a team seems to motivate role-players. The comradeship and good performance of the team is motivating. The inherent interdependence of the team members seemingly drives their performance.

Code 6 – Continuity of team members:

The continuity of team members seems to have an influence on the role-players' performance. In some cases, the performance was negatively impacted; but in others, changes were welcome and did positively impact on performance. Apathy of the remaining role-players towards the project goals was a possible outcome of team members constantly leaving or joining the project team.

Code 7 – Relationships:
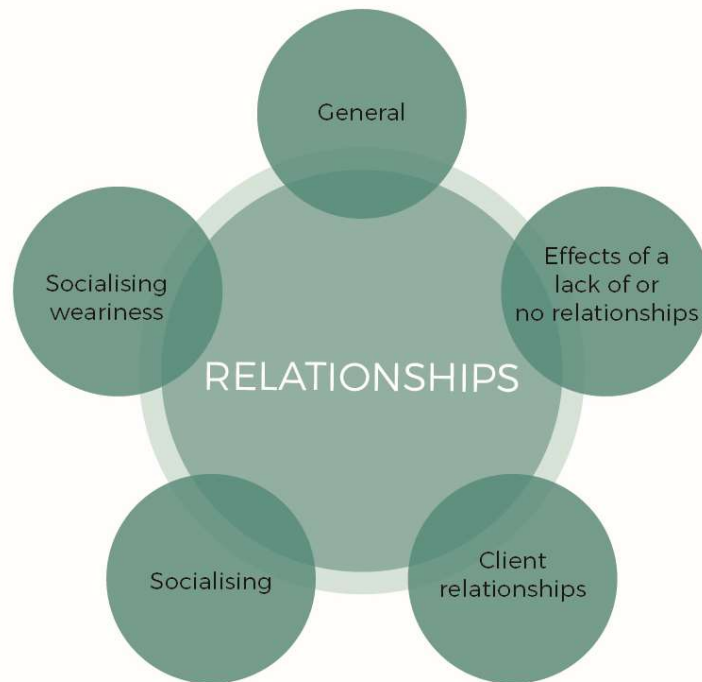
Figure 14: Relationships Code diagram (Researcher's Construct, 2017)

Relationships are valued by the role-players; and they assist with achieving the project's goals. There are possible links between relationships and team cohesion with an understanding of the dependence on others, to achieve the project's goals. A lack of relationships has a negative effect on the achievement of the project's goals.

Sustained role-player commitment and performance builds and strengthens the professional relations.

Some role-players aim to build or focus on the relationship with the client.

Respondents see socialising as a tool to build relationships; but there is also a weariness related to the depth of these relationships, as well as the effects on professional practice or judgement.

Code 8 – Dependence on others:

Figure 15: Dependence on Others Code diagram (Researcher's Construct, 2017)

Project outcomes and success cannot be achieved in isolation. Links could be appreciated between this "Dependence on Others" code and team cohesion, due to the expressed interdependence.

There could also be some impact on trust between the role-players; if the dependence and its outcomes are either positive or negative.

Some participants seemingly have the ability to be able to stand back from a project and identify where and by whom a mistake was made; and subsequently, to separate their inputs from the eventual project failure. This could be identified as a type of apathy towards the team goals; and it could be a consequence of manner of procurement, contractual arrangements and team development.

The interdependence of role-players is also influenced by peripheral staff, who do some of the work on the projects. The communication and information flow is expected to go beyond those directly involved.

Success on the project could lead to future work; and the role-players should comprehend that project success will influence work relations, or the acceptance on other projects, thereby also directly influencing the relationship with the client.

The role-players are dependent on each other for information. Dependence on technical input and information is twofold; and it relates to the correctness of information and the timely provision thereof.

Decision-making, and ultimately performance, is influenced when the current project's financial status/information is unknown.

Code 9 – Learning from Others/Team:

Role-players value the opportunity to work on projects with other knowledgeable professional team members. These sentiments reflect situations; in which the role-players learn, and are able to expand their own experience and knowledge through their interaction with others.

Code 10 – Procurement:
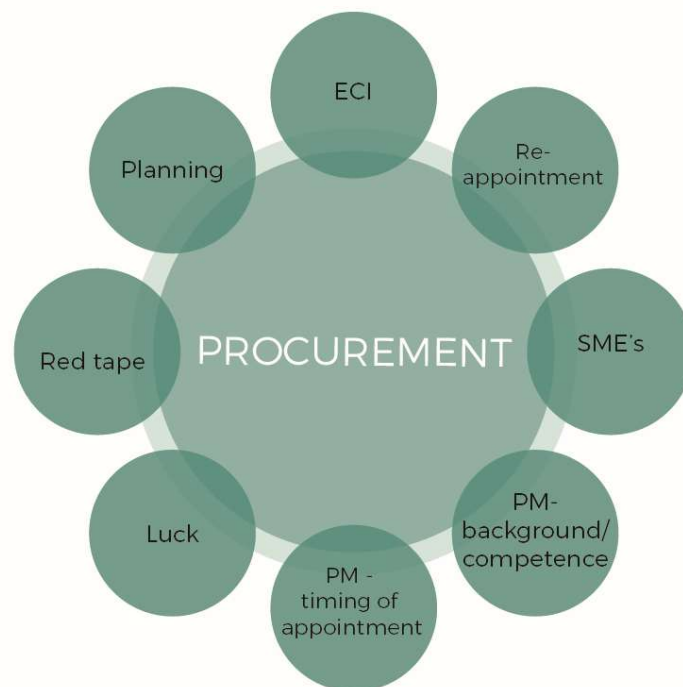
Figure 16: Procurement Code diagram (Researcher's Construct, 2017)

Role-players could reflect well and compare the situations where traditionally procured building contracts and ECI strategies were employed. The reflections noted that many of the relational or trust issues, which exist in traditional strategies, could be overcome by making use of ECI. ECI could have a negative impact; whenever the contractors are perceived to add no value, as part of their early involvement.

Continued involvement, due to the re-appointment of a group of role-players seems to have clear advantages. The role-players on these teams seem to have generally gained major trust in each other's competence. Strong links could be identified with the code "Continuity of team members".

The impact and inclusion of SMEs brings to the fore, a broad spectrum of issues with both ethical and moral dimensions. Contractors seem to feel a loss of power and control with a possible build-up of apathy towards the project outcomes. Some commentaries indicate a requirement for the client to be involved and to be sensitive to these SME issues. The indications are that SME involvement could open up avenues for corruption; and that the current practice of involvement is unsustainable.

If the appointed PM does not have the proper background, or related competence, there could be distrust in his ability to fulfil the role.

There is seemingly also a connection with the timing of the appointment of the PM, noting that this could be of vital importance for the positive involvement and impact on the project.

Some feedback indicated that the process of procurement, and finally ending up with a "good" team and role-players could be by chance or luck.

Related to internal procurement red-tape, those mostly involved with the procurement systems and procedures indicated a struggle with the client's internal systems; and a sense of frustration, which could lead to a lack of full ownership of the project.

Prior planning, as a function of the clients' organisations was noted as having an impact on the ensuing project performance of both the consultants and the contractors.

Code 11 – Control Freaks:

Some role-players expressed a requirement for strong individual performance, combined with a possible lack of performance; if they are not in control. The feedback could reflect on influence from the employer's organisation; and the organisational culture; but personality influence could be the main driver in the search for such control. Links with the code "Dependence on Others – Interdependence" can also be identified.

5.4.1.2 Analysis and Results for Question 2

Question 2 explored the various aspects related to the role-players' organisational cultures. The question was:

Question 2:

What is the effect on the performance of the combination of the various role-player organisational cultures on the projects?

The question is supported by the literature in Section 2.3.

5.4.1.2.1 Code 12: Given Ownership/Responsibility

The responses noted below give evidence of the ways in which respondents feel when they are given responsibility by their employers, or within the team environment. The responsibility is communicated to the role-player, so that they can and should take ownership and do what is necessary to get the work completed successfully. In some cases, though the feedback also notes the frustrations with a lack of this type of responsibility. Responses for this code were noted as follows:

Consultants:

"On the one side with the client organisation, and also on the other side on this project, I've been left to take responsibility; and boy you run with it. And that is important, because you get that confidence, and additional feeling of responsibility, that I think, if I am doing this right. Because you feel trusted and that is important. [...]I've been fortunate and have been given the reins to go with it. That does make a difference. It gives you the confidence and that

additional responsibility and you know how responsible that job is that you were given." P22:32 Case D

"… have the freedom in our office to do the design and again that comes with acceptance from seniors in the company that you can do what you are supposed to do. To run a project on your own, it does help in terms of a project, because I can go to a site meeting; where decisions have to be made on site, without having to run back to the office." P9:42 Case B

Contractors:

"… there isn't the constant nagging about how is it going? And is everything OK? There is actually an acceptance that you know what you are doing. And I am totally in favour of such a model. I don't want someone to look over my shoulder all day. It almost indicates that you don't trust me." P18:37 Case C

"He screams at his guys. I don't do that. I will call in my foremen and discuss it. I will never belittle my foreman in front of his team, and I give him rein to manage his team." P20:58 Case D

Clients:

"I don't have the necessary power to make some decisions. I also need to go back to the red carpet… That is my problem. […] Previously (previous employer) it was my call, but now I don't have the authority." P15:9 Case C

"But I prefer to manage it and intervene, when I need to. But Consultants are professionals and they've got to get the sense that they are directing the traffic, that they are managing it." P5:84 Case A

"…as client project manager, if I am too forceful or involved, they might get the message that I want to take the responsibility away from them (other team role-players). Then they might start to distance themselves." P15:44 Case C

"For me, it is all about service delivery. I have been given the mandate to deliver the final product. For me, this is to deliver the product within the given time, cost and quality; because I have the mandate." P23:20 Case D

Respondents feel trusted and valued when given the proper responsibility to fulfil and complete project tasks and objectives. The ability to give others responsibility also seems to be an outcome of the way that the role-players are given responsibility and

ownership by their organisations. Role-players find confirmation of their ability or competence in the way that they are given responsibility.

5.4.1.2.2 Code 13: Internal Support

Each role-player coming from a different employer body or organisation seemingly needs a level of support from that structure. This need, and in some cases, the lack of support, is noted in the following feedback:

Consultants:

> *"I'm not saying it was entirely his fault; but maybe he didn't get the support he should have had." P22:12 Case D*

> *"I have to sometimes stand back and say to myself, I am only the architect. Many times you get asked for something which you know is not your duty and actually their responsibility, but I have the freedom to tell my partner, this is your duty." P21:20 Case D*

Contractors:

> *"What Hubert Humphrey has given me is his full backing. The National Managing Director does understand this (project environment) and the difficulties behind it." P4:85 Case A*

> *"With the engineers, I did not pick up any negative points with their firm. Their system is very much based on a similar one as ours. If there are problems, come and ask me." P18:42 Case C*

Clients:

> *"My engineer on the second phase is running late on the roof trusses and structural design, which the architect proposed. This is due to the lack of capacity in the local office." P15:90 Case C*

> *"That is also another thing about a lot of the management at the institution; I do not think they see the value or what our intentions are for these buildings. I do not know where it comes from; but there are so many agenda's out there." P12:108 Case B*

> *"It gives that motivation that I know I have the opportunity to make a difference; [since] I have their support." P23:20 Case D*

5.4.1.2.3 Code 14: Small Organisations

This code mentions some of the issues raised in relation to small organisations which are involved on the projects, as the employers of the specific role-players. The comments related to the manner in which these small firms operate and their focus. The following quotes are representative of the feedback:

Consultants:

"Project manager, you can see they are a bigger company, more national/international influence whatever it is. You can see where their constraints are. They must have certain things in place, a bit of frustration sometimes of the delays, waits, got to have this number. […] You see that is the evidence to them, they must be very careful how they manage their time and their report. We are more relaxed, more flexible. The flexibility with the architects is there as well." P9:46 Case B

"…that is tricky in my case. I think for me it's the work I do for the projects and the clients translates directly into the success of the business. […] For me it is the performance in the team; and this relates directly to the success or failure. A large multinational firm can say we've lost this one. […] On the QRT project it was all small companies, and the owners, or someone senior, are directly involved in the project. So that also creates a different sense of responsibility and ownership to the project, as a junior engineer that is involved in a 5000 strong organization, who is on leave now and could not care less about the project." P24:21/23 Case A

"I think they are all similar to us. All of them are from small organisations. XYZ Company is also a small office, a lot like ours. The same type of rules. So, maybe our heads are almost screwed on in the same way." P13:41 Case A

Contractors:

"If we look at the individual, the QS was, well he has his own firm and many years of experience. There were no problems from his firm. It is a one-man show." P18:39 Case C

"No, I must say we have ABC and DEF Companies. They are one-man bands. So, I would say they are very small and efficient." P6:54 Case A

The commentary relating to small firms indicates perceptions on the manner in which they conduct business and make decisions. These firms seem to be more efficient in their actions, with subsequent better performance. Mention is also made of their specific reliance and focus on the client.

5.4.1.2.4 Summary of Feedback for Question 2

Table 13 below summarises the three codes identified during the analysis related to Question 2:

Table 13: Summary of codes for Question 2 (Researcher's Construct, 2017)

Code No.	Codes
12	**Given Ownership/Responsibility**
13	**Internal Support**
14	**Small organisations**

Figure 17 shows the codes identified for Question 2:
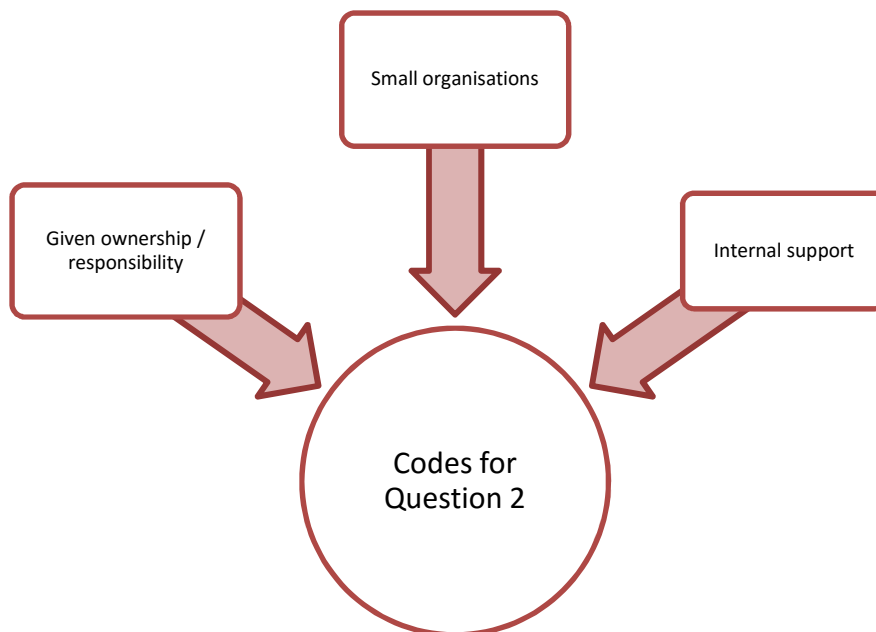
Figure 17: Question 2 – Codes (Researcher's Construct, 2017)

The overall perspectives for Question 2 are summarised under each code heading as:

Code 12 – Given Ownership/Responsibility:

Trust, valued inputs and confirmation of ability is communicated when role-players are given the project responsibilities in relation to their roles. This seemingly enables the role-players to give others responsibility; and it could be an outcome of the manner in which responsibility and ownership are given in employer organisations.

Code 13 – Internal support:

The internal workings and environment of the role-player's employer organisation influences the performance of the role-player represented on the team. There has to be proper support for the representative role-player internally, in order for it to function properly on the project.

Code 14 – Small organisations:

Small firms are seemingly more efficient; and they perform better than large firms. These small organisations are especially reliant on the client for sustainable operations, because of their size. This reliance seemingly creates a lot of focus on the client.

5.4.1.3 Analysis and Results for Question 3

Question 3 investigated the issues surrounding role-player diversity within the construction-project environment. The question for this section is noted as:

Question 3:

In what ways does the diversity of role-players impact performance?

The question aligns with the literature in Section 2.3.

5.4.1.3.1 Code 15: Technical Competence trumps all

Technical competence, in relation to the acceptance of diversity in the team, was easily identified as a code. The overwhelming response from the role-players indicated that anybody is acceptable to the team, provided that they are technically competent. Feedback stated the following:

Consultant:

"No, that does not matter, never has in my employment. It does not matter who the guy is, what colour, or who he is. He is doing a job that he is employed to do. […] they are there to do the job, then diversity is not going to affect. Is the guy doing the job that he is employed to do? […] So, treat the guy with respect. I do not care where they are coming from, as long as he is doing what he is supposed to do. Diversity on the site is important. On the mechanical side, whether he is coloured, Muslim, does not matter. Treat the guy with the respect you want to be treated with. Now that you mention it, you see I've got to think about it, to me he is just another colleague sitting with me around the table."
P9:51 Case B

"…there was a female on board, and I think Gary was a coloured, and I am an old grey person. Not really anything (negative) which I could pick up. The qualification and [the] quality go hand-in-hand. The better they are qualified and experienced, the better they will do the job. Diversity on the team was no issue for me." P19:45 Case C

Contractor:

"He just did not do his job. At the end of the day, if a guy does his work, it (diversity) should not play any role. […] If someone does his work, then he does his work. You could just as well have had a Muslim woman doing my job even better than me. It does not matter who or what the individual is. […] I think that is the general attitude. We have moved on." P6:61 Case B

"Every person must be judged on their merit. If they are twenty and black or seventy and pink, it does not matter. He has a role to play on the project; he is appointed to do a certain job." P18:46 Case C

Client:

"I honestly don't think it has got anything to do with your race; it's got to do with what you know, your level of education, your technical abilities; so, if you've got that I don't care what you are.[…] The guy that is on the team that can perform. It doesn't matter what colour you are, as long as he can do his work. I do not think … you must just be able to perform your job." P12:155 Case B

"…you need to say your selection should be purely on ability for your company, and the performance. That's what we want. […] I definitely have no problem with the ability with somebody that is not white." P5:139 Case A

The feedback strongly reflects on the fact that if someone is technically competent and can fulfil their role and requirements, that the other role-players would be able to work with that person and drive towards positive outcomes. The inverse is also true, that if competence is lacking, the work relationships would not be operational and functioning towards positive outcomes. Performance in the appointed role seems to be an important starting point for this project environment. Links can automatically be seen between preceding codes reflecting on '*Technical competence/ability'* and '*Dependence on Others',* which combined, influence trust, and all the relationships.

5.4.1.3.2 Code 16: Industry shortcomings

In the responses below, the reader will pick up on the respondent's views on the shortcomings in connection with diversity in the industry. The responses note an almost apologetic stance and a hunger for something different. Specific quotes noted:

Consultants:

"There are the main role-players on the project, and they do bring in interns to try and train them up and get them more involved and experience that they require. I think in the back ground there is a lot going on and the production team of each role-player. They are pretty diverse when it comes to their internal relationships, bringing in disadvantaged people to train." P22:34 Case D

Contractor:

"I think in general it is an industry shortage we are trying to fill. Our industry still has a distance to go to get what is needed. […] It is mostly Afrikaans and English white males which are involved on the team. We are trying to bring in more (diverse people) as a company." P6:57 Case B

"Maybe we are not too diverse? It was interesting to have a female PM. This being different than the normal male fulfilling the role. […] The other parties weren't diverse. But that seems to be the environment that we are in. The majority being middle-aged white males that manage in terms of projects in relation to other races or culture. That seems to be the norm." P18:45 Case C

"I don't think it is a very diverse team to be honest with you. That is limiting our get together's, because I think everybody in this team is very much the same. I think they are all getting along well; for example, we all went out for lunch and got home at two in the morning. And there was no talk about work. So yes, I don't think it is very diverse, but we all do get along. We are all very much the same. It is all a group of professionals." P4:76 Case A

Client:

"If it happens to be predominantly white, so be it. That's what it is. To me, at the end of the day, you want a project to be built properly. It would be a fairy tale if we could have some proper representation of our country. It would be great. But we know the reality of it. […] There are guys out there that are just not in my space…not able to help. Just wish it was so." P5:139 Case A

"I think, in terms of diversity you've got everybody that comes from their selected fields or their professions; there is diversity in itself. In terms of background, I assume we are all more or less from the same sort of background..." P 12:152 Case B

In many of the interviews, the direction of the diversity response was race related. It almost seemed that the respondents drew a direct relation between a diverse group or team and the group being made up of different race groups. In many instances, respondents almost reacted in an apologetic way, when noting that a team was not diverse in relation to its racial make-up. The researcher felt a sense of sympathy and tolerance towards persons which are not from the same ethnic or cultural background. Role-players seemingly accept diversity as a national and industrial reality. Also found in the data was the acknowledgement that the industry represented by these cases is not very diverse, and in some responses, there is almost a longing for this change.

5.4.1.3.3 Summary of Feedback for Question 3

Table 14 shows the two codes identified during the analysis of the data for Question 3:

Table 14: Summary of codes for Question 3 (Researchers Construct, 2017)

Code No.	Codes
15	Technical competence trumps all
16	Industry shortcomings

Figure 18 indicates the codes identified for Question 3:
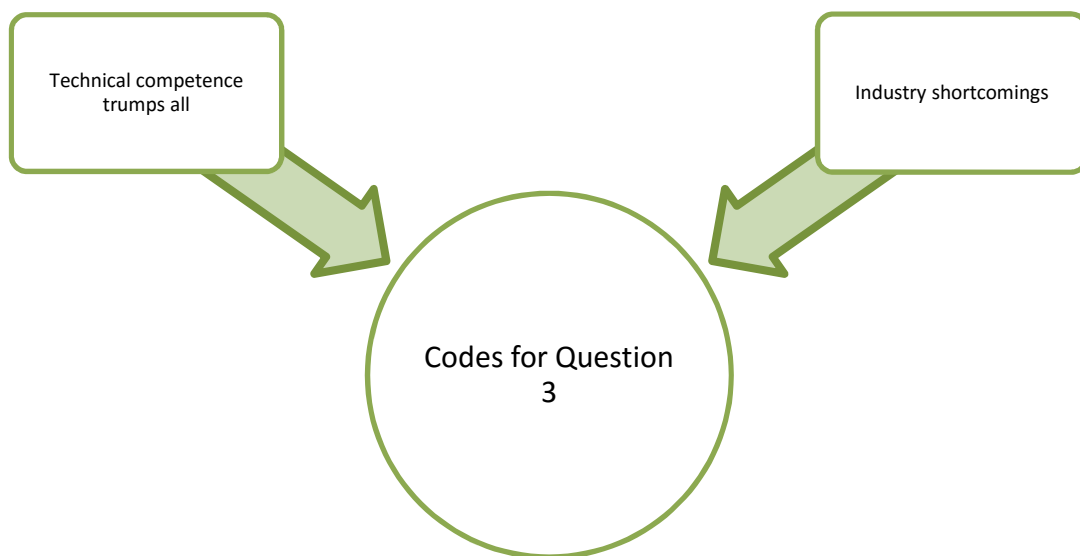
Figure 18: Question 3 – Codes (Researcher's Construct, 2017)

The role-player feedback for Question 3 was summarised, according to the code headings:

Code 15 – Technical competence trumps all:

Technical competence in relation to the acceptance of diversity in the team reflects that if a role-player is technically competent, others on the team would accept them.

Code 16 – Industry shortcomings:

The respondents are sympathetic and tolerant towards others from different ethnic or cultural backgrounds. The feedback notes an acceptance of diversity as a national and industrial reality; and some role-players long for a change the *status quo*.

5.4.2 Leadership/Management – Influence and Practice

5.4.2.1 Analysis and Results for Question 4

Question 4 solicited feedback on the perceptions of the participants on the influence and best practice of PMs in the construction-project environment. The questions for this section were:

Question 4:

Sub-Question 4a: What is the influence of the project manager on the role-players' performance?

Sub-Question 4b: What management and leadership practice would be needed to enable optimum role-player performance?

The questions were compiled in line with the literature in Section 2.4.

5.4.2.1.1 Code 17: Expectations of the PM

This code related to the broad, or general, and mostly high expectations, which the role-players have for the role of the PM. The following statements are exemplary of the expectations of the role-players:

Consultants:

"The PM doesn't get paid to do the minutes or having coffee every once in two weeks, because that's where the site meetings are. It is because he needs to take liability and responsibility for the whole team." P11:84 Case B

"Yes, if you had that person on your team, you [would] need them to go all out. […] Sort it out. You know, that is what you are here to do." P10:12 Case B

Contractors:

"At the end it of the day it does boil down to the PM […] at the end of the day the PM must sort it out." P20:20 Case D

"In my opinion, I would say it is the Project Manager. […] To get that end product successful as quickly as possible." P18:13 Case C

Clients:

"…a Project Manager must be somebody who can run a project and look after your interests, [and see] that everything is running smoothly." P12:173 Case B.

"The principal agent, or in the case of a principal consultant, I feel should make sure that everything is in place." P15:27 Case C

Many of the comments indicate a requirement for assistance and overall help on the project for a successful outcome. Some commentary indicates that PMs should make sure that "everything" is in place, or is operating well. The views are very broad and could be overstating the actual influence that a PM might have; but nevertheless, it is the expectation. Management being a broad term used in everyday business jargon seemingly leads operatives to have a varying understanding and expectation of a person who is in charge of managing a project.

Relating to the above high expectations and actual understanding of the burden carried by the PM, the respondents fulfilling the PM's role in the researched cases note the following:

"You have to be part of the team and at the end of the day deliver a good product. But as principal agent you have to sometimes step out of the circle and do your own thing and make sure that everything goes according to plan." P7:64 Case B

"Positivity, enthusiasm, enjoying the working environment and working with the team and efficiency. Doing what you are supposed to do when you must do it. No unnecessary delays with information when it is needed or when you have to put a report in. The expectations of a project like this are very high." P22:37 Case D

"I do think the principal agent plays a big role. Fortunately, I had the honour and privilege now, to be on the QRP project. And I developed a new respect for the PA." P16:17 Case C

Similar to the above commentary, the PM's seem to view their role as very much overarching and making sure "everything" is under control and working towards success.

The following codes presented in this section could be seen to identify some of the specifics or detail to which quotes refer when noting words like "everything", to indicate what PMs are expected to do on a project.

5.4.2.1.2 Code 18: PM – Role in motivation

In direct relation to a question in the interviews, this code reflects the tendencies and experience of the role-players on the manner in which they perceive that the PM tries to motivate or drive performance. Comments indicative of these motivating roles were:

Consultants:

> "I think they (project manager and client representative) just created an environment, where you wanted to work and wanted to deliver a good product. You somehow had automatic pride in what you are doing. There is a lot of project where you can't feel that. You kind of don't want to mess this up. That was my impression. I don't think there was anything they directly did, but it was a combination of just the way everything was managed. From the group, the relaxed time, the social, deadlines, costing and getting the program together. It just kind of worked." P2:72 Case A

> "His team is pretty relaxed. […] Maybe he uses a low key approach? […] I don't know what he will do if the guys don't do their work. At the moment, it is going well." P13:53 Case A

> "They (Project Managers) want things to run smoothly and correctly, on time and budget. So it does influence it (the project) quite a bit; and positively, as well. You know he pushes you to work better and get things done." P3:56 Case A

> "He must be a person who can coach them into delivering their best. That is so important." P14:33 Case C

PM Comment:

> "We are quite a closely knit team, and obviously my role is slightly different as a co-ordinator, keeping the enthusiasm going. I can't be negative all the time,

because it will be picked up by the team. And the flow becomes a hindrance."
P22:16 Case D

Contractors:

"My experience in the past is that the stronger the PM, the better job. If you have a weak PM, you battle. […] If he is not enforcing it, how can we?" P4:94 Case A

Client:

"I think being positive. […] Her attitude towards the contractors was positive. She wanted it to work, so she was able to bring the positivity out of the others." P 15:97 Case C

"I think he works a lot on goodwill. Fred is a very quiet operator, sort of a forceful guy." P5:151 Case A

Although most of the commentary stated that the PMs do motivate the role-players but no clear indication is given on what exactly the PMs do to motivate the team to perform well. Some comments indicate that it is definitely though, a combination of many things. Therefore, perhaps it is difficult for the role-players to isolate the one defining action or stance. The three mostly mentioned positive motivating influences were:

- The PMs attitude;
- The environment created; and,
- An inclination to follow the work example of the PM.

The final influence was more clearly defined in a sub-code.

5.4.2.1.2.1 Code 18a: PM motivates by example

For some respondents there was a link between the motivation experienced and the actual example of the work ethic should be presented by the PM. If the PM showed commitment and fervour towards the project work, he would be encouraging the other role-players to reach better or higher motivational levels. The example of hard work and dedication was highly regarded by the respondents.

Consultant:

"A Leader must be strong. […] And they've got to lead from the front." P14:33 Case C

"He can lead by example and motivate them." P3:68 Case A

"I think the biggest thing is to lead by example and not to lead by force. Anyone can be an ass. It is for me, and I lead by example, encouragement and inspiration. I don't crack the whip unless it is absolutely necessary." P21:61 Case D

PM commentary:

"I would say, go the extra mile that they can see you are doing more, go the extra mile…" P7:99 Case B

Contractor:

"The leadership is not there. You know it filters from the top down. If I am not prepared to put in the hours, how can I expect the others to? From Management point of view, your outlook and your attitude towards it, is of utmost importance." P4:47 Case A

Client:

"He is gentle and very precise. I think that gains him a lot of respect. And he delivers what he promises, quickly and on time. He is very good. […] And then he follows …so immediately you've got that …He sets the example. That gets you respect, he earns respect. When he asks [for] something to be done, he generally gets it." P5:151 Case A

Building from the link between the example set and the role-players being motivated through that action, one should also appreciate the identification of positive performance outcomes linked to communication, information flow and acceleration, when required. Even respect for the PM can be seen to grow, which could be connected to the actual work ethic of the PM; and finally, assisting the role-players, as well as trusting in their technical ability or competence.

5.4.2.1.3 Code 19: Giving or casting vision

Various participants indicated the need and desire for the PM to have the vision of the end-goal, or the interim requirements of each project phase. The PM is required to reflect on the overall picture; and to guide the team towards that outcome. These desires were best captured in the following examples of commentary:

Consultants:

> "A Leader should fully grasp and understand his vision for what the outcome needs to be. And then really understand that and then fully communicate it to his Team. So that he knows where he is going, but he is also able to tell everyone where they need to be. And continually remind them this is where we are going." P2:81 Case A

> "… it's an important role of yours …everybody is looking for your guidance and information. "P22:17 Case D

> "He is the important one that has to understand what the requirements are; and what we need to be able to do. That is important to know what the mechanisms are. Can you work on it, can you bring it down, can you this and can you that?" P25:21 Case D

> "…but there has to be someone who leads and says, listen here guys, if we get to this line, then we are all here and then we move forward." P17:9 Case C

Clients:

> "And that (project managers) I think assist with clarity to the team to understand what is expected from them. And then he follows up…" P5:151 Case A

5.4.2.1.4 Code 20: Project-Planning/Strategy

Commentary for this code relates mostly to the value and need expressed by the role-players in connection with the PM providing a strategy, a plan, or a framework within which the project would operate. This is a direction or pathway on which the PM directs the role-players to follow during the execution of the tasks during the various phases of a project.

Consultants:

"He (the project manager) compiled a book, Project Execution Plan. I mean, anyone that is on a project must read that. If you want to do this, this is how you do it. So there is a clear set of "this is how the project team needs to work". It has been good." P2:60 Case A

PM reflects on project strategy:

"I wrote a little booklet that we've handed out to everybody; it describes the whole project from project background to communication to all the timelines and whatever there is. And I think, also because everybody puts so much effort that it is not only minutes, but that the planning means something. It was accepted by the team, and I think in that regard I've influenced them." P24:27 Case A

Client:

"He set that whole thing up. The way he programmed and scheduled the stuff, it was done brilliantly…"P12:169 Case B

"When I look at a consultant group, I look at the leading party to drive and lead the people. {…} it is important that that guy handles the co-ordination of the team". P23:54 Case A

5.4.2.1.5 Code 21: Pro-Active actions

In this code, the emphasis is placed on the PM being pro-active. This involves identification and the resolution of those issues, which could be possible hindrances in the future. Figuratively speaking, this means rolling stones out of the other role-players' paths in an active manner. The role-player requirement is therefore that the PMs put the necessary energy into the identification of issues and resolution, before these become a hindrance. Reflections on these pro-active actions were noted as:

Consultants:

"At some stage to say 'okay this is not coming off, let's see what is causing the problem'. […] And for me, the Project Manager must be able to foresee 'there is something coming', and he must sort it out." P21:67 Case D

"This is not a treadmill, on which you just run forward. I always tell people, that you have to be pro-active. If you are done with the current, then look around

and see if there is anything else. If you are the manager that is what you should be doing." P8:29 Case B

"…they would remind us very tactfully that we have a meeting next week, and this is what you've got to do and present. They were pro-active in that regard." P14:36 Case C

"One, if you are the PM and you think there are issues, then deal with them. Don't watch the car crash and then point a finger. In the end, you are the PM and if you think something needs to be done, then steer it in the right direction and jump on it." P11:71/72 Case B

"…the PM should be asking the right questions to the Client to make it streamlined. Half the battle is won with the right communication in the building industry." P10:14 Case B

PM comment:

"They can see that he is pro-active and adds value to the team, that he is a people's person, and that he is only human at the end of the day, how he handles the team and shows them that he is there for them" P7:99 Case B

"I think it is important for people to be proactive from meeting to meeting. And the PA must just give them that extra push." P16:19 Case C

Contractors:

"…to identify what the team's strengths and weaknesses are. And to use this optimally. And where there are shortcomings, to help to take it forward successfully." P18:54 Case C

Clients:

"You've got to have the early warning systems in. He should be involved with that all the time, looking out for it. And watching the program and warning you as to potential problems…cash flows, things are coming, reporting, things are good, warnings about potential problems." P5:148 Case A

"If he knows what is going on, and if he is controlling everything that is happening there should not be any issues. Long before something is becoming an issue,

just flag it; say it is coming up; and just bear it in mind. To be pro-active how you manage everybody." P12:181 Case B

A lot of the expectations hinge on the PM having the background and capability to fulfil the need for the pro-active actions. Firm links could also be identified with the communication by the PM; and how and when this should take place. Similar to the commentary on the code "Expectations of the PM", the requirements from the role-players were very broad and undefined. All of which makes the fulfilment of the need to be pro-active, so much more difficult.

5.4.2.1.6 Code 22: Staying focused on the project

This code shows the need and actions to be taken for role-players to keep in contact and be engaged with the current project requirements. The PM, in many instances, was indicated as the person on the project who is required to constantly keep role-players focused on the task at hand; and also for them to stay focused for the duration of the project. The needs and actions are apparent in the following commentary:

Consultants:

"I think communication. Speak to people and keep them on their toes you know. And someone might feel that I need to get it done before he asks me again. It is not about catching someone out, it is exactly the opposite of what you should do. I would find out from the other how long they will still take. Things like that. In a pleasant way. The project then stays in the back of their mind, even if they aren't working on it, they are still thinking of it." P8:57 Case B

"I expect to get a phone call at least twice a week. Sometimes emails are very vague and they don't always come across." P10:12 Case B

"That is basically what it is about, to facilitate. To the degree where you actually tell the guy, not spoon feed, but when he leaves he knows this is what I need to do before then. I think everyone can manage their own time, but if this guy is shouting harder from this side, then you grab everything!" P21:63 Case D

Contractor:

"He is always available. He checks in with me daily to make sure that everything is running smoothly; and that I don't require anything. The strength of your PM is critical." P4:98

Client comments:

"…focus and a positive attitude towards the project. If a guy does not respond, if he is late at the meetings, or comes unprepared […] a person then loses time, momentum and rhythm. So I would say focus." P 15:109 Case C

"You must sit with the RFI (Request for Information) schedule and prompting the guys, where are we? A constant feedback with the clients…" P12:173 Case B

An important action of the PM, is the way in which they constantly keep the team focused on the current, or upcoming tasks, or deadlines. This section does not talk to the overall vision of the project, but more to the day-to-day operation and keeping the role-players' energy; and application focused on achieving the planned tasks. Some feedback also indicates that the manner in which the communication takes place, to keep the role-players' focused, is important; and that this process in the end assists with keeping the positive momentum on a project going.

5.4.2.1.7 Code 23: Information gathering by the PM

The respondents noted a specific requirement from the PM to ensure and assist information flow during the project. The required information would then assist each role-player with the fulfilment of his/her duties and responsibilities. Quotes which correlate with the above code description and explanation were:

Consultants:

"The only thing I expect from the PM is in terms of timely performance from the others in the team. He should be fully aware what information he required, what time and to drive that process." P1:46 Case A

"If there is strong leadership, you know what they want and you make sure you provide it. If you don't, then you know you're falling short. If you don't have it, it can lead to things deteriorating; perhaps not being done, as well as they

should be. Strong leadership puts demands there. […] It does help for contracts to run smoothly." P25:44 Case D

"Where we were frustrated…The schedules that were issued before tender, in order to get the tender document done, that is what we wanted. One…that shouldn't have come from us, it should have been from him. He should have said "QS when do you want to do xyz and we will say x", when do you need this, and when do you need that." P11:75 Case B

"…it can all fall apart if your information is not getting through to the right place at the right time. They've (project managers) got to manage it at the end of the day." P9:56 Case B

PM comments:

"If the phone rings, for instance Garry, if he wants something, the information, he wants it now. The clients want a direct line of communication, and sort this out; and do this and that. He doesn't want to phone the architect or whoever, rather he phones the PM." P22:17 Case D

"… but if there is, for example, an issue where a contractor or consultant is frustrated, for whatever reason…maybe information issues amongst the team, then I will try, it's the responsibility of the PM to talk to the person and to help where necessary." P24:30 Case A

Contractors:

"Once I'm waiting for information, then I think it will have a direct impact. Obviously as a PM, I will be getting him involved, in terms of putting the hammer down on the Professional team." P4:90 Case A

"I must say, whenever there is a critical item I need clarity on, then he gave his advice, or he started pushing the right buttons. As soon as we showed the red flag, the answers came." P6:63 Case B

Client:

"They aren't really playing the role they should be. […] the principal agent which acts on our behalf. Many of them do not take up that role. I have to constantly ask and reprimand in relation to why we are waiting for this information" P15:21 Case C

> *"Reporting is incredibly important. That monthly report you get from your Project Manager, he puts it together in an easy understandable way, it reflects and red flags." P5:148 Case A*

Each role-player is seemingly a giver and taker of information. If the right interaction takes place, the role-player would then be able to give and assist with information provision; and so this cycle is generated over and over again. Therefore, the apprehension from the team is apparent when the information is not provided and they cannot add value and give back information. Then the overall cycle is interrupted. It is in these situations where the cycle of interaction is not as desired that the role-players expect assistance from the PM. The PM is required to untie the knots and to free up the flow of information to the required level. In a sense, the PM becomes the facilitator of transactions, which involve information exchange, especially when there are bottlenecks.

It can also be seen that the role-players perceive information and the flow thereof with great urgency; and that this information-gathering role of a PM is important.

The possible links with other codes can reflect on the impact on team cohesion if such information bottlenecks are not resolved; and this then clearly indicates the interdependence of the role-players.

5.4.2.1.8 Code 24: PM Software

The incorporation and use of software by the PM as a tool for information distribution and general communication on the project was noted. The code alludes to the positive commentary received on the assistance perceived by the role-players when using the software. Exemplary feedback indicated the following:

Consultants:

> *"The project manager brought in something that was new for me. It is a program QRT software application, which is a project communication website. I found it incredibly helpful. It was nice to learn something new." P13:8 Case B*

> *"It is where you are communicating with everyone on QRT software application, everyone knows what is going on, on a day-to-day basis. You can go back and hunt for certain information, to try and back you up in an event; if something*

happened in the past. There is no lee-way to not accept responsibility, because there is a trail." P1:38 Case A

"Yes, it is a record, it is available for everybody; and you can't hide away from it. If you take the photograph, they can't say that you were not on site; they might say it was Wednesday, that is the time I was there. And it works." P9:63 Case B

Contractor:

"I'm involved on a daily basis. Like I say with KLM software, you are permanently involved. Everybody that is in that bin is involved in it. What is very nice here, from an Architect to Engineer, on a continual basis, everybody is involving us as a Contractor, as well." P4:34 Case A

Client:

"You actually go to XYZ Software on line and you will see it under Project. You will see the issues that are open and who's created them. Once they've been approved, whether by the Eng. or Architect, they need to close it. […] You know exactly who took it, what comments were made; and it is there for dispute and there for reference. No, I am very excited to see how that thing pans out. I've used it on my project lately; and it does work well." P 5:38 Case A

Over and above the obvious links with the information flow and communication, the software makes many of the processes transparent; and it assists with the building of trust and cohesion between the role-players. The role-players also indicate excitement at the use of new technology and the acquisition of new knowledge and expertise.

5.4.2.1.9 Code 25: PM – Adding no value

In line with the initially mentioned high expectations directed at the PM's role, a specific code was created to note the circumstances, which indicate that no or little perceived value was added. The comments for these failures stated the following:

Consultants:

"I think at the end of the day, their fee is actually the highest, and I am thinking, what value was added?" P8:26 Case B

"Many of the functions of the Project Manager are not only to delegate, but to do some of the work. To add value on some of the items. A lot of the frustration is that they only shift stuff around. You have to pick up the phone and organise it..." P21:60 Case D

"…but by having a dedicated PM, you know we are also PM's, the project should be running smoother, and in this instance, it has been tough hey. I'm not bringing them down, but from the client's point of view, to be paying 20% fees, and not getting that back?" P11:23 Case B

PM confirmation of consultant comments:

"…they look at you and say "what are you doing". Well, I am the PM. I find it difficult to explain what it is that I do. Often you are perceived to be the guy that writes the minutes, and always shout at them via emails, if they are late with something." P24:15 Case A

Contractors:

"It is positive to have a PM involved, barring that he is involved on site and that he knows what is going on".P20:72 Case D

"Question: But did he (the project manager) do anything, which influenced you positively or negatively?

Answer: No. I was not influenced much." P6:62 Case B

Clients:

"I must be honest now; I do not see the role of a project manager anymore. Raymond and I have discussed this and we are going to change the things on the way forward. […] There is no hands-on, no information, no value added." P12:55 Case B

"Question: So you are paying almost two million rand to somebody to take the meetings' minutes?

Answer: It is almost what it boils down to. That's why I mentioned earlier; I don't see the value in the project manager as it is." P12:170 Case B

From the above, the reader can sense the dissent towards someone not performing their duties, and even more so in the following circumstances:

- Firstly, when that person is the leader of a group of professionally qualified and well-experienced individuals; and

- Secondly, when that person's fee is a substantial portion of a project's budget.

5.4.2.1.10   Code 26: PM – Incompetence

Over and above the mentioned issues with a PM not adding value, the following commentary shows some scathing comments aimed at the competence of the PMs appointed. The incompetence of the PM influences the role-players negatively; and the role-players almost feel aggrieved by this. Specific commentary related to the incompetence indicates:

Consultants:

"With the project manager not always the most experienced person I've worked with. Not understanding the technologies of the industry. The project manager should be more understanding of the services, understand the logistics of the project, mechanical, structural, civil, building and management at the end of the day. It is difficult, that is coming from experience, and you can't learn that in books." P9:20 Case B

"…he comes across as not being sure of his facts, which is not a good thing. We will start talking; and he will mumble, as if he does not want to say something out loud. "Lest now I say something stupid, which they will hear"... […] You have to be able to talk with authority and self-confidence. If somebody asks you a question, you cannot uhmmm and aaaahhh." P8:54 Case B

Contractor:

"…you would copy him (project manager) in on emails and he would then comment, but he had no clue on what was happening. That makes it very difficult. […] Maybe he just did not have the experience to be able to understand." P20:70 Case D

"We therefore did not have very strong leadership on our project, because respect for the leadership was lacking. There was no one we could identify and say yes you have the expertise and skill and what you say makes sense." P18:48 Case C

Client:

"I can give you an example of an Architect (acting as PA) on a current project who does not have a clue of putting a contractor on terms. He does not even know that a contract instruction, which is not actioned can lead to termination. They cannot handle the administration. It is a problem for me." P23:56 Case D

Interesting observation by a client:

"I saw a few shortcomings on his (the project managers) contract administration. Although he has since made massive progress in this regard, I could see it. And you know what I appreciated it? He went to Henry (the project Quantity Surveyor). We aren't all experts, we are mostly generalists. We know a bit about everything. You cannot be a specialist in everything." P23:60 Case D

As highlighted under the previous code heading (Section 5.3.1.1.2), dealing with technical ability and competence, the teams rate this requirement highly; and it is a necessity. Therefore, the PM is not exempt from this requirement; and it can almost be argued that the bar is even slightly raised for the person, who stands to manage and lead these role-player groups.

The researcher also reflected on the fact that much of the commentary on incompetence levelled at the PMs is probably linked to the ideas already touched on in previous codes. These mentioned ideas being:

- Giving or casting vision;
- Having a proper project plan or strategy;
- Being pro-active;
- Keeping the role-players focused; and,
- Assisting with the information gathering.

5.4.2.1.10.1 Code 26a: Circumvent incompetence

Related and influenced by the "PM – Incompetence" code, a sub-code was created with commentary, which indicates a natural movement of team members to circumvent the incompetence; and almost to create informal lines of communication and direct lines with the required role-players. The process almost seems natural for role-players

still seeking to perform and drive towards success. All of the commentary relates to Case B.

Consultant:

> *"The meeting's purpose was for something else, and in the end we actually resolved a lot of issues. The change of trusses, we did not even tell him (project manager) about it. We thought we would resolve it and rather not tell him. It will take me ages to explain it to him." P8:22 Case B*

Client:

> *"I've got the architects; they emailed me the drawings last night. I marked the drawings and sent them back; I did not copy the project manager into it. It could just delay the project. I just go and highlight things, so I am still very involved, but partially as an inactive project manager. A lot of my time goes into this project, it is a bit of a barrier; because I can't focus on anything 100%..." P12:74 Case B*

To just indicate the level of incompetence and/or ignorance discussed by the role-players, the following is noted from the same case, with the PM expressing his views on relationships within the team:

> *"I work well with all of them. The architects, no problem, I work really well with them, Frank and them… The QS also, although they have their peculiar way of doing things." 7:47 Case B*

To see the three mentioned quotations reflecting on the same case and context indicates many failures. One possible failure is that the PM is either oblivious of his functioning and performance, which in a sense could reflect on a lack of emotional intelligence to misread a situation, as expressed above.

5.4.2.1.11 Summary of Feedback for Question 4

The role-players feedback noting the influence and best practice of PMs in the construction-project environment converged on the following concepts, which were grouped as codes and sub-codes in Table 15:

Table 15: Summary of codes for Question 4 (Researcher's Construct, 2017)

Code No.	Codes with related Sub-codes
17	**Expectations of the PM**
18	**PM – Role in motivating the role-players**
18a	PMs motivate by example
19	**Giving or casting vision**
20	**Project Planning/Strategy**
21	**Pro-active actions**
22	**Staying focused on the project**
23	**Information gathering by the PM**
24	**PM Software**
25	**PM– Adding no value**
26	**PM - Incompetence**
26a	Circumvent incompetence

Figure 19 indicates the ten codes related to the analysis of the data for Question 4:
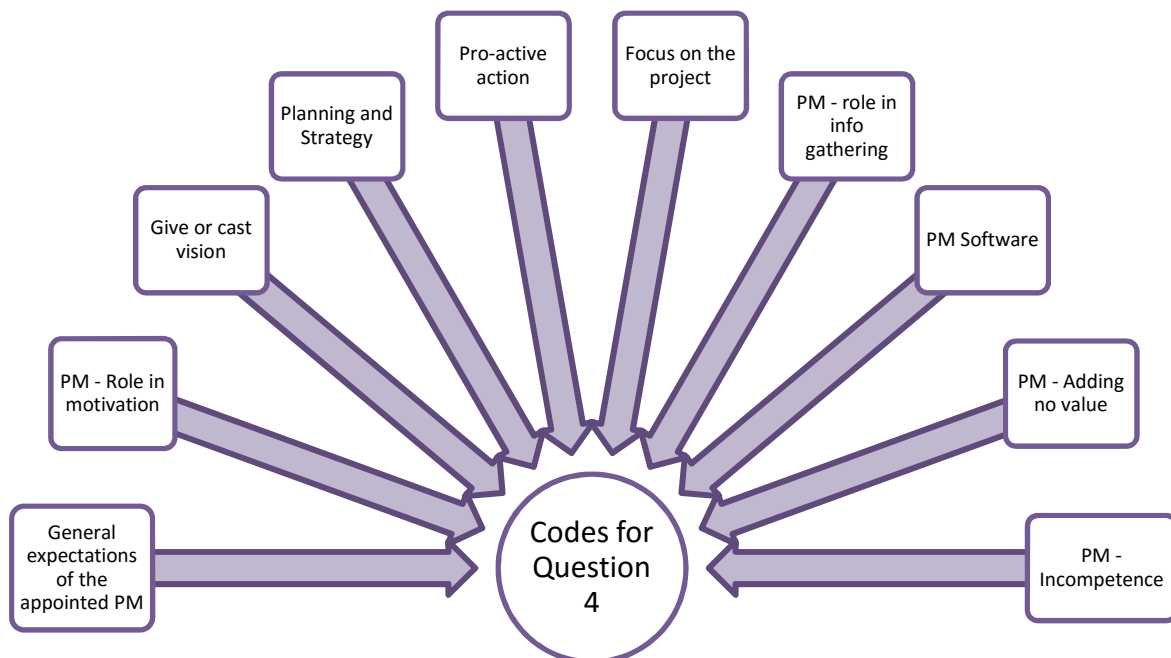
Figure 19: Question 4 – Codes (Researcher's Construct, 2017)

Code 17 – General Expectations of the appointed PM

The role-players expressed both general and high expectations towards the PM. Some expectations reflect on the need for assistance in achieving success. The generality of expectations is highlighted by statements using words like "everything" being in place, or operating well.

In line with the high and undefined expectations, PMs seem to view their role as an overarching one; and one of making sure that "everything" is under control and working towards success.

Code 18 – The PM's role in motivating the role-players

PMs motivate the role-players. Although no clear indication is given on the specific manner of motivation by the PMs, some comments indicate that it is a combination of various things. Three influences were identified:

- Attitude;

- The environment created; and,

- The work example set by the PM.

There seem to be links between the motivation of the role-players and the work ethic of the PM. The commitment of the PM encouraged the role-players to reach higher levels of motivation and performance, assisting proper communication and information flow. Direct influence can also be appreciated for the respect and trust gained in the PM's technical ability or competence.

Code 19 – Giving or casting vision

Role-players look to the PM for vision. PMs should have the ability to reflect on the overall picture and then assist/guide the team towards the future outcome.

Code 20 – Project Planning/Strategy by the PM

Role-players both value and need the PM to provide a strategy, plan or framework for directing the role-players to successfully execute their tasks during the project life cycle.

Code 21 – Pro-Active action by the PM

PMs are required to exert the necessary energy to firstly identify and secondly resolve issues, before they become a hindrance. These pro-active actions hinge on the PM's background and ability. Communication of the pro-active views and actions of the PM is important; but as with some of the other codes, the requirements from the role-players are very broad and undefined, which makes the fulfilment of these need difficult.

Code 22 – Staying focused on the project

For proper performance to take place, the role-players should stay in contact and be engaged with the project. The PM was indicated as the party expected to maintain the role-players' energy and application focused on the achievement of short- and long-term project goals. The manner of communicating the focus is important; since it assists with the conservation of positive project momentum (PPM).

Code 23 – Information gathering by the PM

PMs are required to ensure and assist the flow of project information. The required information assists role-players with the fulfilment of their project duties and responsibilities. The PM acts as a facilitator in these urgent information transactions; and he is required to unblock any bottlenecks. Possible impact and links with this code can be seen with the creation of team cohesion and the interdependence of role-players.

Code 24 – PM software

The code alludes to the positive commentary received on the assistance of software as a tool for information distribution and general communication on the project. The use of software made many processes transparent, which built trust and team cohesion. The introduction of such useful software also gave the role-players the chance to enrich themselves with new technical expertise.

Code 25 – PM – Adding no value

With high expectations, there comes a lot of responsibility. In these cases, PMs are required to add value; because they are leading the group of role-players; and they are paid a substantial amount to fulfil these duties. If no or little

perceived value is added, dissent sets in. Negative effects can be argued in relation to many of the team dynamics (communication, trust and cohesion).

Code 26 – PM – Incompetence

Role-players rate and value technical ability and competence highly. The PMs are not exempt from this requirement; and they could be seen to be even more harshly judged. The incompetence levelled at the PMs could be linked to the following issues:

- Giving or casting vision;
- Project planning and strategy;
- Being pro-active;
- Keeping the role-players focused; and
- Information gathering.

Commentary also indicates that team members naturally circumvent the perceived incompetence and create informal, or direct lines, of communication with the required role-players, in order to still be able to interact, perform and drive towards success.

5.4.3 Performance – Drivers, Motivators and Barriers

5.4.3.1 Analysis and Results for Question 5

Question 5 investigated the general views on what actually drives, motivates or inhibits (barriers) performance in the construction-project environment. The investigative questions for this section noted:

Question 5:

Sub-Question 5a: What are the performance barriers experienced by role-players?

Sub-Question 5b: What drives role-players to perform?

Sub-Question 5c: What motivates role-players to perform?

These questions were derived from the literature review, Section 2.5.

5.4.3.1.1 Code 27: Budget

Connected to drivers, motivators and barriers to performance on projects, the role-players noted that the impact of the financial or budgetary issues, which surround projects definitely have an influence. The influence was defined in the following three sub-codes:

- Limited amount;

- Creating the highest value; and,

- Non-payment.

5.4.3.1.1.1 Code 27a: Budget – Limited amount

The perceptions which gave rise to this code, noted a definite understanding that the client has a limited fixed amount for the execution of a project. In some cases, this amount was almost revered and handled with the utmost respect. In some instances a sense of pure fear of over expenditure was noted. The respondents found that the budget could be a performance constraint in relation to a more complete or better end-product. The major frustration came from the architects in the group, who found it difficult to remove certain elements from the design, in order to ensure budgetary compliance. The first three comments in the consultants section came from architects. The architects seem to be the self-appointed custodians of the image or aesthetics of buildings. The battle between what the respondents want and what can be afforded is shown. The responses for the code noted the following:

Consultants:

"We had to let go of many of the niceties that we won the competition with, and then you have to compromise." P 3a:8 Case A

"There is a bit of negativity there, because you have to look at saving money sometimes. Changing your detail, not to what you had in mind." P3b:57 Case A

"The project has taken too many cuts that it is difficult to stay motivated," P 10:4 Case B

"I feel as QS you are in a bad light; because it is the costing that is affecting it. Having to recommend that XYZ be done and it might not be to their favour, or

anybody's favour. And it is not like we are looking to stuff up anyone's concept. Not only is it affecting the architect, but the end user. Darren was going to be given this, now he is getting that…for the same money." P11:31 Case B

Contractors:

"I played open cards with them. But it is definitely going to have an effect on the final account. It is going to take a knock, because where is that money going to come from?" P4:89 Case A

Clients:

"Obviously, the budget constraint is not nice; at the end of the day we've almost got to compromise the project; the final building based on budget, there is no room to move. We are so governed in terms of that." P12:106 Case B

"Buildings cannot be a fixed price. You can't allow cost 100%. You can't put the budget and say they must meet it. It is not quite fair. There are too many things that can happen, your time, escalation and you've got to give some sort of …..We carry our contingency, and try to bring it in, but it becomes very tough. Especially, if the project runs two years on, from when the budget was done." P5:78 Case A

The architect respondents expressed disgust at the limit to the amount of budget allowed. In a sense, one could argue that it could lead to apathy towards the end product and the project outcomes. Other disciplines also found that their input influences this feeling of despair, with requests to exclude elements, which were previously part of the design. The budgetary constraints influence the team cohesion by straining relationships between the role-players.

5.4.3.1.1.2 Code 27b: Budget – Creating the highest value

This code relates to the preference of consultants to work towards and take up the challenge of creating value for a client within a limited budget. In a sense to make the amount allowed for the project, work as hard as possible, and to create as much value as possible within the contractual and physical boundaries of the project. Some of the most noticeable quotes were:

Consultants:

> *"I think motivation comes from how well that project is executed; and architecturally you've got to budget to actually do something" P10:2 Case B*

> *"Our budget is X, electrical has to be this amount and everyone was pushed. So his sub-contractors, he had to chat to all of them, and say can you do it for this? What can we do there?" P 2:9 Case A*

> *"If it was in budget, we could have hit the ground sooner and the client could have saved on 4-5 months escalation cost." P 1:23 Case A*

5.4.3.1.1.3 Code 27c: Budget – Non Payment

Non-payment was mentioned as a definite performance inhibitor. In instances of possible non-payment, the respondents noted a tension build up. In most of the cases, it seems that some resolution was found, or the clients decided to pay the aggrieved party. In these cases, therefore, the code highlights the potential of non-payment, rather than reflecting on an actual occurrence. Commentary related to this sub-code reflected the following:

Contractor:

> *"We are used to working slower, so there where periods… but before the legal process was started, the payment would come through. But it was only with one or two payments. It wasn't a massive problem. We have been through it in the past, closing a site due to non-payment. Everything you have to go through, what a process…" P 20:9 Case D*

Client:

> *"When it comes to payment, and I cannot pay people, and the organisation is not supportive in that regards, it really impacts me." P 23:50 Case D*

> *"… if you sit at a table and talk to people and push to finish a project, you expect them to do, and if they don't get paid, in the end, it is not the same language that you speak. This way you can say, we pay on time, so do your job. It does make a difference." P5:113 Case A*

5.4.3.1.2 Code 28: Client

Clients are an integral and necessary part of each project. The commentary relates to the various roles that the client plays; and a decision was made to concentrate on all the different parts of the roles and influences. These roles and influences were captured in sub-codes under the following headings:

- Focus on the client as the provider of work;

- First-time client;

- Negate client risk;

- Feedback/Recognition;

- Intentional client focus;

- Meet expectations;

- Exceed expectations or needs; and

- Holistic long-term solutions/needs.

5.4.3.1.2.1 Code 28a: Client – Focus on the client, as the provider of work

The particulars related to this sub-code, note the necessity for work and clearly showing an acute understanding that clients are the source of work, which would drive income provision and wealth creation. Without the client, the respondents note that there is no way forward. Consultants/Contractors are dependent on the client for work and future appointments. Prominent quotes for this code stated:

Consultants:

> *"Put that in your head that the client pays your salary not your boss. If you are working for XYZ Company, XYZ Company does not pay your salary. It is good mentally, to realise that, the client is paying your salary; you will treat that client with that respect." P9:37 Case B*

> *"It will be worth your time to be there for future projects. So, it is drilled in, quite a lot, that you pay a lot of attention to your clients." P2:49 Case A*

> *"If I lose the trust of the Client organisation, and I would lose it on all the projects here, but this is in return one of my biggest legs (financial/business) to stand on." P24:21 Case A*

"That is where your success is coming from. If ultimately you've done that job, you've done it well, it leads to more. That is recognition of it, it's like hang on, I would like to use them; they are doing a good job." P25:3 Case D

Contractors:

"I don't know what the pressure situation is, but I am assuming this is an important client for them. So, there could have been a lot of pressure from his firm." P18:43 Case C

Clients:

"…they are not doing themselves any favours by the way they are running the site. Amongst the other consultants, they are not happy with their interaction with the engineers; the engineers are really not doing themselves a lot of favours." P12:138 Case B

"I told them they are inward focused. […] business is inward focused. And it is just about profit." P23:17 Case D

5.4.3.1.2.2 Code 28b: Client – First-time client

With this "First-time client" sub-code, a strong sense of impression was felt. The respondents wanted to make sure that the first project or work that they undertook would impress the client enough to ensure follow-on or re-appointment. The consultants and contractors want to build relations, which could then lead to future work or appointments. These relations would then be based on good or sufficiently impressive work, which would gain favour from a client. Pertinent quotes for this code stated:

Consultants:

"Well I am motivated because it is the first client project for us, so it is the first institutional project for us, together with ABC Company. That on its own is a motivation to add that project to our portfolio. And at the end of the day, you want to see a good project come out of it." P 10:3 Case B

"They played open cards with us, and said that they would like to get in with the client, because this is the first really big project with the client so far" P7:9 Case B

"The architects are young and try to make a name for themselves. And they've got that spirit to go and do something properly. They want to design the best building. I don't know if this was the signature building for them, where they could say it was one of their first buildings or whatever." P11:68 Case B

Contractors:

"For me, it was very motivational, because for me it was a new team. […] and the client was new for us" P6:12 Case B

Clients:

"So far I've got a very good feeling from the contractor, they are trying hard. We still have some issues, but nothing major at this stage yet, […] it is still a bit early; but at this stage we've still got the buy-in, they are not giving us anything yet – not that they are not rolling over; but they are there to impress. Like I said it is their first project" P12:77 Case B

5.4.3.1.2.3 Code 28c: Client – Negate Client risk (Financial/Contractual)

As the sub-code title describes, it relates to limiting them or minimising the risk, to which the client might be subjected. This sense of "looking out for" the client is seen and experienced by the researcher as a sincere worry for the client; but it is also a tool to impress the client. The role-players want to make the clients aware that they were kept adversity free; or their exposure to risk was kept to a minimum. In general, the consultant feedback related to financial and contractual risk. Quotes for this code noted the following:

Consultants:

"…you had to think outside the box, how you are going to procure this for the client with unknown set of rules and also exposing the client to minimal risk? It was very exciting to be part of it, and it still is." P1:33 Case A

"…you've got to make sure that you get the correct information into your documentation. Because you don't want to expose your client." P25:5 Case D

"Just make sure the communication is open and there; and you've let the client know what the risks are during that design period. You've flagged it. The client

is aware, if you make that decision that is the consequences, then that is the risk or no risk." P9:30 Case B

"The important thing is, from the clients perspective, is the budget and finances. You have to ensure that you have a reliable QS that is monitoring the project on a daily basis ..." P 22:27 Case A

Clients:

"You get some smart people around. You need to ….In the environment of tendering and that…you are running risk. It is high risk." P5:57

5.4.3.1.2.4 Code 28d: Client – Feedback/Recognition

The respondents noted that the feedback from the clients seems to ignite and invigorate the contractors and the consultants. This client feedback, be it positive, or negative, also appears to breed further individual satisfaction needs; therefore, higher levels of performance or correction of low levels of performance is the outcome. Noticeable quotes, which enforce this code were:

Consultants:

"…he will just say "listen I really enjoy working with you", and I've used some of your reports as templates for other consultants. I hope it is okay, because it is excellent. You get that and I'm sure he said that to other consultants, it pushes you to do well." P2:78 Case A

"So that is what we do. We try to do the best that we can. And I think the ABC organisation also respects the design that won, especially Jon Doe (client representative)." P3:2 Cases A

"Because by doing that, you are achieving something for your client, and hopefully you get recognition for it." P25:3 Case D

"I would send them an email and say I would like to remind you to have this done before the meeting. And I would hate to sit in the meeting and report to the client that it hasn't been resolved. It was always for the sake of the client". P16:45 Case C

"At the end of the day, if I send out our client survey and get a good reference, maybe I saved him a million rand? Then he will come knocking again, and that is what I strive for." P 7:15 Case B

Possible links can be identified with the sub-code "*Personal – Valued and Recognition of my input*", which reflects on the need for others to value and recognise the individual's input.

Positive feedback from the client also reflects on a trust in the individual; and it could be the start of a trust-based relationship. This confirms to the role-players that the client has trust in their ability.

5.4.3.1.2.5 Code 28e: Client – Intentional client focus

From the participant's feedback, it could be recognised that the focus on the client is not only intentional, but it is a visible or perceived action. The action is intentional and the outcome is possible recognition for meeting the client's needs/wants. Positive client feedback could then mean that future possibilities exist for appointments; and for the satisfaction of personal goals, which is reinforced by the client's perception of the role-player's action. Prominent quotes for the code included the following:

Consultants:

"… at the end of the day I want to see a good building standing there, and I also want the client to see that I have their best interests at heart. I think that is very important." P 8:3 Case B

"At the end of the day, you are looking after somebody else's investment and money. So you produce the best that you can. So you want to be seen as someone doing the job, and doing it well." P25:3 Case D

"Naturally, if you could add value, say you made a difference or impacted a decision, or the client can see there were questions asked – there was tension and you came in and resolved it…" P7:54 Case B

"As a professional team, you don't want to look like you are not performing." P16:45 Case C

Clients:

"I am the client; I am the one he is supposed to impress …" P12:166

"One phone call and they are here. There is no ducking and diving. […] They engaged in a very, very positive way. That was impressive to me, I haven't seen that before." P 5:125

"You know when you're not getting anything, something is wrong. If you ask for something, they don't respond. As a client I will do a test, and ask consultant can I have, a whatever, and see how long it takes. If it doesn't come within 24/48 hours, then there is an issue, because they are not caring you know. And we are not getting that." P 5:155 Case A

"The client sees it. And what ends up on his desk? Your certificate and the meeting minutes. Those things must be perfect. […] I am sorry to say, but there are very few professionals who can still handle the administrative work correctly. And that is what the client sees at the end of the day." P23:15

5.4.3.1.2.6 Code 28f: Client – Meet Expectations

Some respondents are simply driven by what the clients want. They want to align what is given or produced exactly, with what the client asked for. In a sense thereby defining client satisfaction as meeting the client's stated requirements for the design or end-product, with precision. Quotes for the code and given comments were:

Consultants:

"I think I was motivated by what the client wanted at the end of the day" P 1:4 Case A

"Well, when you see what has been completed, you know a good job has been done to produce a final product that is satisfactory and of high standards and the client is happy to take over." P22:9 Case D

"For me it is more about satisfaction, that the client is happy. That he is happy with the end-product, that the building is functional, within the budget and that it works." P 7:15 Case B

"You must give the client what he asked, you can't just drop the client. You must know what their expectations are. Especially with this client. You've got to give it to them. Whatever it takes to get there, you must get there" P 9:43 Case B

"So I think as a group we performed very well on the project. Professionally. We've had our ups and downs and we do lock horns with the client, on certain issues. But we are working for the client and we have to do our best to satisfy the client's needs, whatever it might be" P22:15 Case D

"Yes, what motivates me is also that you are handing over to a client, so you want to be happy with the quality that you are handing over to your client." P16:3 Case C

Contractors:

"Even given the circumstances and conditions, I want to hand over a good quality building in a reasonable time frame.   Again, considering all the outside influences and that, I want to give over a good quality building." P4:16

"For me, the motivation is to give the client a good product […] So for me, the motivation was to give them a quality product at the end of the day." P6:14

"You naturally get appointed with certain expectations on the project and finish on time, and in the process make the client happy." P18:36 C

The above-mentioned commentary aligns itself with the traditional ways of thinking in terms of performance and the measurement thereof. The focus on the narrow barriers and the doctrine of working towards completion within time, quality and budget is clearly seen.

5.4.3.1.2.7 Code 28g: Client – Exceed expectations or needs

Some role-players are driven by the provision of solutions, which they perceive to be the client's actual needs, over and above what the client initially indicated they wanted from the project or design. This action is taken to overwhelm, delight and give more than is expected to the clients.

Consultants:

> *"Especially, if you sit with the client and they want a flat ceiling, and you see it is not the best solution. So you can now do something which they were against in the beginning, and they can actually use it in the future. That's nice." P8:37 Case B*

> *"…people might say that it works or doesn't work; but in general we say, we love it. For me it is all about alternatives. It is about physical spaces, and it functioning obviously, but if something is only functional, that is just not good enough." P21:1 Case B*

> *"You are a team and you're working in an environment, where you are working towards a common goal. To have a happy client and to have a project that is world class." P22:45 Case D*

Clients:

> *"I think some consultants feel the client is important and they follow only the client's instructions. And I think that is maybe ownership, because he is looking after the clients' interests. But he is not adding value. They just do the absolute minimum. They don't look where they can save the client money or give a better product. That worries me. Even contractors added value in the past, but that has died a slow death." P23:7 Case D*

> *"What I like is when I am wrong, that the consultant will tell me that he doesn't agree; and in their professional opinion, it should be done this or that way. I want that. I don't want someone just to accept everything I say." P15:84 Case C*

Comments from the clients note expectancy, and the need for a higher level of service, and clients almost indicating that this should be the standard.

5.4.3.1.2.8 Code 28h: Client – Holistic long-term solutions/needs

In this sub-code, the respondents indicate their views on a broader set of needs and even looking at the future users or occupants of the buildings. It was perceived that the role-players wanted to take into account the future long-term satisfaction of the client's needs and to give sustainable solutions for the project's objectives and aims. Typical quotes for this code included the following:

Consultants:

"With me, it is not about what Harry Tate wanted to do, but the end result for EFG Company is what it is all about. Tomorrow I am gone, and the building is still there and EFG Company must move forward." P19:3 Case C

"I would much rather want my signature to the end result. Not the building in itself. That people are happy. The end user satisfaction is my signature." P21:10 Case D

"At the end of the day, if I think something must change to make it better, then I will do it. I don't care if somebody is mad at me now, and in a weeks' time they are happy. But it is a mess if they are going to be mad at me forever." P8:32 Case B

Clients:

"…we want somebody that will put the institution's interest there…" P12:65 Case B

"He did not make autocratic decisions; and he said we should look at options. It is because he wanted the best product for us (the client). You could see that he went the extra mile." P15:108 Case C

5.4.3.1.3 Code 29: Communication

Communication as a well-researched and reviewed aspect of project functioning, which was also noted with importance by the participants. The platform, manner of communication and the positive outcomes were found and identified within the feedback related to communication. These aspects were defined and summarised in the following sub-codes:

- Open lines of communication;

- How to communicate in the project environment; and,

- Creating a positive environment.

5.4.3.1.3.1 Code 29a: Communication – Open lines of communication

The respondents noted the need to have open lines of communication with all the project role-players. This need denotes a platform for the discussion of issues both

difficult and mundane, but adding to the subsequent performance of the role-players and project as a whole. Feedback for this sub-code indicated the following:

Consultants:

"Communication is one of the most important things […] If you make a mistake, then you come and talk about it and we can see how to fix it. Don't let it go too far." P19:51 Case C

PM comments:

"So, and also just pick up the phone and speak to all the team members and keep your communication lines open constantly. Your top manager might say you have an open-door policy, just knock and come in… don't be afraid to come in. That is what I feel that when you are working with a professional team, treat them as professionals. And keep those communication lines wide open." P22:40 Case D

"But I would also say that the PM has responsibility. He needs to see if there are issues and the team as a whole. If somebody is unhappy, you have the right to say you are not happy." P24:13 Case A

Contractors:

"And again, you could communicate with them (client and consultants). You did not feel like you should accept everything and just keep quiet and then write a letter to their attorney. After a meeting I could say: Fred, I don't agree, come with me and I can quickly show you. Then I show him the issue and he understands. Or he explains and I understand his point. It was positive to be able to easily talk to them." P20:69 Case D

The extent to which the role-players trust each other has implications for the openness of communication; and it could reflect on the levels of trust between the role-players.

5.4.3.1.3.2 Code 29b: Communication – How to communicate in the project environment

Role-players prefer to be communicated with in a certain manner. The preferred manner in which issues or general day-to-day project instructions are communicated is highlighted in this sub-code. Evidential quotes for this code noted the following:

Consultants:

"It is how you tell a person. You can tell him if something is wrong and has to be redone, but it is how you say it. […] I must say in all situations it was handled well and nobody felt bad." P17:38 Case C

"Yes, you communicate decently. Everybody is equal there. Nobody is inferior to others." P14:27 Case C

"It is about talking with someone. It is almost like when you talk to your children." P8:56 Case B

"As soon as you send e-mails out; and it is black, bold and underlined and he reads it in the wrong tone, you've written it maybe in a friendly tone, you never know whether he is maybe on another site addressing problems; he can read it in another tone." P9:13 Case B

"Some people can be sensitive towards issues. Sometimes they take things over personally is just treating it as your job. You have to be careful how you say things. And don't hurt their feelings and don't undermine their integrity." P22:42 Case D

Contractors:

"Again, it is the way in which you approach him. Ricky and John bumped heads a lot, and then I would go and talk to him and say John come and have a look here, let me show you what the problem is. Then he understands. It is the way you communicate." P20:71 Case D

"When you were able to speak person-to-person without others around, then the individuals were able to assist me. But the time you sometimes have to take to personally interact or to speak in a soft manner to show that I am not the enemy…" P18:49 Case C

The participants were implicit in the manner in which they think the communication on a project should take place. In short, how they should be communicating with each other. The "how" in this code reflects on the positive ways in which messages of communication are relayed between role-players, in order to ensure that an outcome or resolution is reached. By implication, the "how" reflects a need to be tactful, and not to be brash.

This positive communication manner impacts the relationships and trust between the parties. Trust seemingly is gained by extending the proper communication; and it could be sensibly linked with the code "Transactions", which in a sense is what is happening during the process of communication.

5.4.3.1.3.3 Code 29c: Communication – Creating a positive environment

In line with the sub-codes noted in relation to communication, the effect of good communication was noted by the participants. The improvement of the operating environment was seen to be a direct outcome of good and open communication. Quotes reflecting this positive outcome noted the following:

Consultants:

> "They made you feel welcome. Basically, everybody had to fulfil their responsibilities. There wasn't a lot of time to bring everything together; but it was a fantastic team. It just makes it so much easier if people actually listen to each other and don't argue over things. That is where the client representative was very good. P19:28

> "First thing I normally do, is I would address the topic of communication so that the whole team communicates. On that platform are the scope, and then the planning phase. If I say scope, it is including me; and thereby, it is setting up the whole discipline of planning, the design and so on. And then also I have a very close interaction with the Client." P24:34

> "The only way, look if you communicate, then no one will even know there was an issue. That is how it should be. That something just works all of a sudden!" P8:35

> "You must be very specific, the right discussion and being truthful with each other and get the information out. It is when you don't have discussions or you can't handle conflict, it eventually catches up with you." P10:14 Case B

Contractor:

> "If you are really a team, then you can communicate in that way. That is one of the things which makes it really easy. […] I think for the project manager his one aim is that the guys work as a team. Although I know they first have to work

in the design team, from the contractor's side; if you can just feel like you are working as a team, then stuff just works better." P20:81 Case

5.4.3.1.4 Code 30: Meetings

Consultants mentioned three issues related to meetings, which in the end assisted with the final coding on this section. There was a distinct loathing of the time wasted and non-effective meetings. Secondly, the understanding that the meetings are a necessary evil and must happen at stages. And finally, the role that the PM plays in the meeting environment.

5.4.3.1.4.1 Code 30a: Meetings – Waste of time

As noted under the introduction to this code, the consultants indicated a distinct disgust at the possible time wasted, when sitting in meetings; and the manner in which the communication happens at the meetings. The group seems to find that in many instances, that meetings are fruitless, unproductive activities. The responses framing this sub-code noted the following:

Consultants:

> *"It is site meeting on site meeting. I want to run away! It is a human failure, we do not communicate efficiently."* P21:29 Case D

> *"…we have given you the e-mail, we've sent you an e-mail containing our cost, so that meeting was fruitless, a bit of a waste of time you had all the professionals around a table for an hour and a half, for what?"* P9:25 Case B

> *"I can't take it. To sit in a meeting for two hours and my inputs are 10 minutes. And the stuff out there is building up. That frustrates me. […] Guys that respect my time that I enjoy. When I sit in a meeting, I don't earn any money."* P13:31/34 Case B

> *"Something I picked up is that the guys let meetings go on for two or two and half hours these days. Because they sit and moan. To think that grown people can sit for hours and go on about minor detail like that?"* P17:18 Case C

Interestingly, one of the consultants noted a typical organic response to meetings, which are seen to be a waste of time. People start to circumvent the situation; and they find ways to make it more bearable.

"Frank, he always came late, because he knew it was first all the Health and Safety discussions. And you also don't want that, it has to be managed. Their time is precious, so if you are going to waste it, then they will make another plan." P21:48 Case D

5.4.3.1.4.2 Code 30b: Meetings – Necessary evil

Related to the first sub-code (Meetings – Waste of time), the counterargument was made by certain respondents, that meetings are actually a necessary evil. This is where certain interactions and exchanges of information can take place.

Consultants:

"DEF Company requires monthly meetings and monthly reports. So one has to stay on the job. You've got to be okay with the job and you mix with the fellow professionals. Ideas are thrown around and decisions are made. It's very important. And then you have to clear out things with the Engineer or Architect and you don't leave it until the next meeting." P14:12 Case C

"A lot of it is you are in a meeting, we are going to need this done…that set of drawings or whatever, by this date." P25:48 Case D

"It is because there was good communication. Gary and Andrew called the guys together frequently. […] I think that is what made it a success at the end of the day." P19:29 Case C

"People must sit more around a table, with e-mails back and forth, red writing, black, bold and underlined, where is the company's policy? Try and stay away from it; unless it is something that you want to moan about; but don't put that into an email; talk to him on the phone, and give him the e-mail as discussed." P9:13 Case B

"… at the end of the day, they'll see it is worth it. There are always so many meetings, but with this one we could probably have had more meetings." P7:103 Case B

Contractors:

"It is either per email, or in a meeting in terms of sorting out the costing; or will this work? Or contractor do this or that. So, it was about facilitating to get the

answers out of the guys. I think that was the right way of doing things." P6:64

Case B

The responses indicate a need to, at stages, communicate face-to-face. This interaction has positive outcomes related to information flow, relationship building and project focus.

5.4.3.1.4.3 Code 30c: Meetings – Project Managers' role

The role-players again looked for assistance in making the process of meeting and interaction at the meeting as effective and productive as possible. This assistance is required from the PM. Pertinent quotes for this sub-code included:

Consultants:

"I must say in general, our meetings are short. And we made it clear to the Project Manager that we don't need the workshops etc. He accepted it and that was good. Our site meetings are also short and to the point. […] I also say the chairman should be slightly rude. He should be tough and tell the guys this is enough; let's move on. If he does not give guidance, then they just talk." P13:32

Case A

"But once a month we all got together under the chairmanship of the Architect." P14:12 Case C

"That is where the Principal Agent would quickly silence the guys and note that they must organise another meeting to sort it out." P17:18 Case C

These comments all express similar sentiments relating to the codes identified in Question 4 regarding the expectations and assistance from the appointed PM.

5.4.3.1.5 Code 31: Professional Consultancy fees

The role-players' feedback stated a relationship between the fee value and the level of service provision by the consultants, thereby implying their performance on the project. Quotes, which correlate with the above code description and explanation, were:

Consultants:

"The thing is with us tendering, the fees are getting pushed lower and lower. The clients don't always understand it; but we can't afford the resources. Not if you are just breaking even on a project." P2:20 Case A

"I don't want to lie to you, but I gave a ridiculous discount on my fees. I built it and did not want to make money, but also not to lose money. But I lost a lot on that job. I gave something like 65% discount. It was ridiculous you know, but you think you can make it work or something…" P8:2 Case B

"Because they tell me, I'm not giving you those details, because I cut my fee! I need those details! And I still have to do my job. So don't pull back on your service. Unfortunately, that is part of discounted fees, where there is a pull back on service and you can't afford to spend this much time on a job." P25:28 Case D

"XYZ Company said that they do not accept more than 20% discount on professional fees in the evaluation of proposals. That was a good move. They probably burnt their fingers in the past with guys coming in too low and then they sit with something they thought they had, and not getting it at all." 13:2 Case A

Contractors:

"We find with many professionals, and I think it comes with the industry at the moment, they take on too many projects to survive. He prices extremely low and takes on three projects and not one to be able to survive. And then they are not focused. And they are just so much slower than usual." P20:8 Case C

Clients:

"In the old days, we took time with what we did; and we thought about it. Today, because of the competition and appointing consultants differently, they have to tender for work. So they go in low, and they don't have the time anymore. But the fact is that the industry must find a way to balance itself. […] Now the consultant gives you a minimum service. What do you get? A big disaster, because both the contractor's and the consultant's inputs are weak." P23:9 Case D

Specific solution comments:

"I think the client will have to be aware what he is paying for. Is he going to pay and get something, or pay more and get something better? It comes at a premium, but to his advantage." P23:9 Case D

A logical link can be made between economic survival and service delivery. This link would reflect that an economic survival threshold exists; and if operating under this threshold, a consultant cannot, under normal or sustainable circumstances, give a service as required by the professional regulatory bodies. It seems that there is agreement, that due to the low fees, the service levels are also lowered.

Some respondents also expressed the danger of others not performing; because of the low fees; and that it influences their performance, due to the interdependence of information on such projects. In this code, the client feedback almost confirms the impact noted by the consultants and the contractors.

A specific solution to the fees debacle could be an understanding that you pay a premium for a better service.

5.4.3.1.6 Code 32: Site

This code indicates the respondent feedback, which could be linked to site-specific issues. The sub-codes 'Site – Management' and 'Site – Weather' had direct and almost isolated links to the contractors; because these codes have a major impact on their day-to-day operations; and they subsequently influence the contractor's performance.

'Site – Quality' was also created as a sub-code to reflect on the feedback, which noted issues with the quality of the end-product.

5.4.3.1.6.1 Code 32a: Site – Management

This sub-code indicates some of the issues, which only the contractors can deal with during their site-operational period. In these instances, a strong reflection was made on the impact on their site management by external parties. The feedback indicates that the construction site, as a production area, is a highly influential space; and it is easily affected by tensions beyond the site boundaries. Quotes noted are:

Contractor:

> *"Then you still have your site staff… you have to work with private persons […] if you have friction within the professional team, where I am the representative, then that friction spills over to my site team. If the architect craps on you over quality, you go and shout at your foremen and so on." P20:46 Case D*

> *"Like I said, it filters down. You know and it has been incredibly difficult on the site to keep my team motivated. For example, my labour is yet to receive a full month's rate. Because our policy is 'no work no pay'. Be it a strike from the local community. If you don't work, you don't get paid. So it is difficult to keep the guys motivated." P4:48 Case A*

The contractor feedback notes a dependence on the parties beyond the research scope; and it reflects the site staff and the local community as impacting parties.

5.4.3.1.6.2 Code 32b: Site – Weather

The impact of inclement weather on site operations was mentioned by contractors as influencing their performance. Weather delays are a factor, which have always been a performance inhibitor for contractors; and barring major changes in technology, it will be so for the foreseeable future. Specific quotes for this sub-code stated:

Contractors:

> *"And then in terms of outside influence, the weather is also playing a role. Fifteen days were included in the original contact/programme. This is already gone." P4:20 Case A*

> *"And naturally the weather; but there is nothing we can do about it. Last week Monday's rain and wind got us up to twelve or thirteen days delay thus far." P6:23 Case B*

The commentary notes an understanding and acceptance of this type of delay; as being beyond the control of all the role-players; therefore, no one is to blame; but the effects are acutely felt by the contractors. The loss of production and momentum has the possibility to produce a lack of performance, or to derail the current good performance.

5.4.3.1.6.3 Code 32c: Site - Quality

With regard to site-related issues, all the role-players are influenced by the quality of the end-product. The main commentary noted current industry-wide issues with the standard of quality; and they reflect on the current construction environment not being able to provide the quality expected. This, therefore, implies that the role-players should accept a lower quality end-product. Related quotations noted:

Consultants:

> *"You've got to accept that standard. At the end of the day, it is not a sleek, beautiful building, but lovingly made by the community. There is a place for those people too; but as long as they are growing and developing and learning. There you've actually got to work with what you are dealing with. You actually cannot accept the same standard of that group of people, compared to what you would prefer to have." P16:6 Case C*

> *"Another one that demotivated me a lot, was the re-work that was required – needing a high-standard quality assurance was paramount. But you have an SME that had to bash out tiles three times and brick and plaster work that had to be redone. It all delays a project." P22:10 Case D*

> *"On the client representative's side, there were more problems with quality finishes and that type of thing. It seems to be a common problem these days. I think the contractor can pull up his socks on his end." P19:43 Case C*

Contractors:

> *"You are not going to talk away SMEs; but you lose a lot of time, money and quality. The building industries quality has really deteriorated; and the SMEs are just adding to the problem." P20:19 Case D*

Some clear links can be noted in relation to the sub-code "*Procurement – Small and Medium Enterprises,*" which was directly noted and inferred in some of the feedback. The contractors also depend on the performance of others (sub-contractors), which in the case of SMEs are, in instances, forced upon them.

5.4.3.1.7 Code 33: Personal

The code "Personal" is self-explanatory in its description. The respondents are driven to higher performance and motived due to internal satisfaction and needs. Prominent quotes for this code stated:

Consultants:

"You know, I do this for the love of it. It is not something money can buy." P8:2 Case B

"Enjoy what you doing. If you are doing this job just to get a salary…it is a lot more than that." P22:44 Case D

"They don't understand it, but a building you can go and show your wife and say I built this and that building. Landmarks you were involved with. So that is what you enjoy." P17:14 Case C

"With which I then motivate myself, because I really enjoy the kind of work I do." P24:2 Case A

Contractors:

"So it is extremely difficult and frustrating. If I wasn't the person I was, I probably would have folded a long time ago. But I am one of those guys, if you tell me I can't, I will show you I can." P4:108 Case A

"With us there are no performance bonuses or incentives. We don't have such structures. I think you have to motivate yourself. With us, it is basically, 'do your job'. That is what is expected. You motivate yourself to say this is what I need to finish this day or week." P20:1 Case D

Clients:

"Obviously, I enjoy being creative, I love the industry, especially the design side. I enjoy seeing good designs and I enjoy seeing them gain. I know the building industry for what it is; it has a lot more issues; but I enjoy what I do. To me, it is just the whole creative environment producing something that will be there for the next hundred years. I enjoy that; to me, that is the whole reason why I am in it." P12:97 Case B

"At the end of the day, I get measured by our Director related to my outputs. How many projects I began and finished within the quality and cost parameters. And where we could make a saving, not just for the sake of saving, but you actually feel good. It feels [as] if you [have] really achieved something." P 15:48 Case C

"At the end of the day, you can see what you have done. If you think back to all the bad times; and you can put it behind you; and say: here stands a building. And you see what impact it has on the community. That is the total gratification at the end of the day. That is my personal view." P23:36 Case D

No external factors or influence seem to be at play with these comments; and the responses are heartfelt and truthful. This code exemplifies, in the research, one of the pure motivators.

The following identified sub-codes clarified and made some distinction on the possible sources of the "personal" motivation.

5.4.3.1.7.1 Code 33a: Personal – Pride in my work

This sub-code reflects on how the respondents feel about the work that they did, or the part they played on a project. This commentary reflects the section of feedback, which noted that the role-players felt that they really did a good job; and they put in a sound amount of effort to achieve success, or to deserve certain goals. Examples for this sub-code indicate the following:

Consultant:

"It is nice to go from the plan to building on the ground, and the stuff you designed to see it realised. And how the guys built it. It is actually a thing to see the project from plan in the beginning; and then there it stands; and you can say: This is what I have done from plan and there it stands." 17:15 Case C

"I think to date, considering what we had to deal with, we've done a really good job. […] but especially how we've had to keep everything together. […] it's been very hard work; and I think we've done a good job." P11:54 Case B

"And also, there were certain "date targets". And initially I was given a month to do the whole document. I ended up getting only two weeks. So, I was actually very proud of what I have done in 2 weeks." P1:5 Case A

Contractors:

"I tell you something. When I hand this building over and walk away from it, I am damn proud of it and what we've done, given the circumstances. So, that is the motivation." P4:109 Case A

Clients:

"I can honestly tell you, with my previous and current employer, I have never once had a project overrun." P15:50 Case C

"If I cannot do it properly, then I don't want my name linked to it. I then don't want to be the representative." P23:48 Case D

5.4.3.1.7.2 Code 33b: Personal – Valued and Recognised for my input

In this sub-code, the respondents conveyed feedback, which suggested that others recognise and value the importance of their inputs. Some expressed that others are in need of their input, linked to the understanding of the role-players, that they are interdependent.

It can be seen from the feedback that the various role-players want to know that their input is important to the team and for the overall project realisation. This feedback in relation to their value and recognition is shown to be a vital tool in driving and motivating the role-players. Quotes, which correlate with the above code description were:

Consultants:

"I feel that my opinions are valued. I feel that the client is reliant on me. You are talking about stuff outside the project, how we could restructure a similar project in the future. So yes, he asks my input every other week or month. I do feel valued." P 1:26 Case A

"They (other role-players) value your input. I almost want to say they can't do anything without my "yay or nay". P3:19 Case A

"So my motivation … you know and as the project progresses, each month you would have to report daily; and you need to make strategic decisions. We would recommend that something gets taken off the building; because we didn't have the budget, or vice versa." P11:5 Case B

"And as a person, you want to get that recognition, if you know you have worked hard. Just to know someone saw it. Some people live off that appreciation. So, if you tell them the whole time that they are doing well, it helps." P17:37 Case C

Contractors:

"…the team was willing to listen to what the contractor says. There wasn't a situation of: you are the contractor and I am the architect. I felt involved and can't moan about that aspect." P20:33 Case D

"With regard to information that they give me, they would ask my inputs, how can I put it, with the roof or anything, when will I need it. I would try and give options. So it was part of the communication. You have to give your inputs." P6:33 Case B

Clients:

"I feel I was involved; especially because I am technically skilled and technically inclined, I want to give my input. […] And then I must say I know what my company's standards are. Then I feel I have given my inputs. So then yes, I do feel part of the project." P15:31 Case C

The feedback related to being valued. The recognition of a role-player's input could be linked to proper formal and informal communication. The appreciation of others gains trust and also assists with the team cohesion; while creating a positive environment. A sense was felt of an informal performance measurement process taking place when giving others feedback on the value of their inputs and recognising their performance, or efforts.

5.4.3.1.7.2.1 PMs' views on expressing valued input as a motivational/driver tool

The participants indicated that the PMs expressed their appreciation through noting the value and openly recognising the inputs given. Evidence of the mentioned PM's appreciation were noted as:

Consultants:

> *"There was also motivation from the Principal Agent's side. If something good was done, he would say it to the contractor. At the end of the day, they can have pride in their work." P17:37 Case C*

> *"I think one of the biggest things I like to do is to show appreciation for anything that they (other role-players) do. I can send out an email asking for immediate information; and it comes back without delay. I always respond with a 'Thank You', or 'Much Appreciated'. I think that communication makes them feel that they are also being rewarded and appreciated for what they are doing, on top of everything else." P22:40 Case D*

> *"…I guess to motivate, but also something more on a personal level. […] And acknowledging if somebody is doing great or [being] helpful for the team. It is not a planned approach…" P24:30 Case A*

Links could be drawn between the manner and ways that PMs motivate the role-players and how they communicate. In some ways building up the team; and through these actions, hoping that the recognition of good work would lead to more positive performance actions. Links could be identified with the identified "Client – Feedback/Recognition" code and "Communication;" since both of these indicated that performance could be improved through feedback.

5.4.3.1.7.3 Code 33c: Personal – Fame/Publicity

From the quotes noted below, the reader will appreciate the illustration that some consultants have a peculiar drive towards gaining publicity or fame through their involvement on a project. To a degree, these priorities could be egocentric and own business-centred. Noticeable quotes for this code were:

Consultants:

> *"So, [in] the first one (project) we came second, which was absolutely horrendous and [in] the second one we won. So, there is always the willingness to outperform. We have won 13 awards in 6 years. So that is what we do. We try to do the best that we can." P3a:1 Case A*

> *"I think this is an amazing building. We have the potential to win an amazing award as well. That kind of pushes you the whole time." P3b:23 Case A*

These comments could give the reader a sense that the role-players' gain in reputation and possible publicity could be a high priority, which might conflict with the project goals and priorities. Possible links could be made with the codes, reflecting on "Control Freaks" and also many of the "Budget" sub-codes. Reflection on these could test many of the motives around the real drivers behind commentary related to the limited amount available for projects and the creation of the highest value for the client. Some of the commentary is noted below for direct reference purposes:

Consultants:

"We had to let go of many of the niceties that we won the competition with, then you have to compromise" P 3a:8 Case A

"There is a bit of negativity there, because you have to look at saving money sometimes. Changing your detail, not to what you had in mind." P3b:57 Case A

5.4.3.1.8 Code 34: New/Different

A new or different prospect gains interest and even challenges the role-players. Each new conquest brings with it new role-players and technical issues. Even the manner of procurement could add to the challenge. The sub-codes reflecting on the new and different items experienced by the role-players were:

- Team members;
- Technical; and,
- Procurement.

5.4.3.1.8.1 Code 34a: New/Different – Team members

Some respondents created the impression that the mere fact of working with a new set of role-players on a team is a challenge in itself. This challenge acts as a driver of performance. The role-players are excited at the outcome of every new project that they undertake with a new set of team members. The relevant comments noted:

Consultants:

"I like the team dynamics and I enjoy the challenge*s. Each project has its new* challenge*s." P24:16 Case D*

"QSs and Contractors, bringing them together, it makes my job interesting and fun. I say to people, I enjoy going to work, every project is like a different job, different client, the architect, I've worked with Cliff Cold on many jobs and Harry and ABC Company before, every job is different, new architects with this one QSs, which makes life interesting, not boring." P9:39 Case B

"So from the contractor's side, it is also pleasant to have them on board. From our side, it is the first time we are involved with them on a project." P7:11 Case B

Clients:

"I think the dynamics. You work with different parties and individuals and you have one common goal. They have to deliver this. The challenges that it brings. The technical, individual, the contractor… and to make all a success." P 23:34 Case D

Links with the code "Learning from others/team" can be identified, which could explain some of the excitement with working with a new set of role-players.

In contrast with the comments above, links could also be seen between the fact that in this case the role-players reflect positively on the new environmental landscape of different role-players, and in other codes (*Continuity of team members, Cohesive Actions and Procurement*) the role-players indicate a clear apprehension of newly formed teams.

5.4.3.1.8.2 Code 34b: New/Different – Technical

The participants noted excitement and being driven/motivated by the fact that the technical aspects of the project were new; and by default then, challenging. Quotes for this code reflected the following:

Consultants:

"An interesting building, we had to use different technologies. It was interesting to design something a little bit different to the norm, it is not a house, not a government office or school where you are going to do one office, one class room, no tea room, and you just copy and paste the rest." P9:3 Case B

"The excitement of getting a new set of drawings is absolutely mind-blowing!" P14:2 Case C

"For me, it was something new, beautiful and big; but it was not outside of my frame of reference." P19:30 Case C

"I think that was really a motivation of getting to grips with a different type of building; because previously it was police stations or hospitals or really simple windows like this. […] That was a motivating thing to put everything into project. And I think a lot more hours, than what we were being paid for, we put in, purely because it was a challenge*."* P2:4 Case A

Contractors:

"So, I suppose in terms of personal growth it has been huge, and taught me how to deal with a lot of different situations, and also from a Business point of view, how to deal with things." P4:112 Case A

Clients:

"But once you begin with the building construction and you see the value it will add, then I think the building and all its systems, electrical, mechanical… that is where the challenges *are."* P23:38 Case D

The technical challenging environment and work seemingly gave the role-players a drive to perform in a situation where they are pitting their capabilities and problem-resolution abilities against what the project technically requires. The role-players could, in these environments, really test their technical mettle against a new set of problems.

5.4.3.1.8.3 Code 34c: New/Different – Procurement

With specific reference to Cases A and B, which used more progressive procurement methods, the role-players noted an excitement and drive to firstly be involved in the new process; but also to make it work. This challenge added to their motivation on the project. Specific quotations for this code noted:

Consultants:

"We made the contractor part of the design team. He was in the design meetings, discussing technical solutions. It helped me to perform, because I

have prepared the whole Project planning along these lines. It was quite motivating." P24:9 Case A

"I like a challenge and this was going to be completely something new. Maybe if you know a little bit of background, they were going to be doing it differently." P1:1 Case A

Clients:

"It was a really interesting evolving process on the procurement side through the institution, in the way they would structure it, and the adaption required to make it work. […] That is exciting and the monitoring of it now, I really enjoy." P5:1 Case

Links with the following codes could be indicated:

- Procurement – Early contractor involvement (ECI); and

- Procurement – Planning.

5.4.3.1.9 Code 35: Apathy

Respondents in this code noted the general apathy of a role-player towards project responsibilities, which then affects the performance of the team, or the aggrieved respondent directly. The general commentary on this code, focused on an apathetic attitude, which could be perceived from the respondents, rather than any real cause of the apathy. In these quotations, a lack of interest, enthusiasm or concern was expressed. Quotes for this code noted the following:

Consultants:

"And it is clearly evident in a project, if you have problems, because one company decided they are not going to give a project as much attention as you. They must have been on a very similar level. Because as soon as that is the case, you notice it." P2:51 Case A

"So, you guys are saying that there is time to do something over, but not time to do it right. That is what our biggest problem is at the moment." P19:25 Case C

"A problem can come when guys don't give a damn; but we don't often get that." P25:50 Case D

"Sometimes, the lack of answers and the support from the architect or project managers, just those frustrations I am going through." P9:24 Case B

Contractors:

"It almost feels, in the industry, as if the guys are scared to get involved with something. Firstly, he doesn't get paid for it, he could have spent time on something else. Secondly, the whole liability story. What if something happens…? The guys really don't want to get involved with extras. […] It has come to the point, I don't know about other contractors, but you don't want to give your input, because they will turn around and say 'but you said so?' So even contractors are now standing back and saying what do you want me to do?" P20:22/25 Case D

Clients:

"You are getting paid money to perform a job, they did not even look at the cost of those or what is available. It is even a lack of experience, or I don't care." P12:144 Case B

"It was a performance attitude. Not about construction at all. It was just not important to him. He was a junior and just did the minimum. There was no pride." P15:96 Case C

"I think what's bugging me and where we are at the moment, is the fact that they are not pushing to finish design, and detailing at an earlier date. They are waiting for things to be brought to them to do." P5:91 Case A

"If you just sit back and say "Do what you want; [and] then they will just do what they want." P15:47 Case C

"There is a very defensive attitude. The point of view and defending that the whole time. They don't say 'come and let's see what we can do'. […] You can see it very quickly if someone has the attitude of just defending himself and passing the blame. I don't think that is right." P23:39 Case D

General implications for team cohesion and trust can be gathered from the above responses, which have far-reaching effects on performance. The dependence on others was clearly identified to fulfil their roles and responsibilities, or to assist with information and other project-related matters.

5.4.3.1.9.1 Code 35a: Apathy – Meeting attendance

As a sub-code, meeting attendance, seems to be a particular identifier – for some role-players – of the level of an individual's interest in the project. The quotes indicate that if they are late for meetings, the quoted role-players would see it as a bad reflection of the level of enthusiasm and the priority the project has with someone.

Consultants:

> *"I won't say I hate it, but I dislike it when people don't, or professional team members don't pitch at meetings, or is late at meetings. It doesn't give a good impression of their professionalism." P22:24 Case D*

> *The other thing is [that] their meetings always start on time. Some people came late, but the Principal Agent and the PM and QS were always there on time."P14:36 Case C*

Client:

> *"With the engineers, I've got issues with them not attending meetings and late information." P12:175 Case B*

It may be noted that being conscientious, prompt or punctual at meetings is still seen as an indication that a role-player is interested and enthusiastic about the project. As mentioned under the code 'Meetings', the dynamics, attitudes and project management influence at meetings could also influence the nature and level of their attendance.

5.4.3.1.9.2 Code 35b: Apathy – Caused by Procurement

In this sub-code, the apathy seemingly has a cause. The apathy in this sub-code relates to the affected areas and the decisions made in and around the procurement of the projects' professional services and building contract. Particular quotes on the above noted:

Consultants:

> *"Well, when it came to tender evaluation, and we recommended that the contract didn't go to them, because it is a commercial risk. They were double the second lowest tenderer and three times the next tenderer in terms of their Preliminaries and General items. So, if there is at any stage of this programme*

any issue, we are going to get absolutely hammered. […] We did record that at our tender valuation as a major risk." P11:12 Case B

"If it is still within budget, I would be very happy on this particular project. If it is over budget, I won't badger myself so much; because the client has bought into a more high risk of procurement and they are well aware of that." P1:32 Case A

"Then we came to tender; and they decided to just take out certain elements to make sure we come in under the budget price. […] then they took stuff out and it still came in over the allowable. That was a mess. At the end of the day, because I have been through this before, I said just make the building smaller." P 8:11 Case B

The effects of lacklustre and badly planned decision-making during the procurement planning and decision-making seem to breed apathy towards the project outcomes and success. Figuratively speaking, these practices create "back doors" for the participants to take, when the project is not successful.

5.4.3.1.10 Code 36: Fear of losing my job

Some participants made comments related to the pure and simple fear of losing their job, as an outcome of non-performance on a project. Fear seems to persist with some role-players, as a driver of performance. Quotes reflecting this fear noted:

Consultants:

"Well, if you get something wrong, it's got huge implications. You can get fired if you make mistakes." P 11:1 Case B

Contractors:

"My motivation is that I want my job […] When starting with a company you want to prove yourself. But still now, it is not as if you can be complacent. […] My motivation is that I have to prove myself. I pull my weight to prove that I am worth something for the company. There isn't really any other motivation." P20:1/3 Case D

"It also has a direct relation to motivation. I am in a situation where I have sleepless nights, worrying about my security in my job. Because the way it is going, I am going to hand over the building late." P4:84 Case A

5.4.3.1.11 Code 37: Momentum

Project momentum was seen as an unseen force, which could possibly predict the outcome of a project. This unseen force is recognised by the role-players; and they indicate that the momentum is influenced by their actions. These actions can then either conserve/create, or destroy/decay positive momentum. If enough destruction occurs, then a negative momentum can be set in motion. The following sub-code headings were created to detail the analysis around the subject of "Momentum":

- Momentum Conservation/Creation;

- Outcomes of momentum conservation;

- PMs' role in momentum conservation; and,

- Momentum Destruction/Decay.

5.4.3.1.11.1 Code 37a: Momentum Conservation/Creation

The leading thoughts related to this code were related to the perceived action taken by the various role players – to try and keep the positive momentum or direction of a project going. Thereby, in a broad sense, as the code description notes, conserving/creating the positive momentum of the project. Prominent quotes for this code were:

Consultants:

> "We've paid for certain things in the past on numerous occasions, a R5000 here and a R1000 there, just to kill the fire and get it over and done with; you look back, maybe if I did that, it would have solved the problem, let's get it done, I will pay the contractor. Got the invoice, paid the client and it's done. The client got what he wanted." P 9:17 Case B

> "I have a very good relationship with KLM Company and I want… there is a lot of times when I just do things and I won't tell anybody about it. I just keep quiet and do it, you know. So, I feel if they get a good building and we get on well then it is better for the future. If it comes down to a factual situation between me and someone else, they can say we know what we have in you and we are fine with it. For me that is very important." P8:5 Case B

"When they came to building the building, I went cold, because the manholes were not positioned on the joint. Now, we've worked around that, and we didn't make a scene. It had to be redone and re-routed. But I do feel that those two issues did happen, and it was frustrating from my side." P16:44 Case C

"I think in a way; you say listen guys, we are in this thing, you've discounted our fees, we ended all together. Let's make it work and make it work well. And let's face it, at the end of the day as well, you still want to work with those people again. And you're hoping that by building that relationship, you will get more work." P25:32 Case D

"How I approach this…it could work both ways… if you start throwing stones, then somebody is going to throw them back. We at all cost will try not to get involved and resolve it together." P11:50 Case B

Contractors:

"Everyone sits around the table, even after all the frustrations, and says OK everybody, what can we do… what will be best here?" P6:36 Case B

Clients:

"It is certainly not the norm; and we felt bad; but to keep the motivation there, we came to that agreement." P12:139 Case B

"…I feel if one gives the contractor all the right info from the start, with the right set of drawings, which he can work from. Then I feel the momentum can keep going. But if you don't have all that in place, then it is going to give you problems." P15:15 Case C

It is perceived that a positive rhythm or momentum can exist on a project; and, if possible, the role-players would like to maintain it. The positive project momentum would keep the progress going in the direction that the role-players know it should go. This positive project momentum might come at a price; or only be maintained if they really exert some effort to achieve this conservation outcome.

The conservation of the momentum is a driver, which in many cases, may even cost the consultant actual funds/money to resolve a possible stumbling block, which they know would negatively affect the role-player performance, or the team, from working

well together. Some comments also reflect on making sure that future appointments are not affected by this stumbling block.

5.4.3.1.11.2 Code 37b: Outcomes of momentum conservation

Commentary from the respondents noted some situations, where the positive momentum was successfully conserved; and the project was going well and heading towards a success. Evidence of the mentioned conservation outcomes noted:

Consultants:

> *"Even with the client representative. If there was something that needed to be changed, the flow was there, a nice flow. So, I will definitely say it was a good team." P17:12 Case C*

> *"I think now, I am at the point where the motivation is every single time I go to visit the site. Things are working out according to what was planned. And there is always something on site that goes, you guys are not meeting, something that you've missed, but it gets solved so quickly; because there is so much planning from all of us. So, there is still motivation that you want to see. It is strange in a project that goes smoothly; as I have never had a project that goes this smoothly." P2:5 Case A*

> *"The same team has done the design right through to the final stages. We know each other; and we are a close knit team now. We are not getting to know a new team and having to get to know a whole new person from each discipline. Understanding and lessons learnt. It has been a vital exercise on how successful this project is going to be. Bearing in mind [that] it is going to be five times the size and the value of enabling works here." P22:21 Case D*

> *"In theory, they had a lot of confidence in the team to take the current client representative of the project. I think they need him elsewhere […] But I do think the guys have proved themselves and they understand." P21:25   Case D*

This section strengthens the first sub-code (Momentum Conservation/Creation) by noting the possible positive outcomes and scenario, when the momentum is conserved. The outcomes reflected on in the feedback were:

- Better or open communication and information flow;

- Easier resolution of problems or issues that might arise;

- Respondents experience high levels of motivation and alignment with project goals;

- Positive impact on team cohesion;

- Better performance; and,

- Positive influence on trust, and especially the client trusting the team.

5.4.3.1.11.3 Code 37c: PM's role in momentum conservation

Noticeable comments were made by the respondents relating to the role, which the PM plays in conserving/creating the positive momentum; as well as their expectations of their role in this exercise. In this code, the PMs also noted that they understood that it is one of their main tasks to conserve the momentum. Noticeable quotes for this code were:

Consultants:

> *"At some stage, saying 'okay this is not coming off, let's see what is causing the problem'. There must be a reason. I don't believe someone will do it out of spite. There usually is a reason. And as the project manager for me, he must see it coming and say 'here is something coming', he must sort it out." P21:67 Case D*

PM comments:

> *"Sometimes you are in this team that reaches a certain momentum. And you are at the point where the whole thing just moves. That I enjoy. When things are just smoothly moving." P24:18 Case A*

> *"We are quite a closely knit team, and obviously my role is slightly different as a co-ordinator, keeping the enthusiasm going. I can't be negative all the time, because it will be picked up by the team. And the flow becomes a hindrance." P22:16 Case D*

> *"As PA, the buck stops there. You must make sure things are going properly." P22:31 Case D*

5.4.3.1.11.4 Code 37d: Momentum Destruction/Decay

It was easy to identify the commentary, which related to the sub-code: "Momentum – Destruction" due to the expressed negativity. The feedback in some cases reflected on a certain issue or component of the work, but also, that the role-players over time have come to expect projects at some stage to become destructive and even fail.

Consultants:

> "In the beginning it kicks of nicely and it flows; your enthusiasm is there to perform. Towards the end you start to get delays and other frustrations kick in." P22:3 Case D

> "I think the guys are working nicely together as a team. I don't think there are clashes. But I don't know about later… when things get tight and people start to lose money… then it becomes difficult onsite." P13:17 Case B

Contractors:

> "… then at the end, it is not entirely what he wanted, you have to fix it and then it is our fault. Then, it becomes very difficult to keep motivated in terms of let's bring this project to a successful completion, where everyone is happy. By then, you as the contractor, are very far from being happy…" P18:9 Case C

Clients:

> "it is just that the information flows correctly, it is not bad on this project, but like I said the honeymoon period is still there, but soon I can see it is going to be at the point where the guys will be finger-pointing and this and this." P12:49 Case B

Many of the comments which are linked to this sub-code indicated a premonition towards the possibility of the project at some stage really turning ugly and moving towards a failure. Respondents almost expect the current situation to change for the worse; in a sense, this is similar to a self-fulfilling prophecy. Feedback might also suggest that many projects start off well; and the role-players are excited and motivated; but when the difficult times come, or major problems arise, they revert back to self-preservation. One could then agree that those outcomes of momentum destruction could see team cohesion crumble; and many other team-related issues would be negatively affected.

5.4.3.1.12   Summary of the overall Results for Question 5

The role-players' feedback as to what drives, motivates, or serve as barriers to performance, rallied strongly to the following main concepts, which were captured as codes and sub-codes. These are reflected in the summary Table 16 below:

Table 16: Summary of codes for Question 5 (Researcher's Construct, 2017)

Code No.	Codes with related Sub-codes	Code No.	Codes with related Sub-codes
27	**Budget**	**32**	**Site**
27a	Budget – Limited amount	32a	Site – Management
27b	Budget – Creating the highest value end product	32b	Site – Quality
27c	Budget – Non Payment	32c	Site - Weather
28	**Client**	**33**	**Personal**
28a	Client – Focus on the client as provider of work	33a	Personal – Pride in my work
28b	Client – First time client	33b	Personal – Valued and Recognition of my input
28c	Client – Negate client risk	33c	Personal – Fame/Publicity
28d	Client – Feedback/Recognition	**34**	**New/Different**
28e	Client – Client focus a perceived/intentional action	34a	New/Different – Team members
28f	Client – Meet expectations	34b	New/Different - Technical
28g	Client – Exceed expectations or needs	34c	New/Different - Procurement
28h	Client – Holistic long-term solutions/needs	**35**	**Apathy**
29	**Communication**	35a	Apathy – Meeting attendance
29a	Communication – Open lines of communication	35b	Apathy – Caused by Procurement
29b	Communication – How to communicate with others in the project environment	**36**	**Fear of losing my job**
29c	Communication – Creating a positive environment	**37**	**Momentum**
30	**Meetings**	37a	Momentum – Conservation/Creation
30a	Meetings – Waste of time	37b	Momentum – Outcomes of momentum conservation
30b	Meetings – Necessary evil	37c	Momentum – PM's role in momentum conservation
30c	Meetings – PM's role	37d	Momentum - Destruction
31	**Professional fees**		

Figure 20 shows the eleven codes identified during the analysis of the data for Question 5:
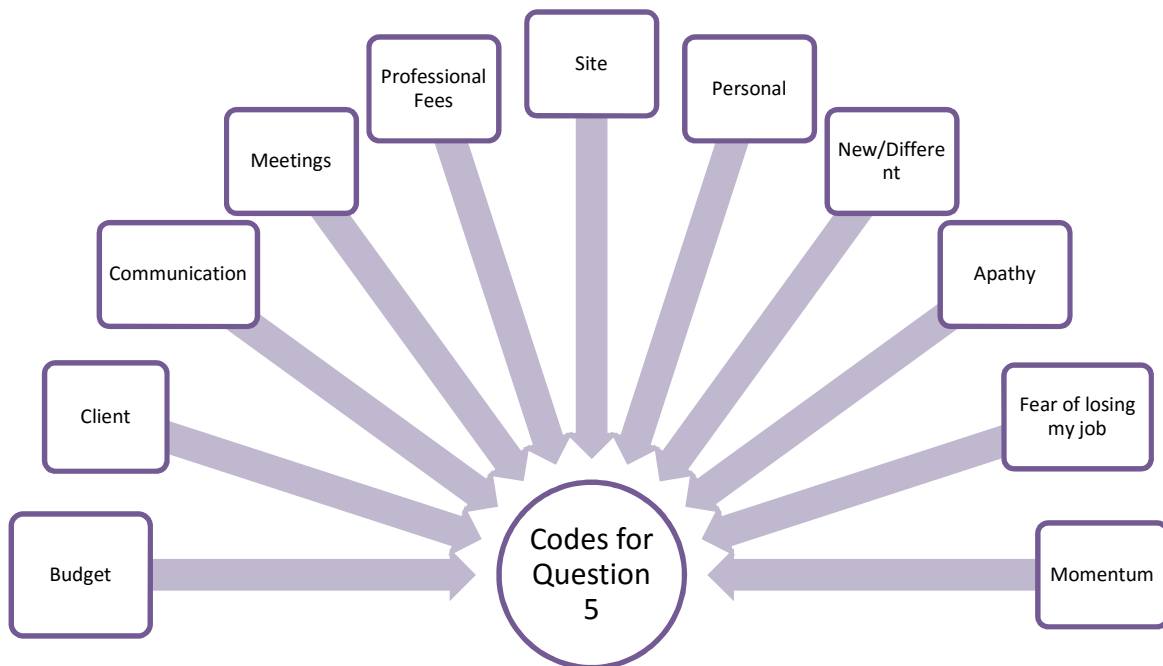
Figure 20: Question 5 – Codes (Researcher's Construct, 2017)

The feedback from the participants considered for Question 5, were summarised under each code heading as:

Code 27 – Budget:
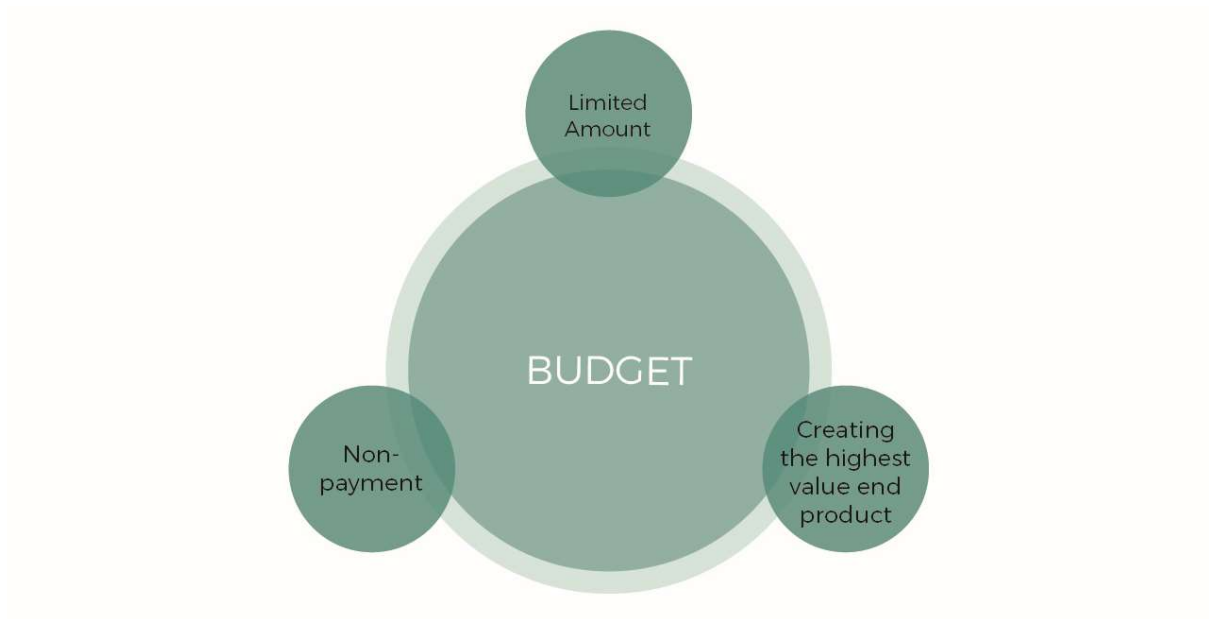
Figure 21: Budget Code diagram (Researcher's Construct, 2017)

Consultants noted that the project budget was a definite driver/motivator of performance.

Role-players reflect an understanding that the client has a limited fixed project amount or budget. This understanding gives rise to an urgency to protect this amount; and it is almost refereed and handled with the upmost respect.

Feedback, from especially the architects, indicated that the budget could limit performance in relation to a more complete or better end-product. The architects were found to be the self-appointed custodians of the image or aesthetics of the building, which is largely a complement of the overall budget.

There is also an inclination of the consultants noted, where they work towards and take up the challenge of creating the highest value on a project. This highest value is found within the limited budget, and the contractual and physical boundaries of the project.

Non-payment was mentioned as an obvious potential constraint to project performance.

Code 28 – Client:

Figure 22: Client Code diagram (Researcher's Construct, 2017)

The respondents noted the necessity to work as both a reward and money generator; but they also show an acute understanding that clients are the source of the work opportunities. There is a noted dependency on the client for appointments.

Most of the respondents noted a need to impress a first-time client. The outflow of a positive impression ensuring follow-on, or reappointment, or building relations, which could then lead to future appointments.

The respondents noted the need to limit or minimise the risk, to which the client is subjected. In a sense, they were "looking out for" the client. This is also a tool to impress the client, by making them aware that they were kept risk-free, or limited to any unnecessary risk exposure.

Recognition and feedback on performance from the clients seemed to ignite and invigorate the other role-players. The feedback on performance being either positive or negative, seemingly cultivates further satisfaction needs from the consultants – leading thereby to higher levels of performance, or the correction of low levels of performance. Possible links can be identified with the

sub-code "*Personal – Value and Recognition of my input*". This reflects on the need for others to value and recognise the individual's inputs. Positive feedback from the client also reflects on a trust in the individual; and it could be the start of a trust-based relationship. This confirms to the role-players that the client is in the process of, and starting, to trust them.

Client focus is not only intentional, but a visible or perceived action. The outcome is possible recognition for meeting the requirements of the clients, which could have two advantages. Firstly, positively influencing future appointment opportunities; and secondly, the satisfaction of reaching one's personal goals.

Some respondents are driven by what the client wants. They align their service and end-product requirements exactly with what the client requests. Thereby, they are narrowly defining client satisfaction, as meeting the client requirements with precision. The feedback aligns with very traditional performance measurement, which focuses on time, quality and budget.

Some respondents indicated an effort to overwhelm, delight and give more than is expected – by providing solutions, which they perceive to be the clients' actual needs in relation to what the client initially indicated that they wanted. Client feedback goes as far as noting expectancy and the need for a higher level of service; and almost indicating thereby that this should become the standard they can expect.

Feedback noted that some respondents took into account future long-term satisfaction of the client's needs; and they give sustainable solutions.

Code 29 – Communication:
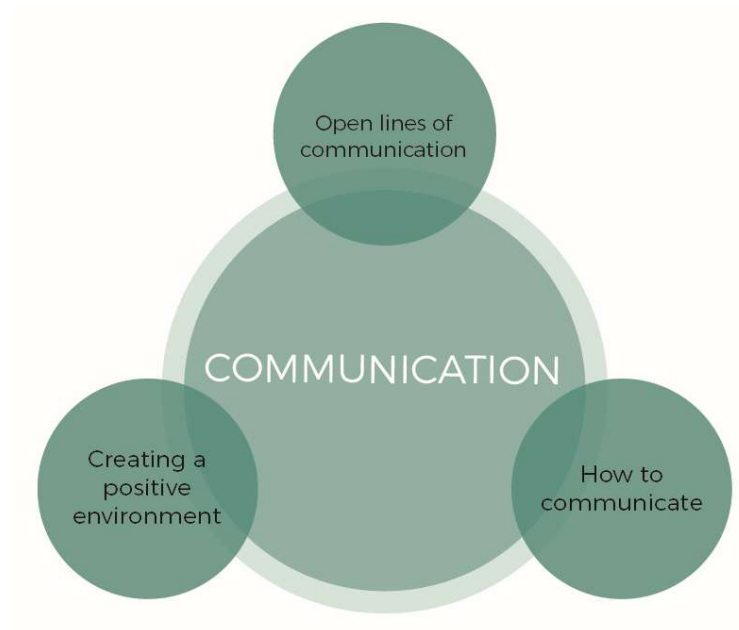
Figure 23: Communication Code diagram (Researcher's Construct, 2017)

Role-players expressed the need for open lines of communication to be able to discuss both difficult and mundane project issues. The openness of communication channels could reflect on the level of trust between the role-players and team cohesion.

"How" to communicate reflects on the positive, tactful ways in which information is relayed between the role-players. By implication, communication impacts the relationships and trust between the parties. Trust is gained by tactfully extending communication in the many transactions, which the role-players undertake with each other. Finally, an improvement in the operating environment is a direct outcome of open, tactful communication.

Code 30 – Meetings:
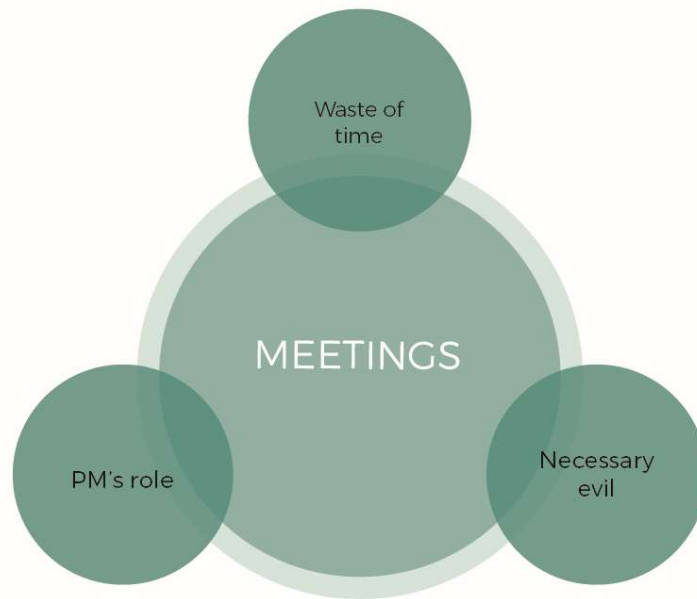
Figure 24: Meetings Code diagram (Researcher's Construct, 2017)

The respondents noted dissatisfaction at the notion of time being wasted and the lacklustre communication during meetings. Many expressed the view that meetings are fruitless and unproductive. Organic responses to meetings, which are seen to be a waste of time are the circumvention of the situation. Contrary to these arguments, some indicated that meetings are actually a necessary evil. Meetings are the platform for certain face-to-face interactions and exchanges, which assist with the information flow, the relationship building and the project focus.

Feedback indicated a need for assistance from the appointed PM in making the process of meetings and interaction effective, and as productive as possible. Similar sentiments were noted in some of the codes identified in Question 4, relating to expectations and assistance from the appointed PM.

Code 31 – Professional Consultancy fees

There seems to be a relationship between the consultant's fee value and the level of performance and agreement that are due to the low fees, when these service levels are lowered. There is a danger of certain role-players not performing efficiently, due to the lowered fees; and that this influences the

performance of others, due to the inherent interdependence on multi-disciplinary projects.

A possible solution is the acceptance that a better or higher service level could be rendered; but only if the client is prepared to pay a higher premium.

Code 32 – Site:

Figure 25: Site Code diagram (Researcher's Construct, 2017)

The impact of most of the noted issues is isolated to the contractors. The site performance is dependent and impacted by the site staff and the local community. The site is a highly influential space; and it is easily affected by tensions beyond the site boundaries.

Weather delays are understood and accepted as a current and future factor that impedes performance, which mainly affects the contractors.

All role-players are influenced by the quality of the end-product, produced on site. The current construction environment does not assist with the optimum production and procurement. Dependence of sub-contractors negatively influences the site environment's ability to produce quality products.

It can also be understood that the level of effort from the contractor is extremely high at the construction stage, where other role-players have virtually

completed their sections of the work (designs, contract documents, etc.); and at this stage, they only add detail and fulfil monitoring and control functions. The contractor has pressure all round; while the others, in a sense are already working on the next project.

Code 33 – Personal:
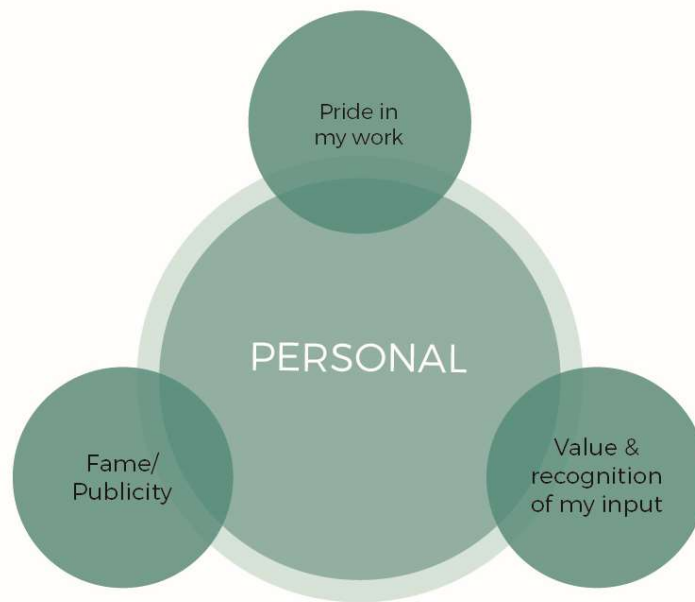
Figure 26: Personal Code diagram (Researcher's Construct, 2017)

In this code, the respondents' conveyed feedback suggested the following:

Internal satisfaction and needs drive role-players to higher levels of performance and motivation. This could be the purest motivator noted.

Pride in their work is a reflection of the extent of the worth that the respondents experienced with the respect to the work that they did. As part of this, others also recognise and value the importance of their inputs. Communicating the value and recognition of input is a vital tool in motivating the role-players. The appreciation engendered trust and assisted with the development of team cohesion; and it improved the understanding of interdependence.

Valuing and recognising the input of others also gave the sense of an informal performance-measurement process taking place.

PMs expressed their appreciation of the motivational power of valuing role-player inputs, and of openly recognising, when others provide inputs. Links

could be appreciated with the manner, or the ways that PMs motivate the role-players, and how they communicate. In some ways, PMs seem to aim at building up the team and hoping for this recognition of good work to lead to more positive performance actions.

In contradiction of the above-mentioned "Personal" code attributes, which sound quite noble, it must be appreciated that some role-players prioritise gaining publicity or fame, which are egocentric and their own business-centred. This focus, gives rise to conflicting goals and priorities. Links with codes reflecting on "*Control Freaks*" and also many of the "*Budget*" sub-codes support these possible conflicts.

Code 34 – New/Different:
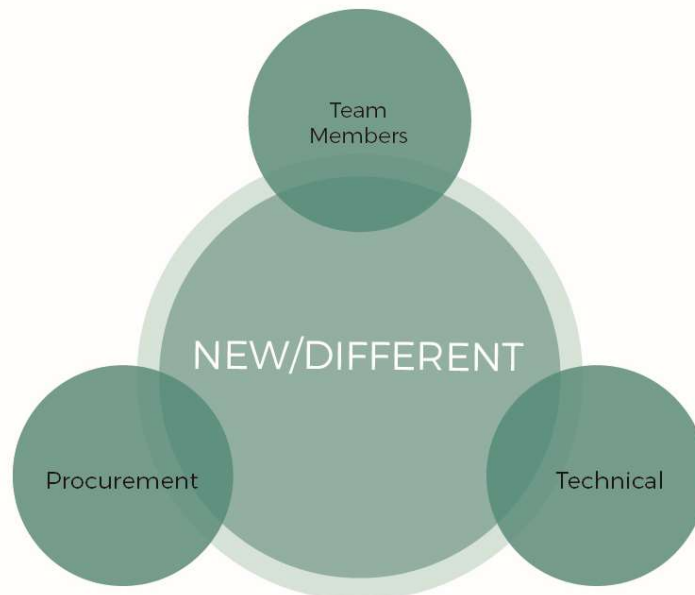
Figure 27: New/Different Code diagram (Researcher's Construct, 2017)

The role-players reflected being invigorated by the challenges, which new projects bring. They are able to test their skills and initiative within the new project environment. The new or different dimensions of the project reflect on three things:

- Team members – A new set of role-players on a team is a challenge;

- Technical – The technical aspects of the project were new; and by default challenging; and,

- Procurement – The challenges that a new contractual and team formation dimension brings.

Related to this code, the role-players reflect positively on the new environment consisting of different role-players. This being in contrast to the comments made in other codes (*Continuity of team members, Cohesive Actions and Procurement*). In these codes, the role-players indicated a clear apprehension of the new or different environment. Links with the following Procurement related codes could be indicated: *Early contractor involvement (ECI)* and *Planning*.

Code 35 – Apathy:
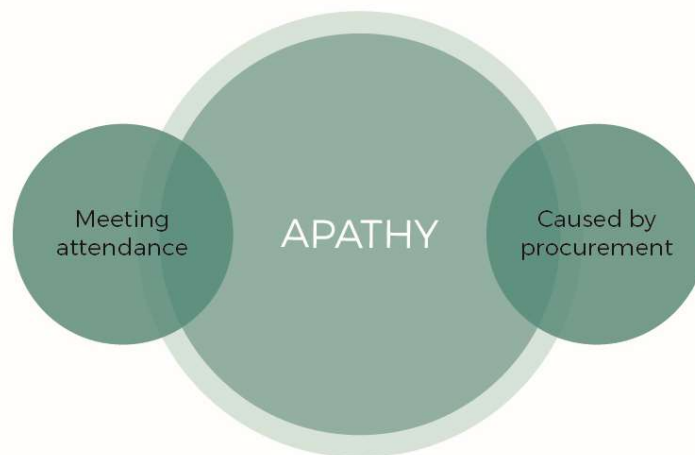
Figure 28: Apathy Code diagram (Researcher's Construct, 2017)

Apathy of role-players towards project responsibilities affects both the project team and individual role-player's performance. The commentary noted an apathetic attitude, highlighted by a lack of interest, enthusiasm or concern.

The implications of this apathetic attitude for the team relate to a lack of cohesion and trust, which finally affects performance. Dependence on others on the project is again identifiable.

Meetings attendance seems to be a reflection of the level of enthusiasm and the priority the project has with a role-player. Punctuality is still seen as an indication of interest and enthusiasm. The influence and links with the code "Meetings" could influence this specific sub-code.

The apathy caused by lacklustre and badly planned decision-making during procurement seems to breed a lack of concern and interest towards the project outcomes.

Code 36 – Fear of losing my job:

Fear of losing the current employment, due to a mistake or someone else's non-performance is a real and tangible issue for some role-players; and this could be seen as a driver of performance. The fear of not having an income and being able to economically exist is real. One could appreciate the importance of team performance if a role-player harbours this type of fear. Clear indications are also that the employer organisations' attitudes and practices influence the reality and experience of such fear.

Code 37 – Momentum:
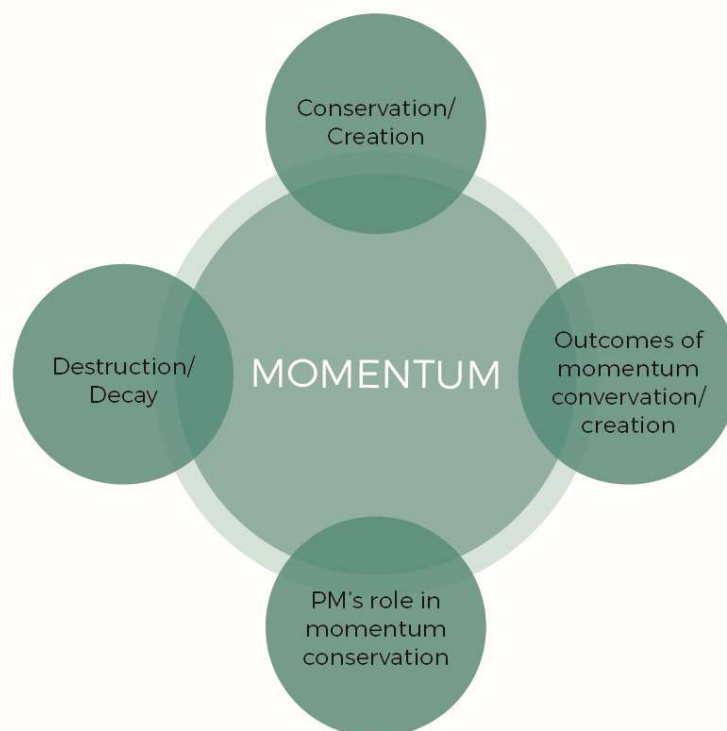
Figure 29: Momentum Code diagram (Researcher's Construct, 2017)

Project momentum can be described as the unseen, although recognisable force, which could possibly predict the outcome of a project. The actions taken by role-players influence the momentum in two ways – either positively (create/conserve) or negatively (destroy/decay).

Role-players at certain times take actions to sustain the positive rhythm, momentum or direction of a project going, thereby conserving the positive momentum of the project. These actions are taken, even if they come at a cost, or they require some effort.

Some of the areas, which were positively impacted due to momentum conservation, were noted as:

- Communication;

- Information flow;

- Problem resolution;

- Motivation;

- Alignment with project goals;

- Team cohesion;

- Performance; and,

- Trust.

PMs play a role in the process of conserving the positive momentum. This role is understood by PMs; and it is an expectation for the other role-players.

Destruction of momentum could relate to an isolated issue or role-player's expectations that most projects environments generally become destructive and slowly decay and migrate towards failure. Suggestions were that such projects start off well; and when pressure is exerted on the team, the role-players could revert to self-preservation. Momentum destruction negatively impacts the bulleted list above, as some of the affected project elements.

5.5 Summary of the codes identified from Questions 1 – 5

The following list reflects the entire set of codes identified for the research.

Table 17: Entire code set for Questions 1-5 (Researcher's Construct, 2017)

Code No.	Codes	Code No.	Codes
	Question 1:		**Question 5:**
1	It takes time before I can trust	27	Budget
2	Technical competence/ability	28	Client
3	Transparency	29	Communication
4	Cohesive Actions	30	Meetings
5	Part of a Team	31	Professional fees
6	Continuity of team members	32	Site
7	Relationships	33	Personal
8	Dependence on Others	34	New/Different
9	Learning from Others/Team	35	Apathy
10	Procurement	36	Fear of losing my job
11	Control Freaks	37	Momentum
	Question 2:		
12	Given Ownership/Responsibility		
13	Internal Support		
14	Small organisations		
	Question 3:		
15	Technical competence trumps all		
16	Industry shortcomings		
	Question 4:		
17	Expectations of the PM		
18	PM – Role in motivating the role-players		
19	Giving or casting vision		
20	Project Planning/Strategy		
21	Pro-active actions		
22	Staying focused on the project		
23	Information gathering by the PM		
24	PM Software		
25	PM– Adding no value		
26	PM - Incompetence		

The above-noted codes gave the researcher insight into many areas touched on as part of the research. These codes and the interpretation of the data produced culminates in the formation of categories, as discussed in the following section.

5.6   CATEGORIES

Having organised the analysis around each research question, this section unveils the identified categories, as groups of codes.

Gibson and Brown (2009) present the process and flow from the data towards the overall outcome of themes and finally the theoretical assertions based on thematic analysis in Figure 11: Codes-to-theory model (Gibson and Brown 2009). Applicable to this section in the thematic analysis, Chenail (2008) notes that as a major part of such a qualitative data analysis, categorisation attempts to "group patterns observed in the data into meaningful units or categories". This process explained by Chenail (2008) as "integration or aggregation" of the various codes which are similar or related.

The following sections (5.6.1 - 5.6.13) note the integration and aggregation of the codes during the formation of the categories, and are infused with the literature. The discussion around these categories reflects on both the category-to-category and category-to-phenomenon relationships as suggested by Chenail (2008).

Table 18 below formulates the thirteen categories identified as part of the above mentioned process of analysis:

Table 18: Categories (Researcher's Construct, 2017)

Category No.	Categories
1	Relationships
2	Cohesion
3	Trust
4	Communication
5	Challenge
6	Success
7	Pride
8	Ownership
9	Client
10	Project Management
11	Information
12	Human
13	Technical

5.6.1 RELATIONSHIPS

Table 19 reflects the 29 codes, forming part of the first identified category, RELATIONSHIPS:

Table 19: RELATIONSHIPS category – related codes (Researcher's Construct, 2017)

Code No.	Codes
2	Technical competence/ability
3	Transparency
4	Cohesive action
6	Continuity of team members
7	Relationships
8	Dependence on others
10	Procurement
12	Given Ownership/Responsibility
13	Internal support
15	Technical competence trumps all
17	Expectations of the PM
19	Giving or casting vision
20	Project Planning/Strategy
21	Pro Active actions
22	Staying focused on the project
23	Information gathering by the PM
24	PM Software
27	Budget
28	Client
29	Communication
30	Meetings
31	Professional Consultancy Fees
32	Site
33	Personal
34	New/Different
35	Apathy
36	Fear of losing my job
37	Momentum

Figure 30, diagrammatically shows the 29 codes, which formed the category Relationships:
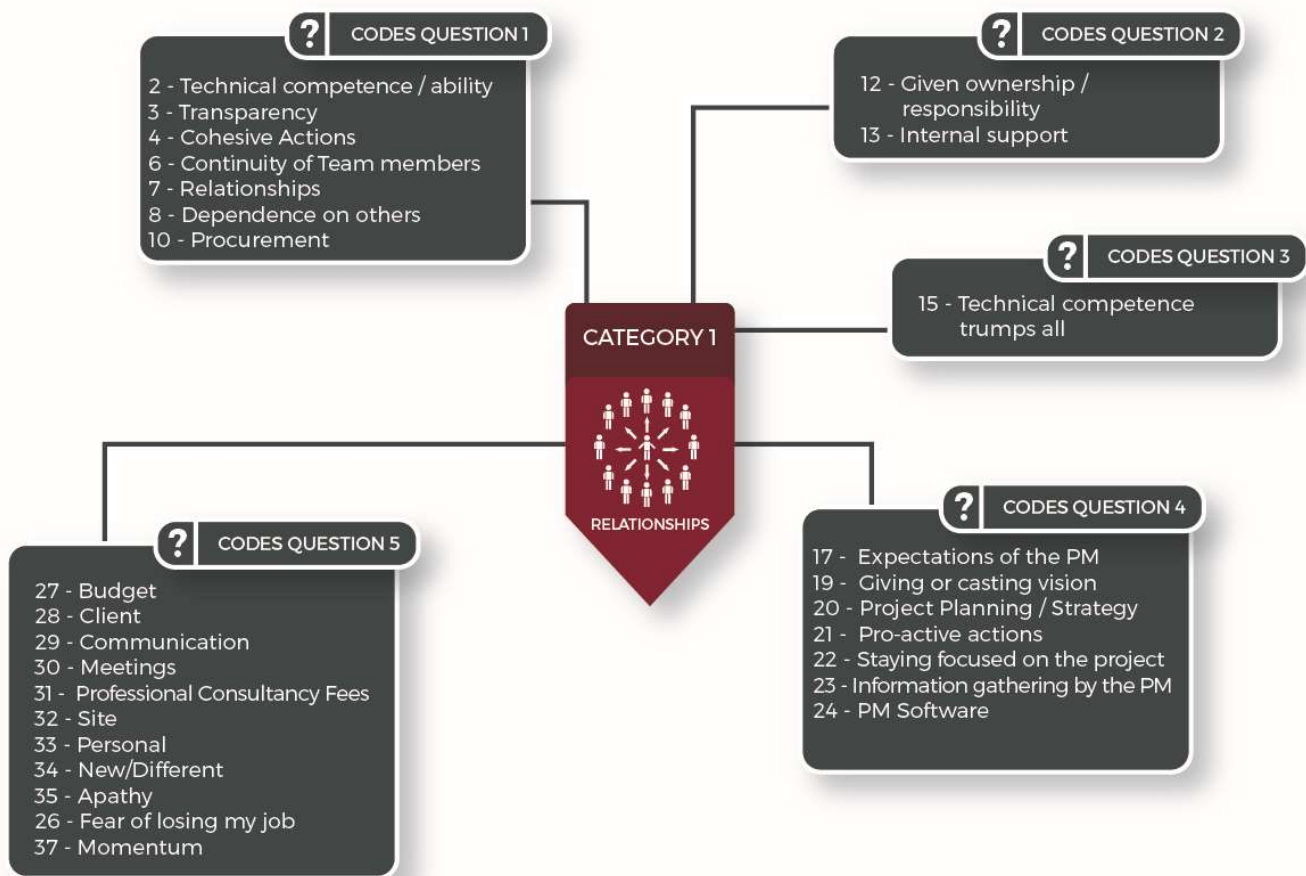
Figure 30: RELATIONSHIPS category – related codes (Researcher's Construct, 2017)

RELATIONSHIPS are important for the proper functioning of teams, as well as the drive towards optimum performance within the construction-project environment. The links, influences and dependencies within the data and subsequent codes were clear and identifiable. The interpretation of the analysed data reflected on the following for the category RELATIONSHIPS:

- *Technical competence/ability* – Role-players need other role-players to be competent and to be able to fulfil the role they have on the team. If a role-player is competent, the others are able to trust them; and subsequently, the relationship has that positive foundation upon which to build.

- *Transparency* – Another influence mentioned by the role-players was the many ways within which a team member's actions reflect transparency. The

transparent actions related to general operation; but some of the individuals noted a high regard for transparent financial activity and inputs. Through the consistent transparent actions of a role-player, the others would gain trust; and the RELATIONSHIPS would be able to grow. This interaction between role-players reflects "transactions", which take place between the role-players, as they engage in give-and-take actions to facilitate positive outcomes.

Smyth (2015) confirms the above-mentioned discussion notes, when indicating that trust and confidence comprise the basis for relationship building.

- *Cohesive action* – Some of the role-players find RELATIONSHIPS important for the overall performance and individual activities. They actually take action to ensure that the team is cohesive; and this cohesion drive is assisted by the building up of RELATIONSHIPS.

- *Continuity of team members* – The more time spent together; the more likely it is that role-players would be able to build proper RELATIONSHIPS. Therefore, continuous operation of a group of role-players on projects would be an ideal situation. Although ideal, there are possible situations, in which the team continuity could be broken for the better of the role-player group, and for the sake of the project outcomes. These situations would obviously be identified by the manner in which the continuity of the team is actually straining relations. Smyth (2015) states that continuity of teams through reappointment helps the facilitation of "relationship development"; but sadly, many projects are "once-off" events, which cannot leverage the full relational potential. Raiden *et al.* (2004) confirm the HR Management difficulties that arise due to the formation, development and disbanding of project teams. The feedback in discussion commentary connected to the Continuity of team members reflects similar sentiments, as those shared by Bresnen and Marshall (2000), Parker and Skitmore (2005), and Walker (2011:21). These sources note that:

  - Role-players will experience greater job satisfaction if they are part of an entire project and see the end result; and

  - Relational and collaboration efforts are undermined by the non-contiguous involvement of the role-players.

- *Relationships* – In the specific code linked to "*Relationships*", the comments indicated, as stated previously, relate to the high regard and importance of RELATIONSHIPS; and, in many cases, specifically the relationship with the clients. The importance and high regard for RELATIONSHIPS is possibly an outflow from identifying previous bad or lacking RELATIONSHIPS, and the effect these would have had on project performance. Therefore, Barrett (2000) indicates that role-players should aim at "stable relationships" with the other role-players; because, according to Meng (2012), unhealthy RELATIONSHIPS could engender poor performance.

  Socialising with other role-players seems to be a good start for role-players to connect and build RELATIONSHIPS; but there is a weariness; and therefore, a limit to the depth of professional RELATIONSHIPS *in lieu* of proper professional conduct and judgement. Noting the level of interaction and relationship required, the mentioned comments on social interaction and also weariness are verified by Bresnen and Marshall (2000).

  Finally, Helper and Henderson (2015) indicate that RELATIONSHIPS with people have a particularly effective motivational influence.

- *Dependence on others* – Role-players are dependent on each other for overall performance. The commentary from the role-players links the strain in relations due to others' performance directly impacting their own performance and possible future work opportunities. Smyth (2015) shares these thoughts and notes the integrating role of RELATIONSHIPS in project functions. The integrating role can be seen in the fact that role-players are particularly dependent on the technical input and financial-status information from others directly involved in the project. Dependence on the peripheral staff, indicates exactly how wide the relationship links in the project should run.

- *Procurement* – The procurement of role-players impacts on RELATIONSHIPS. The manner in which the procurement and the processes allow the role-players to interact and build RELATIONSHIPS is critical to the future performance of the team. Bresnen and Marshall (2000) noted that traditional methods of procurement create adversarial contract RELATIONSHIPS.

Specific to the procurement of a PM, the feedback indicates the strain in RELATIONSHIPS created when this role-player is not appointed at the right time, or with the required background and competence.

- *Given Ownership/Responsibility* – the manner in which role-players are given responsibility and ownership of project duties from within their organisations, reflects on their ability to do the same within the team environment; and they can either assist with the building up of trust and value with others, or break trust and value, which definitely strains RELATIONSHIPS.

- *Internal support* – In line with Walker (2011:26), it can be stated that if role-players are supported internally from within organisations, they are more likely to perform well. This performance will affect the trust from the team and have positive outcomes for RELATIONSHIPS on the team, reflecting in the commentary with regard to the codes "*Technical competence/ability*" and "*Dependence on others*".

- *Technical competence trumps all* – Regarding the RELATIONSHIPS with diverse groups and individuals, the overall requirement for interaction was found to be that these parties are technically competent. These statements are confirmed by Horak (2010), who indicated that cultural dimensions might make no impact on small groups. Therefore, the same commentary and outcomes concerning trust and relationship building can be expected, as discussed under the code heading: '*Technical competence/ability'*.

- *Expectations of the PM* – The mere fact that the role-players have a high performance expectancy of PM could then, if not realised, strain relations. Again it seems that the lack of performance could be linked to '*Technical competence/ability*'; and this would have a similar impact on the team's RELATIONSHIPS with the PM. Discussing the importance of RELATIONSHIPS for the appointed PM, Zaghloul and Hartman (2003) noted that RELATIONSHIPS are "vital" to the process of project management and contract administration.

- *Giving or casting vision; Project Planning/Strategy; Pro-Active actions; Staying focused on the project; Information gathering by the PM* – Some actions and practices of PM's could enhance the positive project environment with follow-

on positive effects on RELATIONSHIPS within this positive environment. These actions or practices include:

- Giving or casting vision;

- Proper planning and strategy;

- Being pro-active;

- Keeping role-players focused on the project; and,

- The gathering of information.

- *PM Software* – The use of software creates a platform for transparent communication, which is seemingly a catalyst for relationship-building between role-players. Cognisance though should be taken of the comments from Rezqui (2007), stating that team success relies both on the technology and on the social and organisational structures.

- *Budget* – The limitations of the budget and non-payment of role-players causes strain in relations. The alignment of all the needs within multi-disciplinary projects, which combine designers and cost-management professionals with the client's requirements is critical, in order to have well-functioning RELATIONSHIPS. Project cost is still viewed as a critical factor for success in projects (Cheung 2004; Walker 2007).

- *Clients* – The impact and role of clients in the entire project and RELATIONSHIPS in the project is evident. Firstly, the many focus areas of the consultants and the contractors, which all, in the end, endeavour to strengthen the RELATIONSHIPS with the client has implications on how the teams relate. And, secondly, the unique role which the client plays in the product development, procurement and creation/construction, has definite team relationship impacts. Walker (2011:28) notes that this relational standing is an outcome of the type of product that the industry delivers.

- *Communication* – Project communication, as a tool for information-sharing, social/operational interaction and the creation of a positive environment is intricately merged with RELATIONSHIPS in the project. The communication and the RELATIONSHIPS in the projects cannot be severed. The one exists as part of and because of the other. Others have noted that communication is the

channel through which relationship-development, -creation and -maintenance take place (Lee and Tiedens, 2001).

- *Meetings* – Meetings as a platform for operational and social interaction also play a big role in RELATIONSHIPS in the project. Although many find the meetings a waste of time, other views them as critical for the interaction on projects; and they require the PM to harness the meetings to be positive, impacting interactions.

- *Professional Consultancy Fees* – As with "Budget", it seems that the lack of and limitations of money puts a strain on relations. In this case, especially, the influence that the discounting of professional fees had on performance can be seen as having a negative impact on the subsequent role-player RELATIONSHIPS, which are linked to the code '*Dependence on others*'. The commentary aligns well with the 'Hygiene' factors, to which Herzberg refers in his theory (Herzberg, 1965, 1968; Verma, 1996; Werner *et al.*, 2011).

- *Site* – The issues confined to the site operation can influence RELATIONSHIPS. As part of the research, the management of the site was reflected on and indicated that the site is highly influenced and impacted by the relations that exist around it.

  Quality, as an outcome of site operations, could impact RELATIONSHIPS within the team and possibly influence long-standing views, especially regarding the contractor, which impacts on future RELATIONSHIPS, even beyond the current project. This view is supported by the current low level of client satisfaction – with both the quality and the performance (CIDB: South Africa, 2011, 2015).

- *Personal – Value and Recognition of my input* – The manner in which others relate to a role-player's input, can influence these relations. Many positive impacts were noted for RELATIONSHIPS when role-players felt valued and their inputs recognised. This aligns with the statements in the literature, which note the strong influence of intrinsic motivators (Herzberg, 1965, 1968, 1974; Verma, 1996; Werner *et al.*, 2011).

- *Personal – Fame/Publicity* – It could be argued that the search for fame or publicity through the project could influence RELATIONSHIPS negatively. If

role-players realise that some are only looking at self-centred or egotistical outcomes, a lack of trust and breakdown of RELATIONSHIPS could ensue.

- *New/Different* – The mere fact that team members are new, enhances motivation; and apparently, it challenges the role-players to engage and build new RELATIONSHIPS. The role-players then gain from these RELATIONSHIPS, which reflect on the codes '*Dependence on others*' and '*Learning from others/team*'. These comments are in contrast to the idea that non-continuous involvement of role-players undermines relational and collaborative efforts (Bresnen and Marshall, 2000).

- *Apathy* – If others are seen to be apathetic towards the project in any way, it influences RELATIONSHIPS. The role-players are dependent on each other for due performance. Apathy towards the project subsequently influences the performance; and has a negative effect on all the RELATIONSHIPS.

- *Fear of losing my job* – The reader could only imagine the far-reaching impact on relations when other role-players are not performing, or are apathetic of the project, when the dependent party harbours a fear of actually losing his job – if their performance is lacking. Relations would definitely become strained and brittle under such circumstances.

- *Momentum* – The fact that RELATIONSHIPS are as a focus area, driver and outcome of momentum conservation, is clear. The premise is that momentum can be directly linked to RELATIONSHIPS; and the many influences they have on the project. One of the greatest and worst outcomes of momentum destruction is possibly the break in RELATIONSHIPS, and the subsequent effect thereof on the achievement of project outcomes.

In concurrence with Nicholas and Steyn (2008), much of the commentary reiterates that these project RELATIONSHIPS are built on "mutual respect and confidence". Respect and confidence in these cases are connected to the following:

- Technical competence and the ability of others;

- The PM's competence and ability;

- The manner in which communication takes place; and,

- The perceived commitment towards the project in contrast to being apathetic.

Many of the above statements align with the views of Smyth (2015) on both the integrating impact of relations and the linkage effects between the 'hard' and 'soft' management issues. The integrating function in these cases span from concrete aspects of projects, such as technical information to unseen constructs, such as transparency and trust. The research suggests that the teams should be guided to engage in routine actions to ensure relationship management. These sentiments reflect on many of the code discussions, which engage ideas on the manner in which RELATIONSHIPS can be strengthened The routines around communication, meetings, project management, social interaction and cohesive actions are all routine actions, which, when managed well, could greatly enhance team RELATIONSHIPS.

The effects of poor relations can be linked with poor performance (X Meng, 2012). Barrett (2000) notes the importance of targeting "stable relationships" with other role-players, which reflects on comments made on the '*Dependence on others*' and '*Cohesive actions*'. In relation to comments from Cameron and McNaughtan (2014), most role-players reflected on the importance of RELATIONSHIPS to achieve project goals. It is thus in their best interests to engage in positive activities to ensure stable/positive RELATIONSHIPS and subsequent successful outcomes. Due to the strong '*Dependence on others*' during the project, and in agreement with the findings of Acharya *et al.* (2006), the commitment shown from others, influences team effectiveness and performance. If others are committed, the RELATIONSHIPS are strengthened, because of the trust gained. The inverse could be identified if others show "*Apathy*" towards the project goals.

The impact of the client involvement and the subsequent role they play in construction is undeniable. In agreement with, and elaborating on Walker (2011), the client RELATIONSHIPS are unique to the construction industry; and they are highly influential; and they impact the other role-players' performance, focus and RELATIONSHIPS. The manner in which consultants and contractors focus on building the RELATIONSHIPS with the clients is clear; but it is also perceived as the effect on performance, which can be both positive or negative.

Finally, the research confirms that RELATIONSHIPS are key to overall project success (Acharya, Lee and Lee, 2006).

5.6.2 COHESION

Table 20 represents the 27 codes, which make up the category of COHESION:

Table 20: COHESION category-related codes (Researcher's Construct, 2017)

Code No.	Codes
1	It takes time to trust
2	Technical competence/ability
3	Transparency
4	Cohesive Actions
5	Part of a team
7	Relationships
8	Dependence on others
10	Procurement
11	Control Freaks
12	Given Ownership/Responsibility
13	Internal support
15	Technical competence trumps all
19	Giving or casting vision
20	Project Planning/Strategy
21	Pro Active actions
22	Staying focused on the project
23	Information gathering by the PM
24	PM Software
27	Budget
28	Client
29	Communication
30	Meetings
31	Professional Consultancy fees
32	Site
33	Personal
35	Apathy
37	Momentum

Figure 31 shows the 27 codes which influence, cause and relate to the category of COHESION:
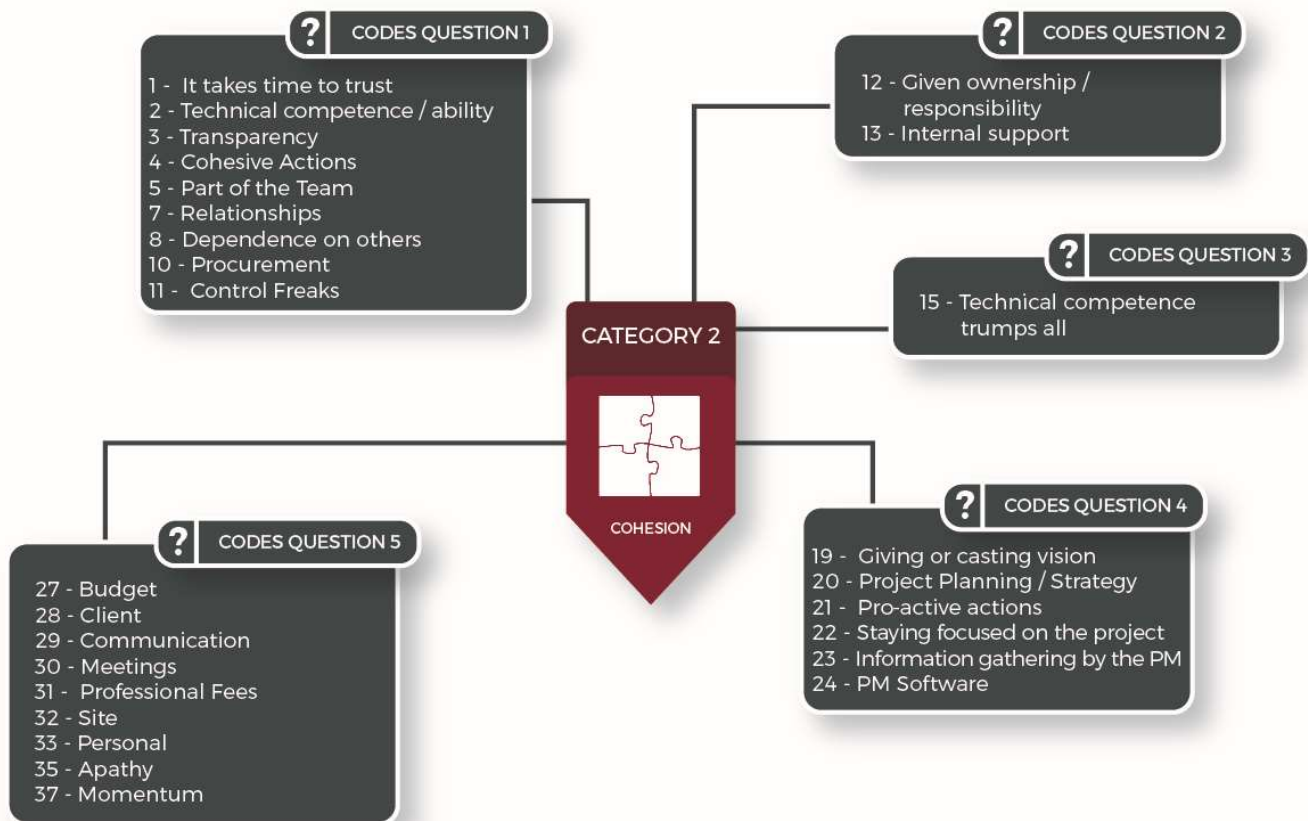
Figure 31: COHESION category – related codes (Researcher's Construct, 2017)

COHESION has been defined as "a group property with individual manifestations of feelings of belonging or attraction to the group" (Lieberman *et al*., 1973: 337). The members are in some instances focused on intentionally creating COHESION, or setting the scene for others to feel part of the group, and also to be attracted to it. The level of COHESION within the team has an impact on performance. The discussion of related codes, which make up this category, will explore the impact and also what assists or destroys COHESION in these project teams. The respondents revealed the following:

- *It takes time to trust* – Trust as a factor which assists COHESION in teams and can be seen to only be gained over time. The expectancy of subsequent gains in team COHESION in line with the trust among the role-players should then be understood and nurtured as a possible performance driver. Nurtured in a

focused manner, but allowing time for team members to become cohesive. These statements agree with the existence of a time period, during which trust is built and nurtured, as noted by Drexler's team-performance model (1991).

- *Technical competence/ability* – The high regard that role-players place on the competence and ability of the team members could impact the team COHESION. The reliance and expectancy on others to perform their roles on the project has a direct impact on team COHESION. Members and teams, which are supplied with competent and able inputs are more likely to respond positively and to show cohesive behaviour.

- *Transparency* – Direct links and influences could be noted between the transparency of the role-players and the COHESION of the teams. If there are transparent actions, then the role-players indicate a growth in trust, which increases the role-players' affinity with the group, which could be a source of COHESION.

- *Cohesive Actions* – The clearest way to see the value that role-players find in team COHESION, can be found in the direct purposeful actions they take to create COHESION. Ultimately, the actions could also be self-serving; but the intentional actions – to make others feel that they belong in the team – are taken to improve the performance of the team. Smyth (2015) confirms the actions taken by the role-players, noting that the management of relationships is a sure way of improving the performance of the team.

- *Part of a team* – Being part of a team seemingly motivates role-players. It can be deduced that the sense of belonging is motivating; and that COHESION in teams could be a preconceived outcome when entering this environment. The role-players expect and need team COHESION.

- *Relationships* – As a tool to create and sustain COHESION in teams, relationships play a major role throughout the project. Teams can identify the role that relationships play in building COHESION; but also the effects that bad relationships have on COHESION and the ensuing performance (Meng, 2012). Varying levels of COHESION could be seen to exist; and the role-players reflected on the comfort level, which exists in these professional environments.

However, these should not be exceeded to ensure that "over" COHESION exists; since this could possibly cloud one's future judgement.

- *Dependence on others* – Related to the expectancy of COHESION, role-players reflect on and understand the dependence inherent in this environment. The dependence on others reflects on the need for COHESION, in order to be able to perform properly on these project teams.

- *Procurement* – Many of the mentioned sub-code references to procurement have implications for the COHESION of teams. The manner in which teams are procured, in many ways influences the possibility of having proper cohesive teams, which in turn are able to perform well. These influences reflect on:

  - How and when the contractor becomes involved;

  - The possibility and advantages of re-appointments; and,

  - The timing, background and competence of the PM.

  These views are in agreement with comments indicating that more traditional methods of procurement have the tendency to create adversarial clients and negative contractor relationships (Bresnen and Marshall, 2000). In an attempt to guide teams to higher levels of COHESION, Kadefors, Bjorlingson and Karlsson (2007) proposed that the assessment of the attitudes and teamwork potential of contractor partners should also be highly developmental.

- *Control Freaks* – COHESION in teams is affected by the actions of others. The reader should appreciate that overstated control actions could negatively affect the COHESION in teams in terms of the expressed lack of trust in others, as noted by the rest of the role-players working with '*Control Freaks*'.

- *Given Ownership/Responsibility* – The extent to which role-players on the team are given ownership and responsibility to fulfil their role, seemingly increases their motivation to perform. The positive outcome of the implicit valued input and trust in ability, when such responsibility is given, has great potential for creating well-performing individuals. Through the influence of the high regard for '*Technical competence/ability*' and '*Dependence on others*', these performing individuals are able to support each other well; and they are bound to form cohesive teams.

- *Internal support* – In line with the positive performance outcomes reflected on above, if role-players are well supported by their employer organisation, the potential exists for healthy levels of COHESION in the team. The impact of internal support received by role-players is supported by Walker (2011:26), who notes that organisational support improves both the performance and the job satisfaction. Thereby both the team and the individual benefit from the internal support, creating an opportune cohesive environment.

- *Technical competence trumps all* – With respect to diversity in the teams, the performance parallels can be drawn between performance and the possibility of having cohesive teams. Role-players overwhelmingly noted the cohesive possibilities when a person is thoroughly competent.

- *Giving or casting vision; Project Planning/Strategy; Pro Active actions; Staying focused on the project; Information gathering by the PM; PM Software* – Many of the PM-related codes reflect environmental managerial issues, which the PM is required, or expected, to maintain. The environmental issues impact managerial issues, such as planning, keeping others focused, information gathering and the use of project-management software. This maintenance then positively influences the role-players' performance, which creates a platform to engage in cohesive actions. If the role-players are given the opportunity to operate in such a performance-conducive environment, the reader could appreciate the positive impact on team COHESION.

- *Budget* – The effect of restraints on budgets – and even worse, non-payment can definitely be noted in relation to the COHESION in the team. The mentioned budgetary issues have the potential to influence the environment negatively; and they would influence how the team deals with the need to belong, or to be attached to the team.

- *Clients* – Through the interpretation of the many client-related sub-codes the manner in which clients are and could be satisfied is influenced by the actions of the entire team. This dependence on each other to ensure that the client is 'happy' at the end of the day has good implications for team COHESION. The consistent performance actions taken by others, or the lack thereof, influence the COHESION. If some feel aggrieved at the client focused outcomes, the

team COHESION would be dealt a blow. The more negativity there is related to client satisfaction, the greater the possibility of each role-player reverting to self-preservation, and not acting in a pro-cohesive manner.

- *Communication* – The links between communication, relationships and COHESION are unmistakeable. Communication again can be seen as both a creation tool and the outcome of well-formed and healthy relationships. These relationships build towards and are integral in the formation of cohesive teams. The manner in which the communication takes place, the open lines of communication, and the subsequent positive environment thereby created, are conducive to the realisation of cohesive teams that can perform optimally.

- *Meetings* – As a place of interaction between the role-players, meetings can be reflections of the level of COHESION in teams. Firstly, in the way that team members react to and are willing to be part of or play their role in meetings; and secondly, also the actual need for meetings. Highly cohesive teams might have different needs than those teams that are less cohesive. These needs should be identified and addressed by the PM.

- *Professional Consultancy fees* – The commentary related to professional fees creates a relationship between consultants being paid a decent fee and, in return, giving an appropriate level of service. It seems that items, such as professional fees, which impacts performance, has implications for team COHESION. The implication on COHESION being either positive or negative, and linked to the level of performance which could well be linked to the decent fee paid, or not.

- *Site* – It was reflected on in the sub-codes that the construction site, as the production area is influenced by external factors. Some factors indicated the influence of the role-player project team and their current attitude or manner of communication with the contractor's representative. The influence on performance could be linked to the level of COHESION of the project team and the impact that has on the site operations. This influence reflects on the extensive impact of COHESION among the project team members.

- *Personal* – When working with people, one would be ill-advised to underestimate the individual and personal issues, which influence COHESION

and performance. In many such cases, role-players reflected on having pride in their work and being valued or recognised. This creates both a positive environment; and it impacts positively on performance. If sustained, the performance of the role-players could ensure higher levels of team-member COHESION. The mentioned positive COHESION is implied on the premise that the performance of the team members is linked to positive impacts on COHESION.

- *Apathy* – The apathy shown by others has logical links with negative impacts on team COHESION. Cohesive teams would not experience too many apathetic actions or attitudes.

- *Momentum* – COHESION could be seen as one of the forces, which have the ability to conserve, create, destroy or decay project momentum. Teams that are cohesive would be more likely to exert the effort and take the necessary actions, due to their current high level of COHESION, to conserve the project momentum. And, the opposite could also be true in less cohesive teams which are not being able to, or express the need to conserve the momentum, which then automatically causes momentum decay.

5.6.3 TRUST

Table 21 represents the 23 codes, which make up the category of TRUST:

Table 21: TRUST category – related codes (Researcher's Construct, 2017)

Code No.	Codes
1	It takes time to trust
2	Technical competence/ability
3	Transparency
4	Cohesive Actions
5	Part of a team
6	Continuity of team members
7	Relationships
8	Dependence on others
10	Procurement
11	Control Freaks
12	Given Ownership/Responsibility
15	Technical competence trumps all
17	Expectations of the PM
20	Project Planning/Strategy
21	Pro-Active Actions
25	PM – Adding no value
26	PM - Incompetence
28	Client
29	Communication
31	Professional Consultancy fees
33	Personal
35	Apathy
37	Momentum

The Figure 32 below diagrammatically highlights the 23 codes, which influence, cause and relate to the category of TRUST:
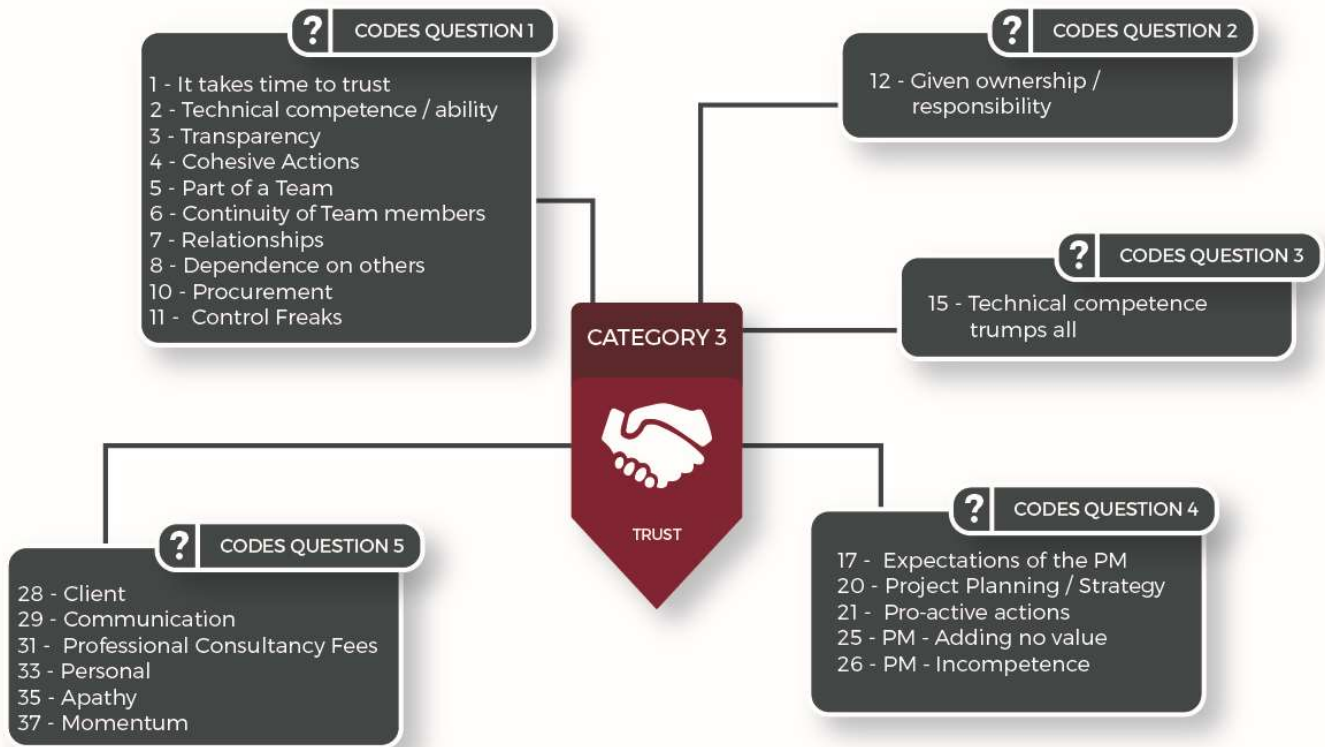
Figure 32: TRUST category – related codes (Researcher's Construct, 2017)

TRUST was noted as having an impact on the manner in which role-players operate and perform in their project teams. The respondents indicated definitive commentary on the various impacts of TRUST among the role-players. These impacts are discussed in the sections that follow, which relate to the codes that form part of this category. Interpretation of the respondents' feedback exposed the following issues:

- *It takes time to trust* – The impact of time on the growth of TRUST is expressed. When focusing on the TRUST component, it becomes clear that role-players required a series of interactions and performances from others, in order to be able to TRUST them. Smyth (2015) adds to the discussion by indicating that:

  - Trust is a valuable source of social capital;

  - Gaining trust should be a focal point for all role-players; and,

- Trust is evidenced by behaviour.

- *Technical competence/ability* – In most of the expressed opinions during the study, role-players noted a feeling of distrust when someone is not competent and able in their role. Consequently, implications for TRUST gain are clear.

- *Transparency* – Some actions taken by role-players reflect transparency and are related to the perceptions, which others create on the trustworthiness of other role-players. If role-players act and are perceived to be transparent, TRUST is gained; and conversely, a lack of transparency breeds distrust between the role-players. Here again, special mention should be made of the transparency of those actions, which involve financial inputs.

Finally, the transactional nature of the process of gaining TRUST, was identified. In this process, parties interact with each other in trust-building interactions. Adding to the clarification of what "*Transparency*" means for team members, Walker (2011) indicates that integrity and demonstrated concern are seen as components of TRUST.

- *Cohesive Actions* – Role-players take specific action to engage with others, in order to gain their TRUST. The TRUST gained is able to assist with future transactions and interaction, both of which would make individual and team performance better.

- *Part of a team* – TRUST, as part of an ideal team environment, could be a perceived expectation of role-players. Role-players require others to TRUST them; and they need to TRUST others, in order to feel that they are truly part of a team.

- *Continuity of team members* – In line with the above-mentioned commentary relating to the time spent together impacting the level of TRUST in project teams, the continuity of team members has a direct impact on the levels of TRUST. Continuity of role-players on a project has the net effect of extending the time spent together or interacting. If the interactions are consistently positive, the continuity will be advantageous for TRUST gain. Chinowsky *et al.* (2008) confirm that teams need time to develop into high-performing teams.

To the contrary, as mentioned in the code, there are times when a break in continuity can actually assist team interactions to compensate for previous losses in TRUST, which then redirect the current direction. All of these actions do then again assist TRUST building; and they create an environment, in which role-players are able to perform well.

- *Relationships* – TRUST is an integral part of positive relationships. Understandably, if the foundation of TRUST exists within the team, the potential for healthy relationships is infinite.

    One interesting benefit of TRUST relationships on a project, noted by Zaghloul and Hartman (2003), is the major monetary savings.

- *Dependence on others* – In an intricately dependent environment, the TRUST in others is influential. The dependence on others runs deep and wide in projects reflecting on the issues raised in the study with respect to future work, peripheral staff, technical inputs and financial information. Thus, where TRUST is lacking regarding any of these project elements, many impacts can be identified which are linked to TRUST. These impacts involve relationships, team COHESION, and finally overall performance. Furthermore, it is noted that clients do not distinguish between organisations and their representatives; and they see them as "one and the same" (Smyth, 2015). Thus, if a client distrusts the representative on the project, that implies distrust in the organisation itself.

- *Procurement* – The platform for interaction is created by procurement. If this platform is conducive to the building and maintenance of TRUST, many performance benefits could be gained. ECI and the re-appointment of teams were identified as procurement methods or strategies, which create trusting environments. Currently, the impact of SMEs, PM appointments, internal red-tape and project planning from the client's side, strain the procurement activity, with subsequent effects on the TRUST between role-players – and finally on the performance of teams.

    Increased corruption, political interference and institutional barriers are noted as local problems linked to procurement reflecting on a loss of TRUST in the industry (CIDB: South Africa, 2011; SAPA, 2013). When investigating the importance of TRUST in project-partnering success between clients,

contractors and consultants, Wong and Cheung (2004) indicated that clients and consultants rely heavily on contract terms (systems-based trust), and contractors rely mostly on action/behaviour (performance/permeability). In this study, most of the commentary related to action and behaviour and very little reliance was placed on systems and contracts.

Team formation has a major impact on the TRUST, or the lack thereof, in project teams. In cases A and B, ECI was employed as a procurement strategy, as mentioned before. Many of the role-players commented on how this created a 'better' team environment. This could be clearly linked to Lencioni's team dysfunctional model (Werner *et al*., 2011:160), which shows the "absence of trust" as the basis of the dysfunction suffered so frequently in teams.

Finally, the following comment is pertinent to the discussion above: "Relational Contracting moves away from market and procurement-driven approaches and turns towards relational capabilities that flow from the contract and the governance is based on trust" (Smyth, 2015). Pishdad-Bozorgi and Beliveau (2016) further state that Integrated Project Delivery (IPD) and TRUST on projects have a "symbiotic relationship" with IPD actually enhancing TRUST.

- *Control Freaks* – Actions taken by others; and the manner in which they operate, give an indication of the level with which they TRUST others. '*Control Freaks*' do not TRUST others to do what they are supposed to do. The outcomes of these interactions are the possible distrust from all those involved. These comments are in clear contradiction of the following section and of the discussions relative to '*Given Ownership/Responsibility*'.

- *Given Ownership/Responsibility* – The actions taken to give others ownership/responsibility reflect TRUST. This TRUST, denotes the ability, competence and work ethic to produce or perform, as requested. There seems to be a link between the manner in which role-players are trusted and the way in which they are able to TRUST others – by giving them ownership and responsibility.

- *Technical competence trumps all* – The diversity of role-players, according to role-player feedback, is not a TRUST barrier. But as with most other linked commentary, the technical competence of role-players is very important. This

seems so important, that TRUST could only be gained if role-players are found to be competent and able. In this regard, the feedback indicates no affinity to a role-player's specific diversity. The bottom line is that someone must be competent. Thereafter, TRUST and other relational elements can gain focus.

- *Expectations of the PM* – Feedback reflects that there are high expectations of the PM on a project. The extent to which the PM is able to meet the expectations has many outcomes. One outcome is that role-players could identify the areas, in which expectations were not met: either through incompetence, or the lack of ability. And as mentioned previously, role-players seemingly only TRUST those who are competent and able to meet their responsibilities thoroughly.

- *Project Planning/Strategy; Pro-Active Actions; PM – Adding no value; PM - Incompetence* – As discussed earlier, links can be found with the many critical issues raised reflecting the PM's lack of ability and competence. This lack creates distrust in the PM. If the PM is not able to provide a proper plan or project strategy, to be pro-active, to add value, or to be competent, role-players would not TRUST them.

- *Client* – In general, many of the client-related sub-codes reflect the need to gain the client's TRUST. The consultants propose to gain the TRUST by focusing on the client and meeting or exceeding his/her expectations.

- *Communication* – In the process of gaining TRUST, communication seems vital. Here, the role-players reflected on the need to have open lines of communication, and also to be communicated with in a proper manner. The mentioned components of communication do assist in TRUST building.

- *Professional Consultancy fees* – Distrust flows from the lack of performance seemingly caused by discounted fees. With regard to the lack of acceptable levels of performance, previously expressed links between performance and TRUST could again apply to this code when viewed as part of the broad TRUST category explanation.

- *Personal* – In an environment, in which role-players take pride in their work and their inputs are valued and recognised, a logical conclusion could be that TRUST would flourish, as the igniter of further relationships.

- *Apathy* – The major outcome of apathetic attitudes in projects is a lack of required performance. This lack of performance leads to a lack of TRUST between the aggrieved role-players and the non-performer.

  Through the actions of role-players, some members of the team withdraw their enthusiasm and inputs. This withdrawal has the following impacts:

  Firstly, the team members withdraw their intellectual input into the design and building process. And, in some cases, these individuals are highly skilled and academically qualified role-players with many years of experience, whose inputs are very valuable.

  Secondly, role-players give themselves the moral grounds to distance themselves from, or, to be apathetic with regard to mistakes, bad quality or even on the positive side, the success of the project. It was indicated that apathetic role-players would not take part in the positive or negative aspects of a project. These role-players would not immerse themselves in the project, as a living organic growth point or be a participant. Where role-players were found to be apathetic, it seems that all participants are negatively influenced and it is a lose-lose scenario for the apathetic party and other role-players. Acharya *et al.* (2006) reinforced this notion, when noting that team commitment is an important factor influencing team effectiveness.

- *Momentum* – Many of the issues raised above reflect on the severe outcomes of distrust in role-player teams. The levels of TRUST between role-players could be a reflection on the overall direction of momentum at any given stage during a project. This indicates that if the levels of TRUST are high, the probability is also high that positive-project momentum (PPM) is created; and that role-players would aim to conserve this. In most instances, the reverse is also true. Were momentum decay or destruction kicks in, role-players revert to a self-preservation status, in which little is done to reverse the negative project momentum.

In summation of the above commentary on the TRUST category, the respondents noted higher performance potential when:

- Trust exists;

- They are given time and opportunity to gain trust in each other; and,

- Effort was exerted to achieve the trust as a result.

Trust is gained through the following actions:

- Role-players' competence or ability;

- Engaging and interacting in trust transactions;

- Openness; and,

- Transparency.

5.6.4 COMMUNICATION

Table 22 represents the 18 codes, which make up the category of COMMUNICATION:

Table 22: COMMUNICATION category – related codes (Researcher's Construct, 2017)

Code No.	Codes
1	It takes time to trust
3	Transparency
4	Cohesive Actions
6	Continuity of team members
7	Relationships
8	Dependence on others
10	Procurement
12	Given Ownership/Responsibility
13	Internal support
14	Small Organisations
17	Expectations of the PM
18	PM - role in motivation
19	Giving or casting vision
20	Project Planning/Strategy
21	Pro-active actions
22	Staying focussed on the project
23	Information gathering by the PM
24	PM Software

Figure 33 highlights the 18 codes, which influence, cause; and relate to the category of COMMUNICATION:
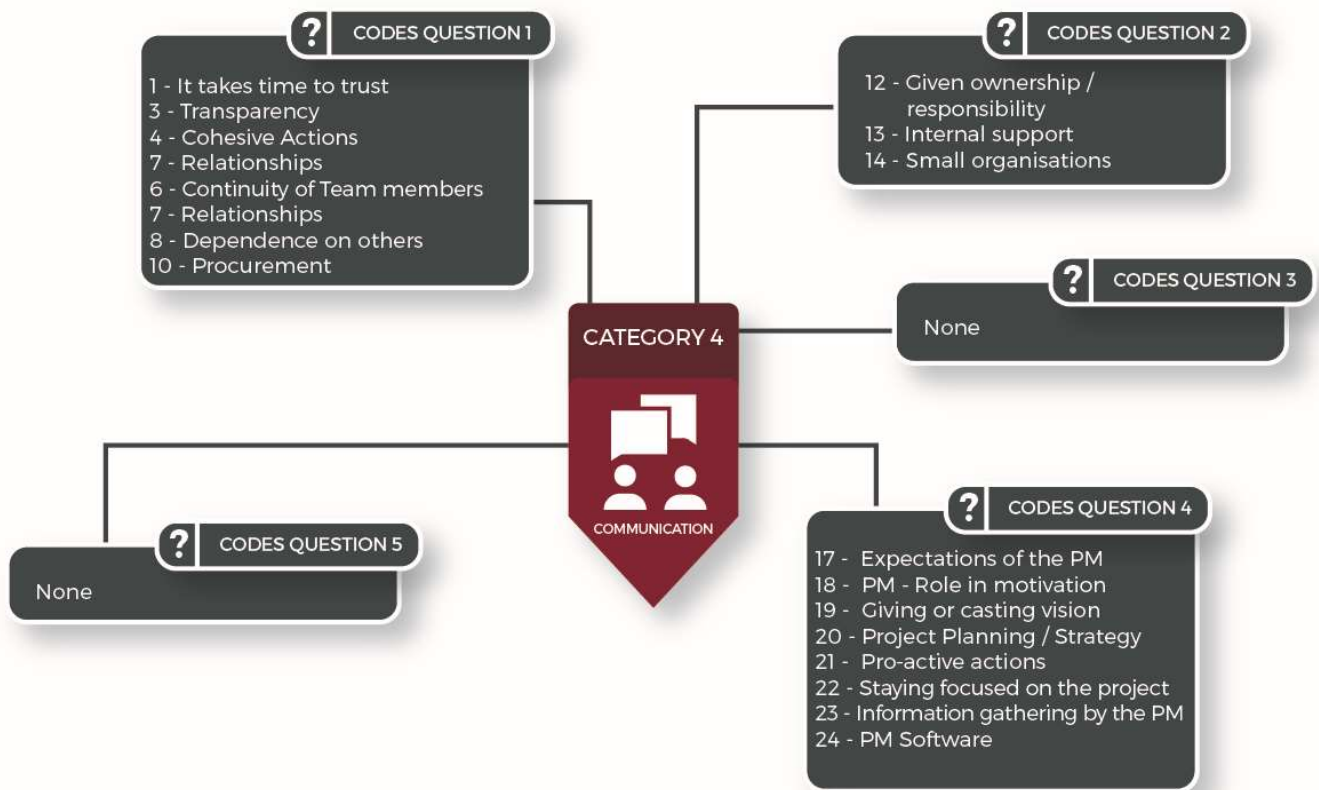
Figure 33: COMMUNICATION category - related codes (Researcher's Construct, 2017)

COMMUNICATION as a well-documented, researched and important aspect in most business operations, was identified as a category (Verma, 1996). The influence of COMMUNICATION could be felt far and wide within role-player teams; and it clearly has an effect on role-players' performance. Griffith and Watson (2003) go as far as stating that in construction, COMMUNICATION could be the "most important management function". The commentary reflects on the effectiveness, the outcomes and the impact of COMMUNICATION among the role-players. Interpretation of feedback revealed the following issues:

- *It takes time to trust* – Consistent project communication over an extended period of time gives rise to trust between the role-players. COMMUNICATION is the glue connecting the entire multi-disciplinary and stratified role-player group.

- *Transparency* – Transparency in both the manner, and what is communicated is important for role-players. As the link among role-players, COMMUNICATION messages reflects all the actions taken and the transactions engaged with to date. If the COMMUNICATION is transparent in manner and input, it is highly likely that positive transactions can take place to increase performance over the broad spectrum of role-players' activities.

- *Cohesive Actions* – This code reflects on many COMMUNICATION aspects; but the outcomes of such COMMUNICATION aim for the achievement of positive cohesion. The focused actions reflect on COMMUNICATION around project- related issues, which, through the interaction, are purposefully creating more cohesion within the team.

- *Continuity of team members* – Readers should appreciate that team members who have worked together over an extended period of time can communicate more effectively; and also, due to all the history, should be able to adjust and adapt to each other's preferred methods and styles of COMMUNICATION. Non-continuous involvement weakens the relational and collaborative dimensions, such as COMMUNICATION (Bresnen and Marshall, 2000).

- *Relationships* – A common thread, which runs through the process of building relationships and maintaining them, is the way that COMMUNICATION impacts on this process. Without COMMUNICATION, relationships probably, by definition, do not exist. Therefore, a lack of relationships is linked to destructive COMMUNICATION or the lack of COMMUNICATION altogether.

    Reflecting on the socialising of project teams, it could be seen that some of the interaction incorporates COMMUNICATION. In these cases, socialising serves the purpose of breaking the barriers of project-related issues; and it moves towards personal discussions, which are, for instance, related to sports, recreation, philosophy, etc.

- *Dependence on others* – Project-related dependence reflects on the information to be given, distributed, forwarded, etc. All of the mentioned dependence interaction is COMMUNICATION-based, which indicates the extreme importance of COMMUNICATION, and its impact on role-players' performance.

- *Procurement* – ECI and the re-appointment of consultants and contractors leverages on continuity and cohesion, which finally refine the relationships by making the COMMUNICATION between the parties more open and effective. Teams operating together over an extended period have many advantages. One of these is the way in which they are able to communicate from the basis of previous interactions with each other. The responses from Case D reflected on this mature manner of operation, in which the role-players know each other well. Black, Akintoye and Fitzgerald (2000) confirm that partnering approaches do succeed, when good COMMUNICATION exists.

- *Given Ownership/Responsibility* – The actions taking place to "give" role-players ownership/responsibility are actualised through the function of COMMUNICATION. Not only the formal wording, but also the informal COMMUNICATION and body language, which indicates to one another that they are tasked and well able to do what is required.

  Trust is reflected through such idyllic COMMUNICATION; and it has the possibility to really catapult deserving recipients to greater effort and performance. In groups of project role-players, these interactions should be leveraged to increase performance. Nicholas and Steyn (2008:546) confirm the many advantages of giving ownership and responsibility, by noting that team members feel responsible for solving problems.

- *Internal support* – The support required from role-players goes beyond just the main representative on the project team. The COMMUNICATION channels and methods used, go beyond the inner circle of role-players. The extended COMMUNICATION should be discussed and even formally put in place, in order to ensure that the internal organisational support can be engaged with; and that it is accessible, as and when required by the external parties.

- *Small Organisations* – Commentary did indicate a definite ease and shorter turnaround time of COMMUNICATION in smaller organisations. This is possibly an outcome of flat organisational structures, or in many cases, sole operators having all the "say" or control in the organisation. These advantages are inherent in small organisations; and they are not necessarily due to the skill or ability of the role-players in these organisations.

- *Expectations of the PM* – The noted understanding by PMs of the high expectancy from other role-players relating to taking total control and having 'everything' in place, is possibly an outcome of COMMUNICATION. Although the researcher proposes that many of these high expectations are possibly not communicated directly; but is rather expressed over time, and an understanding is created through the many interactions with the other role-players, which shape this expectancy.

- *PM's role in motivation* – COMMUNICATION is seen as a channel through which motivation occurs. The motivation coming through this channel is a contributor to performance. In the cases where PMs were able to use COMMUNICATION as a motivation channel, it assisted performance.

- *Giving or casting vision; Project Planning/Strategy* – both the explanation of what the future could hold and the empowerment of others through vision, planning and strategies, are actualised through COMMUNICATION. Before many future project outcomes and goals are achieved, they live in the minds of the role-players – and only through the words communicated do they envisage these. Plans and strategies are possibly easier to communicate through verbal, written and electronic formats, than via project vision.

  It is noticeable that the impact of COMMUNICATION, in all instances, is important to role-players. For PMs, Lee and Tiedens (2001) noted that people who acquire and maintain power, communicate well, and frequently, with others.

- *Pro-active actions* – Tactful COMMUNICATION plays a major role in unblocking bottlenecks, once a possible issue has been identified. The COMMUNICATION should not create more issues; but it should merely resolve the current one. Colin *et al.* (2015) remind the role-players that any assistance given on projects should be tactful and aware of the vulnerability of others.

- *Staying focused on the project* – The feedback indicated the need for consistent tactful COMMUNICATION by the PM. This COMMUNICATION should not be aimed at harassing or embarrassing the role-players; but it should keep the team focused on the current and on any upcoming goals or outcomes.

- *Information gathering by the PM* – The activities revolving around the role-players' requests for assistance from the PM to gather information all reflect on the level of COMMUNICATION. This would clear bottlenecks and resolve the issues surrounding certain outstanding information.

- *PM software* – The users of these software applications, mainly in Case A, were very positive with respect to the COMMUNICATION platform it creates. This platform made many project discussions and requests transparent. It was also open for all of the role-players to converse on; and it had the functionality to provide the historical background, which enables reflection during each online discussion, or in face-to-face meetings. Although CHALLENGEs with using PM software are mentioned, most authors confirm positive outcomes, provided the software is applied correctly (Froese, 2010; Lee and Yu, 2012; Ofori, 2012).

5.6.5 CHALLENGE

Table 23 represents the 18 codes, which comprise the category of CHALLENGE:

Table 23: CHALLENGE category-related codes (Researcher's Construct, 2017)

Code No.	Codes
4	Cohesive Actions
5	Part of a team
7	Relationships
8	Dependence on Others
10	Procurement
12	Given Ownership/Responsibility
16	Industry shortcomings
18	PM – Role in motivation
19	Giving or casting vision
22	Staying focussed on the project
27	Budget
28	Client
29	Communication
30	Meetings
31	Professional Consultancy fees
32	Site
33	Personal - Pride in my work
34	New/Different
35	Apathy
36	Fear of losing my job
37	Momentum

Figure 34 shows the 18 codes, which influence, cause and relate to the category of CHALLENGE:
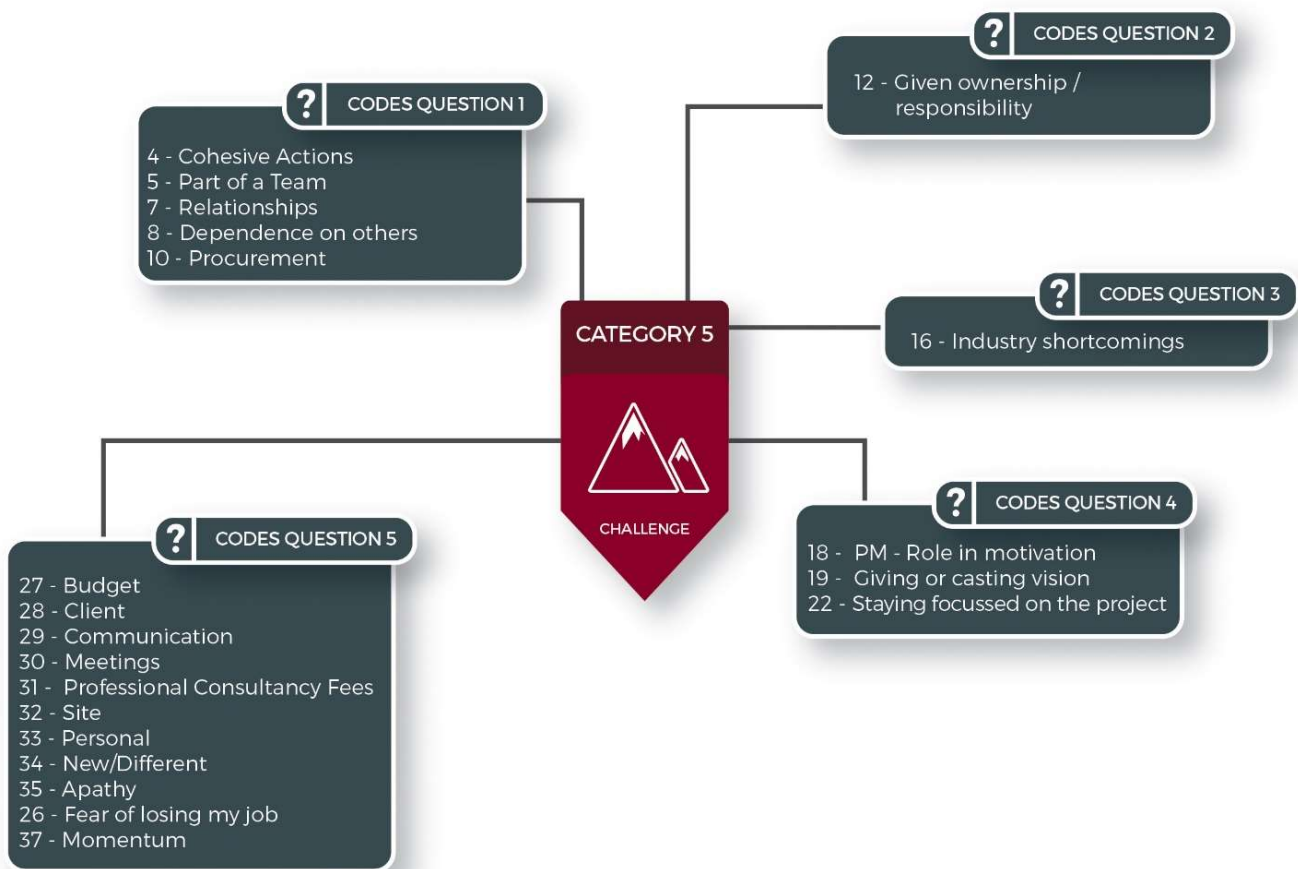
Figure 34: CHALLENGE category-related codes (Researcher's Construct, 2017)

The role-players have a great affinity for the CHALLENGE that the project, team interaction, new procurement types, design, etc. brings. These CHALLENGEs seem to motivate; and in some instances they even sustain the motivation throughout the duration of the project. The category choice is in agreement that the construction industry is a challenging environment for all the role-players (Ballard and Howell, 2004b; Herroelen and Leus, 2004; Shelbourn *et al.*, 2006; Bertelsen *et al.*, 2007; Rezgui, 2007). Following is a discussion of the interpretation of the feedback related to the category of CHALLENGE, as well as the links between the myriad of codes:

- *Cohesive Actions; Part of a team; Relationships; Dependence on Others* – In the environment, in which role-players find themselves, there are many

CHALLENGEs. Some of the CHALLENGEs relate to the team itself, the dynamics between the role-players, the intricate relationships and how these factors affect the successful outcome on a project. There are noticeable and inherent responsibilities and expectations of performance, with respect to role-players being part of a team.

It was found that some role-players address these team and role-player CHALLENGEs and strategies in the following ways:

- Taking action to increase cohesion in the team;

- Making an effort to be part of the team;

- Actively engaging in role-player relationships – to the advantage of the team environment and possible successful outcomes; and,

- Understanding the interdependency of the role-players; and taking the necessary actions to meet their responsibility.

Similar positive sentiments were found in the '*Cohesive Actions*'; '*Part of a team*'; '*Relationships*'; '*Dependence on Others*' codes reflecting on some role-players' understanding of the CHALLENGEs that this team environment brings, and actually, embracing them. Jay (2003:26) alludes to a possible answer, when stating that team members could also be motivated by the "prospect of collective achievements and awards"; and they do so by collectively overcoming the various CHALLENGEs.

As part of the CHALLENGE undertaken by a role-player, they also seem to agree that a long-term vision of what will be created and visible to them and others (in these cases, buildings) would be motivational. This motivator relates to the benefit added to the community of users and the recollection of the project role-players' hard work, tough situations, conflict, budget constraints, creativity, team spirit, etc., which, in the end, created a building or structure as the overall tangible outcome, with the understanding that this is accomplished by many people working together towards a common goal.

- *Procurement* – Progressive procurement strategies challenged the role-players; and, in many instances, they did add to the motivation of the role-players.

- *Given Ownership/Responsibility* – In this code, respondents again indicate the eagerness to undertake the CHALLENGEs the project brings; but it is often intensified by the fact that someone in a leadership or authoritative position actually gives them the ownership or responsibility for the completion of certain outcomes; and in doing so, thereby adding powerful motivation to an already-active driving force.

- *Industry shortcomings* – Role-players indicated the current industry wide CHALLENGEs faced in relation to diversity on these types of construction project teams. As with the other CHALLENGEs, the attitudes expressed were again those of a positive disposition to take up the CHALLENGE and make an effort to overcome the industry shortcomings and be part of an overall solution.

- *PM – Role in motivation* – As noted thus far, role-players are invigorated by the CHALLENGEs that projects bring. As part of the role that a PM plays in the motivation of the others on the team, the influence could be seen in two ways:

  - Firstly, PM's could highlight the many CHALLENGEs that a project faces, in order to harness the initial motivation, which these CHALLENGEs, seemingly, give the role-players; and,

  - Secondly, the manner in which the PM accepts and is motivated by the CHALLENGEs on the project, would motivate others. The PM's positive example would encourage others to engage and be motivated by the CHALLENGEs. The negative aspects of not taking up the CHALLENGE, or having the opportunity to do so, are noted in the codes '*PM – Adding no value*' and '*PM – Incompetence*'.

- *Giving or casting vision* – Giving or casting a compelling and challenging vision, to the team, as noticed, is an underlying need of the role-players. Related to the PM's motivational role, the vision could indicate many of the CHALLENGEs and possibilities faced in overcoming these issues.

- *Staying focused on the project* – In many ways, this request, as expressed by the role-players has possible implications for consistent reminders of the CHALLENGEs, both current and future. If the premise of CHALLENGEs being motivational is followed, then the mere reminders of these CHALLENGEs, could activate the desired performance.

- *Budget* – The financial aspect of projects brings with it its own set of CHALLENGEs. Parts of these CHALLENGEs definitely seem to motivate role-players. The drive created to work within the limited amount; and also create the highest value possible reflects on this fact. Ofori (2012:242) agrees that the attainment of the highest value for clients is a project CHALLENGE.

- *Client* – The involvement and reliance on the client adds many CHALLENGEs to the construction-project environment. Role-players could be seen to react to this positively and to engage with the related CHALLENGEs:

    - Focusing specifically on the client as the provider of work;

    - The quest to impress first-time clients;

    - Aiming to negate the many financial and contractual project related CHALLENGEs; and

    - Meeting, exceeding and giving sustainable long-term solutions.

  It was *clear that the c*lient representatives are motivated by the CHALLENGEs in similar ways to the other role-players.

- *Communication; Meetings* – The communication between the various role-players comprising multi-disciplinary operatives, are challenging. The main CHALLENGEs being the open lines of communication; the manner in which to communicate with others; and differing views on the importance and function of meetings. Overcoming these CHALLENGEs is critical for the creation of a positive performance-driven environment.

- *Professional Consultancy fees* – The discounting of professional fees is an industry-wide CHALLENGE. This was the only noted CHALLENGE that gave the impression that consultants feel hopeless. The fact that this affects their livelihoods and wealth-creation directly, seems to strain their motivation.

- *Site* – The CHALLENGEs which were identified for the construction site were management, weather and quality. In these cases, the management and the weather-related CHALLENGEs were almost entirely contractor-focused CHALLENGEs. This could be seen to intensify the CHALLENGEs faced by contractors, because of having to deal with all the other CHALLENGEs met by the team; and over and above that, to still deal with specific site issues.

Quality again is a common CHALLENGE for the role-players – in trying to reach a suitable end-product. But although others have input, the quality is solely an outcome of the contractor's actions; and therefore it is a major CHALLENGE for them.

The greatest test or CHALLENGE for the contractor comes during construction. This deduction is logical; but the impact is quite severe. This is due to the fact that the rest of the team is not under pressure (in most cases); but the contractor still has to contend with all the unknowns of each day. The design, on the other hand, is complete in most situations. Thus, most of the team are just hovering around the project, and just finalising the minor details etc.

In a sense, this could be positive, not to have all the parties highly strung at the same time, and dealing with project CHALLENGEs.

The contractor's representative or manager on site is usually also the channel of information from the consultants and clients to their team on site. So, they have two entirely different worlds with which to contend. Firstly, the world of meetings and professional interaction versus the day-to-day grind in his factory on site. These contractor's representatives have to contend with, in many cases, a whole range of skills and intellectual capacities.

- *Personal – Pride in my work* – As evidence of previous assumptions made in this section, the indication of the pride in the role-players' work clarifies the satisfaction, stated by the role-players, of overcoming a specific CHALLENGE and successfully operating in the challenging project environment.

- *New/Different* – The fact that new team members, technology or procurement strategies are introduced as part of a project, CHALLENGEs the role-players and motivates them to perform. In most cases, the role-players revelled in the opportunity of overcoming the new CHALLENGEs, and being able to test their mettle against the problems and the proposed solutions. This stimulates the cycle of role-players, thereby reflecting on overcoming the CHALLENGEs and having "pride in their work". Walker (2011) notes that job-satisfaction possibilities are high in the construction industry, possibly due to combatting CHALLENGEs successfully, being a satisfaction themselves.

If a CHALLENGE is overcome, it adds an arrow to the role-players quiver. This seems to give CHALLENGEs an allure for those who are enticed by personal growth, and recognition of the fact that the CHALLENGE was overcome. Next time the role-player faces a similar CHALLENGE, they would know how to handle it.

- *Apathy* – Apathy could almost be seen as the opposite of taking up a CHALLENGE. A lack of interest, enthusiasm or concern for the project reveals no willingness to engage with the current CHALLENGEs. The causes of apathy, in this research, are not exhaustive in any way; but if the many issues with the procurement of both professional services and contractors can be alleviated, this could be the start of resolving apathetic attitudes.

  There is also a sort of condemnation of those on the team who do not take up the CHALLENGE. The general stance is that all the role-players know there are CHALLENGEs; and they are invigorated by it. But if a role-player is found to not be taking ownership of project CHALLENGEs, then the others are worried; and especially the clients would condemn such behaviour.

- *Fear of losing my job* – The reader should appreciate that the moment when fear becomes a driver, CHALLENGEs are no longer merely motivational niceties; but overcoming them becomes a necessity. To overcome CHALLENGEs is seen as having make or break consequences, which, as discussed when engaging with the literature, have an unavoidable effect on the role-player's creativity.

- *Momentum* – The many CHALLENGEs that projects bring; and even more so, if they are new, seemingly motivates role-players. The initial foreseen CHALLENGEs could be the possible igniting factor for momentum on projects. Each role-player engaged and grappling with the team and with the individual CHALLENGEs and the motivation to overcome, these are identified as, literally, setting the ball rolling in usually the direction of positive project momentum. Only later, when the reality of some aspects becomes clear, or apprehension sets in related to previous experiences, would or could momentum decay begin, or destruction be anticipated.

It could even be shown that some of the project elements the role-players find challenging in industry and the current way that business is done are actually some of

the CHALLENGEs, which would motivate the role-players. Bowen, Cattell and Distellir (2008) confirm that role-players find job satisfaction in tasks that are challenging. Many writers support diversifying the industrial-production side, in order to incorporate major prefabrication and modularised building elements. It could be useful to research the effect on industries, which are not factory-based; related to role-player performance and satisfaction. One could relate to the agricultural industry, which has brought much of their animal-based production into the "factory" or indoor operations (battery hens, indoor piggeries, indoor dairies, indoor calf feedlots, etc.). However, until recently, agriculture was in its truest form, a solely external environmental process of production. The question is thus asked: Do the farmers currently feel more productive, satisfied and motivated with the work environment in the current conditions?

5.6.6 SUCCESS

Table 24 represents the 31 codes, which make up the category of *SUCCESS*:

Table 24: SUCCESS category-related codes (Researcher's Construct, 2017)

Code No.	Codes
2	Technical competence/ability
3	Transparency
4	Cohesive actions
5	Part of a team
8	Dependence on others
6	Continuity of team members
9	Learning from others/team
10	Procurement
11	Control Freaks
12	Given Ownership/Responsibility
13	Internal support
14	Small Organisations
15	Technical competence trumps all
17	Expectations of the PM
18	PM – Role in motivation
19	Giving or casting vision
20	Project Planning / Strategy
21	Pro-active actions
22	Staying focused on the project
23	Information gathering by the PM
24	PM Software
25	PM – Adding no value
26	PM – Incompetence
28	Client
29	Communication
31	Professional Consultancy fees
32	Site
33	Personal
35	Apathy
36	Fear of losing my job
37	Momentum

Figure 35 highlights the 31 codes, which influence, cause and relate to the category of SUCCESS:
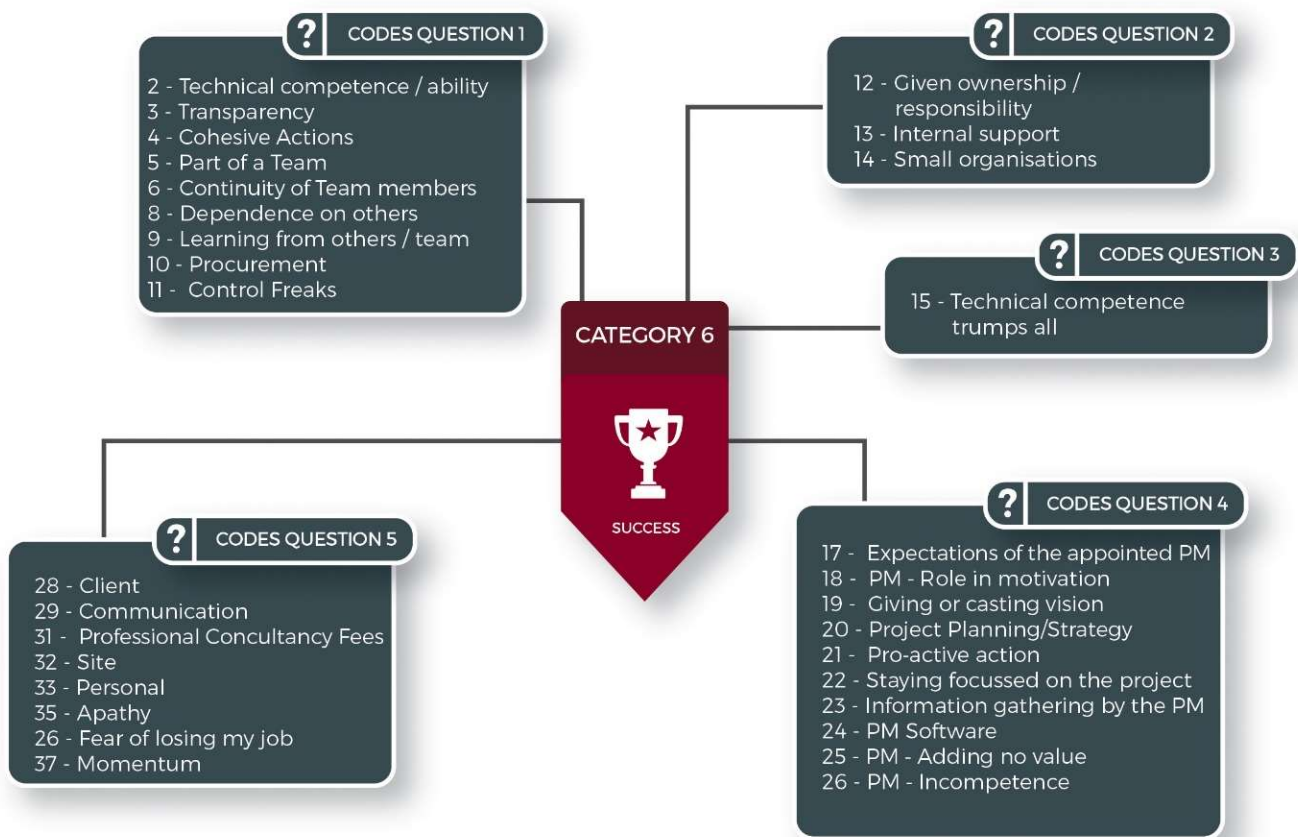
Figure 35: SUCCESS category-related codes (Researcher's Construct, 2017)

The overall aim and drive towards *SUCCESS* resounds from much of the feedback accounts and subsequent identified codes. Project SUCCESS, although ill-defined, is nevertheless, still a specific goal in the construction industry (Barnes, 1988; Dainty, Cheng and Moore, 2003; Chan, Scott and Chan, 2004; Hughes, Tippett and Thomas, 2004; Acharya, Lee and Lee, 2006; Olander, 2007; Deacon, 2011). As in the literature, it was found that there are many intricate factors and indicators surrounding project SUCCESS (Chan, Scott and Chan, 2004; Deacon, 2011).

The discussion reflecting on participant feedback with links and implications for reaching SUCCESS noted the following issues:

- *Technical competence/ability; Transparency; Cohesive actions; Part of a team; Dependence on others* – In the journey towards project SUCCESS, role-players

require many things. Some of the requirements they can influence and produce themselves; but many rely on the inputs and actions of others. In line with this statement, the influences on SUCCESS identified in the study include the following:

- The requirement to be competent and able;

- The need to act in transparent and honest ways;

- To engage and encourage cohesive professional relationships, knowing that the lack of these would influence the possible SUCCESS of a project; and,

- Enjoyment of the reality of being part of a group or team, which is commonly engaged with the achievement of SUCCESS as a goal.

All of the above reflect on the absolute dependence on others, in order to achieve SUCCESS in a project.

- *Continuity of team members* – The continuous involvement of role-players asserts the impact of previous SUCCESS and failures. Role-players learn from these successes and failures; and they presume that these lessons would assist in the attainment of future SUCCESS. Thus, the teams possibly prefer continuity in teams, rather than the constant interchange of role-players, which each new project brings.

- *Learning from others/team* – The aspect of learning from others has implications for the drive towards SUCCESS. Firstly, if others are seen to be worth learning from, then the expectation is that they are competent and able, which has positive implications for the project's chances of SUCCESS. Secondly, the internalised role-player's needs for SUCCESS, both current and in the future, could be enhanced by the prospect of learning from others and gaining technical and project-related expertise.

- *Procurement* – In agreement with the broad impact of procurement in this environment, the inclination is that SUCCESS is also greatly impacted. The basis for all interaction and operating on each project is governed by procurement. If the profound dependencies within these teams are considered, then how and who is procured to be part of each project, definitely impacts on the ultimate SUCCESS. Here, the reader should envisage why role-players

relate to the following due to the extent of impact on the possibility and realisation of SUCCESS:

- Progressive procurement;

- The appointment terms of a PMs; and

- The influence of procurement planning.

- *Control Freaks* – Enforcing the comments made on the impact of procurement on SUCCESS, many of the underlying issues with *'Control Freaks'* are that they aren't in control of those with whom they are working with – or how these people might perform. The project seemingly has too many blind alleys and with the multi-disciplinary input required, they feel out of control, and unable to do or to know everything. This lack of control impacts their view on the possibility of achieving SUCCESS.

- *Given Ownership/Responsibility* – When individuals are given responsibility and ownership of certain sections or tasks, they are responsible for the SUCCESS of that section or task; and in so doing, they contribute to the overall SUCCESS and understanding of the role that each part plays in the whole. It can then be deduced that the combination of acceptance of this responsibility and the possibility of SUCCESS, motivates such role-players.

- *Internal support* – The role-players need support from their employer organisations, in order to succeed. Without this support, the other role-players perceive a lack of performance. The idea that internal support impacts on SUCCESS, has implications for the extent and depth of requirements, when procuring role-players.

- *Small Organisations* – Respondent commentary reflected on the perceived focus and efficiency of smaller firms. Feedback linked the project's SUCCESS directly to a small firm's financial sustainability and existence. It could be seen that small firms are extremely reliant on the SUCCESS of any given project; and they might not survive even a single failure.

- *Technical competence trumps all* – Diverse role-players are required to perform their specific roles on a project. This requirement could sensibly be linked to the drive towards SUCCESS, and the technical competence and ability of a role-

player having an impact on the possibility of SUCCESS. Thus, the overall and one requirement from role-players, is that all the parties should be competent in their roles.

- *Expectations of the PM; PM – Role in motivation; Giving or casting vision; Project Planning / Strategy; Pro Active actions; Staying focused on the project; Information gathering by the PM; PM Software; PM – Adding no value; PM – Incompetence* – Not to overstate their importance, but starting with the high expectations all the way through the linked PM-related codes, the extent of the impact of PMs on the project SUCCESS is noted. In search of overall project SUCCESS, role-players expect and require much from the PM.

  The many requirements and high expectations reflect the impact on the possibility of SUCCESS; and they could be the cause for so much dissent, if the requirements are not adequately met. In relation to the influence of the PM on SUCCESS, it is noted that project SUCCESS is not only dependent on technology, techniques and processes; but it is actually greatly influenced by leadership, culture and instilling good behaviour. And as is discussed in Section (5.6.3), these 'soft' skills are not generally given sufficient attention.

- *Client* – Unlike other industries, the client in the current construction processes, plays a major role in the overall SUCCESS of a project. Their role is affected by the manner, in which projects are procured, funded and initiated; which differs drastically from the role played in other production industries, such as the automotive or appliance producers.

  The many focal points of the consultants and contractors with regard to clients are directed at the SUCCESS of the project. The achievement of SUCCESS or failure of a project unavoidably impacts current and future relations.

- *Communication* – SUCCESS on a project is directly linked to communication on a project. The environmental impacts of the required lines of communication are linked with the proper manners of communication; and they are key to the overall project SUCCESS. Many role-players commented on the absolute importance of communication, which aligns with the literature, thereby indicating (Section 2.5.9) that communication plays a pivotal role in the attainment of project SUCCESS (Verma, 1996; Sherrat and Farrell, 2015).

- *Professional Consultancy fees* – SUCCESS is highly likely if individual role-players perform. If the discounting of professional fees impacts negatively on performance, it has a direct impact on the possibility of SUCCESS. This relation is seemingly being ignored by clients or those directing the procurement strategy, due to the common practice of selecting the lowest offer. The acceptance of the lowest-priced offer is not only linked to the procurement of consultants in South Africa; but it is also reflective of the manner in which contractors are procured: and again, with similar SUCCESS implications.

- *Site* – With the major emphasis being placed on the quality of the end-product linked to client requirements and age-old performance measurement requirements, the influence of the site operation on SUCCESS is unmistakeable. The site environment is seemingly very influential; and it could be to the detriment of role-players to ignore site-related issues, which would impact on quality, as one of the highly regarded project-SUCCESS determinants.

- *Personal* – The individual role-players are aiming to succeed. The pride shown to overcome difficult situations and recognition of the valued inputs towards SUCCESS, is evidence thereof. The motivation to succeed could be questioned if role-players depict their need for SUCCESS, in order to enhance their own prominence, or to get publicity.

- *Apathy* – Apathy again stands as the enemy of SUCCESS. If role-players are apathetic, or detect this in others, SUCCESS is jeopardised. Apathy has many relational impacts, which do not bode well for:

  - The possibility of SUCCESS; and,

  - The performance levels of the person caught being apathetic.

- *Fear of losing my job* – If SUCCESS is not achieved, the role-player's fear of possibly losing their jobs, is worsened. How real these fears are, could only be seen to be linked to previous encounters in the industry, or with their current employer and the culture which rules within that specific organisation.

- *Momentum* – Overall SUCCESS could be seen as an outcome of PPM. The conservation and construction of PPM is due to many interim successes.

Gaining PPM could be, in the broader sense, the greatest indicator of the possibility of overall SUCCESS. This statement indicates that if PPM is consistently noticed and achieved, the possibility of project SUCCESS could almost be guaranteed.

5.6.7 PRIDE

Table 25 represents the 9 codes, which make up the category of *PRIDE*:

Table 25: PRIDE category-related codes (Researcher's Construct, 2017)

Code No.	Codes
2	Technical competence/ability
3	Transparency
9	Learning from others/team
11	Control Freaks
15	Technical competence trumps all
12	Given ownership/responsibility
18	PM – Role in motivation
25	PM – Adding no value
26	PM – Incompetence
27	Budget
28	Client
32	Site
33	Personal
35	Apathy
37	Momentum

Figure 36 diagrammatically reflects on the 9 codes, which influence, cause and relate to the category of *PRIDE*:
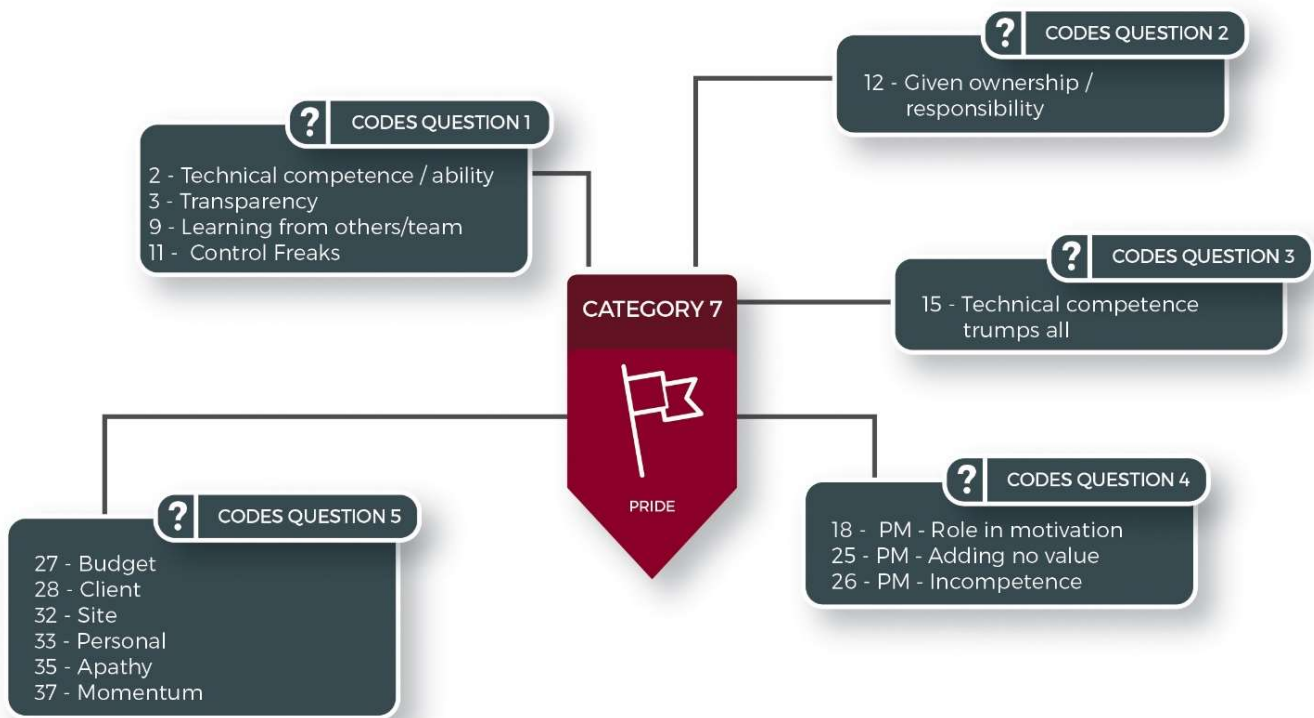
Figure 36: PRIDE category-related codes (Researcher's Construct, 2017)

The category of PRIDE is dedicated to the many personal aspects noted in the commentary. The personal aspects, which are in the focus here, indicate the personal drivers and motivators, which promote the performance of the individual. Role-players, in general, strive to do their best on projects; and they also seek to fulfil their personal goals. The discussion of the participant's feedback reflects on the following:

- *Technical competence/ability; Technical competence trumps all; Apathy* – The high regard, which role-players attach to technical competence and ability reflects the search for excellence in both themselves and in others. Role-players want others to take PRIDE in their roles, as they do. This rings true for all involved, including those role-players from diverse backgrounds. An apathetic attitude is clearly not in line with this search for excellence; and it would not produce pride-inducing outcomes.

  Werner *et al.* (2011) indicate that the performance levels of individuals relates to, among others, Inherent ability and developed competencies. Walker (2011)

concurs that competence is seen as the main characteristic of a superior performing individual. This competence forms a basis, from which to operate within these project teams.

- *Transparency* – In the environment, in which role-players take PRIDE in their work, mutual respect is important. The perceptions noted that if a role-player is not transparent, s/he would almost undermine the other role-players and disrespect their roles. The aggrieved role-players take offence of such actions; and many negative aspects are thereby set in motion.

- *Learn from others/team* – The role-players reflect a need to be able to learn from others, who are really competent in their role. They therefore accept that those role-players take PRIDE in what they do. The learning could reflect as much as the technical aspects, but also the operational skills, from which others want to learn.

- *Control Freaks* – The need for control of outcomes by certain role-players could reflect on overinflated PRIDE or ego. These cases indicate possible misplaced PRIDE and overstate the noted party's capability and outcomes to be much higher than those of others. In these cases, taking PRIDE in my work, has possibly become a very egocentric activity; and it is then not so much a positive team-assisting exercise. A point to note related to project SUCCESS or failure, is that, if a role-player takes an overweening PRIDE in what they do, it could be that when failure is a possibility, that this member might stand back and not take any responsibility for the failure. In such a scenario, client focus and ownership could falter in the wake of self-protection.

- *Given ownership/responsibility* – In a scenario, where ownership and responsibility were handed to a role-player; and that the operative, has successfully completed the task or goal, it presents a well-scripted but arrogant cycle. This positive outcome could fulfil many personal role-player satisfaction needs and induce further positive proud cycles.

- *PM – Role in motivation; PM – Adding no value; PM Incompetence* – The extent to which the PM takes PRIDE in his work; and the manner in which he operates, motivates the other role-players. In the codes, which reflect the opposing PM actions, the role-players could be seen to be demotivated and struggle to keep their own personal high levels of excellence intact.

- *Budget; Client; Site* – Certain situations give role-players the opportunity to reflect on the attempt that they made, and the possible SUCCESS thereof. Finally, they are able to feel proud of themselves for putting in the effort in the successful completion of a task. These situations could be:
  - The creation of the highest-value outcome within the allowed budget;
  - Overcoming site-related CHALLENGEs and issues;
  - The various attempts to satisfy a client; or
  - The achievement of a quality end-product.

  As part of the discussion on personal PRIDE and client focus, an anomaly presents itself. This anomaly notes that where we find that performance is better when team members are taking PRIDE in what they do, the possibility exists that they are not as client-focused, as we would think is healthy. But they are performing well. Therefore, the question remains for those in charge of projects: Do we feed this PRIDE flame, and almost make the project about the team (consultants and contractors), and simply make sure that the client's goals are met?

  Or, do we push the client focus and the team's own intrinsic PRIDE; and then take a back seat? PRIDE does come over as a selfish and self-centred attribute if it does not have strong links to "Ownership" – especially where this PRIDE is focused and used for the betterment of the client's goals and objectives. In the end, the question asks: Is the project about "me", or about the client and his goals?

- *Personal* – As indicated in the introduction to this category, many of the issues raised here are very personal. The entire summary of codes states the possibility and advantages of individuals taking PRIDE in their work. The environment would be complete if the efforts of individuals are valued and recognised as evidence that others also perceive the value added by them. Similar sentiments exist at the negative aspects, which arise when a role-player becomes egocentric and self-serving. In these situations, the possibility exists that the project SUCCESS is, or it becomes secondary to personal goals and SUCCESS.

- *Momentum* – Role-players taking healthy PRIDE in the successful completion of tasks and the meeting of goals could be a definite creator/conserver of

momentum. The identification and celebration of such successfully completed sections of work would also enhance Positive Project Momentum (PPM).

5.6.8 OWNERSHIP

Table 26 represents the 25 codes, which make up the category of *OWNERSHIP*:

Table 26: OWNERSHIP category-related codes (Researcher's Construct, 2017)

Code No.	Codes
1	It takes time to trust
3	Transparency
2	Technical competence /ability
15	Technical Competence trumps all
4	Cohesive Actions
5	Part of Team
6	Continuity of members
7	Relationships
8	Dependence on others
10	Procurement
35	Apathy
31	Professional Consultancy Fees
11	Control Freaks
36	Fear of losing my job
12	Given Ownership/Responsibility
19	Giving or casting vision
20	Project Planning/Strategy
21	Pro Active actions
22	Staying focused on the project
23	Information gathering by the PM
24	PM Software
27	Budget
28	Client
33	Personal
37	Momentum

Figure 37 highlights the 25 codes, which influence causes and relate to the category of OWNERSHIP:
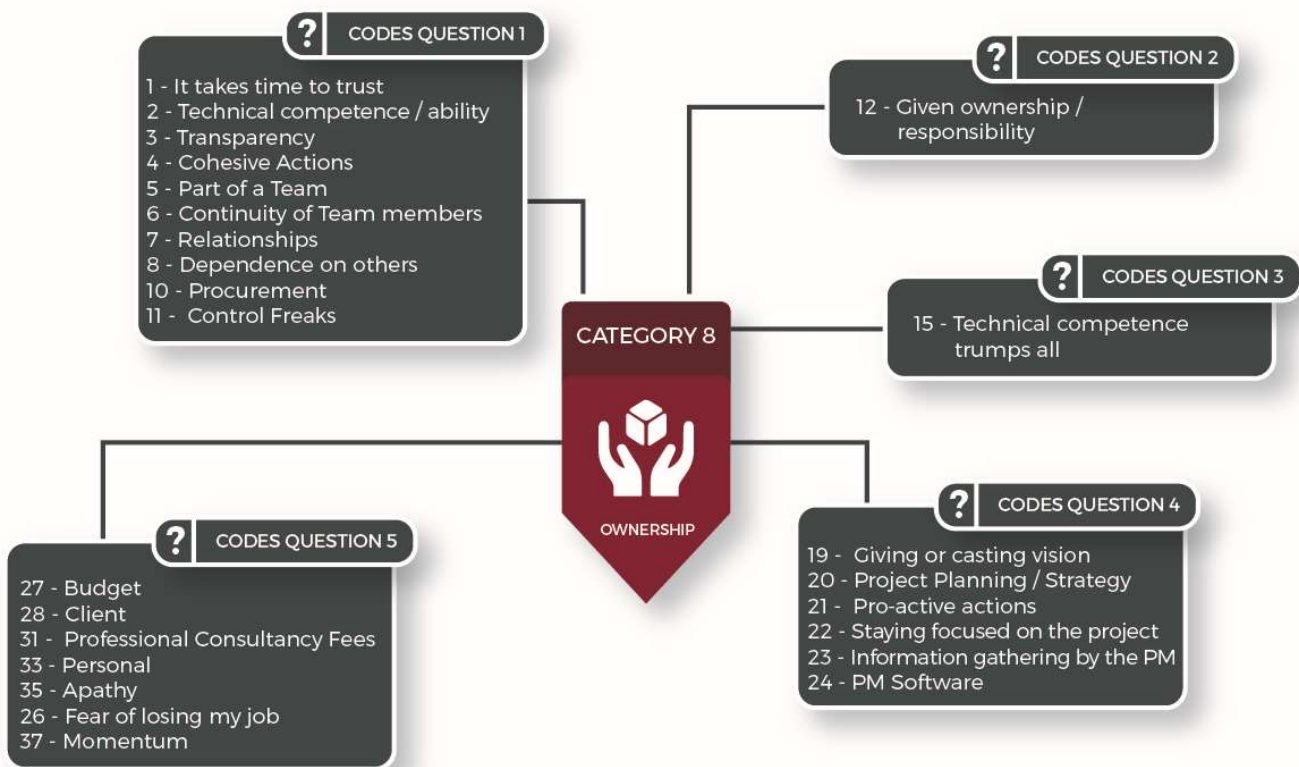
Figure 37: OWNERSHIP category-related codes (Researcher's Construct, 2017)

This category groups together the codes, which influence the role-player's ability to take OWNERSHIP of specific project tasks and their SUCCESS. *OWNERSHIP* seems to be a key ingredient in the performance of role-players. The discussion related to the influences on OWNERSHIP introduced the following points:

- *It takes time to trust; Transparency* – The feeling of OWNERSHIP could also have similar growth potential and even links with the level of trust on a project. Over an extended period, if trust is gained, the possibility presents itself that the OWNERSHIP of role-players could also increase or intensify. This is due to the positive "pressure", which trust and the consequential relationship responsibilities put on a role-player. The pressure could relate to the existence of psychological or emotional contracts between the role-players, which transcend the physical service-level agreements and the existing contracts.

- *Technical competence /ability; Technical Competence trumps all* – The actual capacity of a role-player to take OWNERSHIP on a project reflects on their technical ability and competence. The lack of technical ability was perceived by others to hinder a role-player to take full OWNERSHIP; but when highly competent individuals take OWNERSHIP, the impact on the project is both intense and positive.

  A note to make is the fact that experienced operators are inclined to know what they can take OWNERSHIP of; and they are not scared to let others assist, in order to ensure that the project's outcomes are met. They seem comfortable with their knowledge; and they would embrace the type of assistance, which would eventually lead to SUCCESS. In short, these role-players have a firm handle on the extent and the limitations of their own abilities.

- *Cohesive Actions; Part of Team; Continuity of members; Relationships; Dependence on others* – The actions taken to involve others in the creation of cohesive participatory teams are in some cases an invitation to take OWNERSHIP. These actions also indicate the OWNERSHIP taken by those extending the invitation. These invitations give impetus to the thoughts related to interdependence of role-players. The dependence on others also reflects on the intensity with which other role-players take OWNERSHIP and subsequently meet their obligations.

  The continuity of team members could certainly affect the OWNERSHIP of role-players, especially if the intensity of OWNERSHIP is aligned with the growth in trust between the role-players, as mentioned above.

  All of the mentioned actions and effects influence the relationships on projects.

- *Procurement; Apathy; Professional Consultancy Fees* – The impact of procurement on the manner in which role-players take OWNERSHIP, can be identified. Procurement sets the stage for many interactions, remuneration and future performance. In some cases, the feedback indicated a negativity towards the environment created by the procurement process. This negativity is perceived to enforce apathy, which gives the role-players a scapegoat to blame for future failures.

  When automatically grasping at financial incentives as a performance driver in partnering procurement strategies, Walker (2011:131) notes that these actions

are mechanistic; and they actually side-line individuals' intrinsic motivators, and typically that of OWNERSHIP.

If OWNERSHIP is taken seriously, role-players should be interrogating themselves to ensure that they are able to take OWNERSHIP. Typical questions which should be part of the decision-making before undertaking work could be:

- Is my organisation allowing and supporting me to take ownership? Or should I say 'No' to this project work?
- Will I be doing myself and my organisation harm if I undertake the work and fail to do it properly?
- In what ways are your company's representatives hurting your business in the project? Are they not taking ownership?
- How do I get someone to take ownership? How do I get that representative to look after the client's best interests and function well within the team?

- *Control Freaks; Fear of losing my job* – OWNERSHIP, as most things, could have an overstated position. This position manifesting in role-players through the requirement of some to be in absolute control – or living with a constant fear of others not taking the legitimate amount of OWNERSHIP to be able to meet the needs of the project.

- *Given Ownership/Responsibility* – The act of entrusting someone with the OWNERSHIP and responsibility to do something is initially greatly motivating; but it also has the ability to empower already-eager takers of OWNERSHIP even further. The effects are then motivating role-players to take OWNERSHIP, but also to strengthen those who are already taking – or are eager – to take OWNERSHIP.

- *Giving or casting vision; Project Planning/Strategy; Pro-Active steps; Staying focused on the project; Information gathering by the PM; PM Software* – The manner in which the PM conducts his duties reflects on the intensity of OWNERSHIP the PM takes for the project goals and SUCCESS. The example of what the PM does, implicates almost all of their inputs; and it has a negative effect on the team; if it is perceived that the PM is not taking OWNERSHIP. This lack of OWNERSHIP again having implications for the perceptions of the other

role-players on the actual ability of the PM to take OWNERSHIP – and the subsequent circumvention of the PM as a decision-maker and impactor.

The use of PM software allows role-players a transparent platform, from which to operate, which some being indicated as assisting with taking and enforcing OWNERSHIP from all those involved, due to the manner of task allocation and communication.

- *Budget; Client* – Hints of the role-player OWNERSHIP could be seen in the way in which they handle the budget amount, the creation of high-value end-products and the regard for client needs. The role-players are energised to take OWNERSHIP, and to take many precautionary and additional measures to ensure that the outcomes they are driving towards, are successful. The OWNERSHIP has obvious advantages for building healthy client relationships.

- *Personal* – The intensity of OWNERSHIP taken by role-players has personal repercussions. The personal appreciation of work and feedback on projects influences the OWNERSHIP taken by the role-players. Both the PRIDE taken in work and the value or appreciative feedback were outcomes of the OWNERSHIP taken.

  As expressed before, OWNERSHIP could have a negative inclination. It could be argued that certain individuals see the projects as 'theirs'; and they maintain that the decisions made are not really in the best interests of the building, but rather to enhance certain aspects of the building to make it more dramatic or aesthetically pleasing. This could be a point of interest for client representatives to manage.

- *Momentum* – When teams engage in momentum conservation or creation activities, these are seen to be supported by the OWNERSHIP taken by the role-players. The momentum on a project could reasonably have origins in the intensity of OWNERSHIP expressed by the role-players.

"Project affinity", as defined by Dainty *et al.* (2005) relates to "the commitment and attachment by stakeholders and participants to projects and their outcomes". Dainty *et al.* (2005) indicate that role-players are less likely to commit to project goals, because projects are temporary in nature. In fact, a role-player's affinity determines the attitude and commitment towards the project's outcomes.

The general principle is that when an individual is able to treat work, and the possible outcomes thereof, as if it were their "own", it just seems that there is an incentive to do things well.

Questions that arise during such a discussion are presented as:

- Do we ever accentuate this aspect of OWNERSHIP in academic courses? Is it a skill, which is ever mentioned?
- Are you able to teach someone a trait, such as "OWNERSHIP"?

5.6.9 CLIENT

Table 27 represents the 18 codes, which comprise the category of *CLIENT*:

Table 27: CLIENT category-related codes (Researcher's Construct, 2017)

Code No.	Codes
1	It takes time to trust
3	Transparency
7	Relationships
4	Cohesive Actions
5	Part of a team
8	Dependence on others
9	Learning from others/team
10	Procurement
12	Given ownership/responsibility
15	Technical competence trumps all
16	Industry shortcomings
28	Client
31	Professional Consultancy fees
33	Personal
34	New/Different
35	Apathy
37	Momentum

Figure 38 below shows the 18 codes, which comprise the category of *CLIENT*:
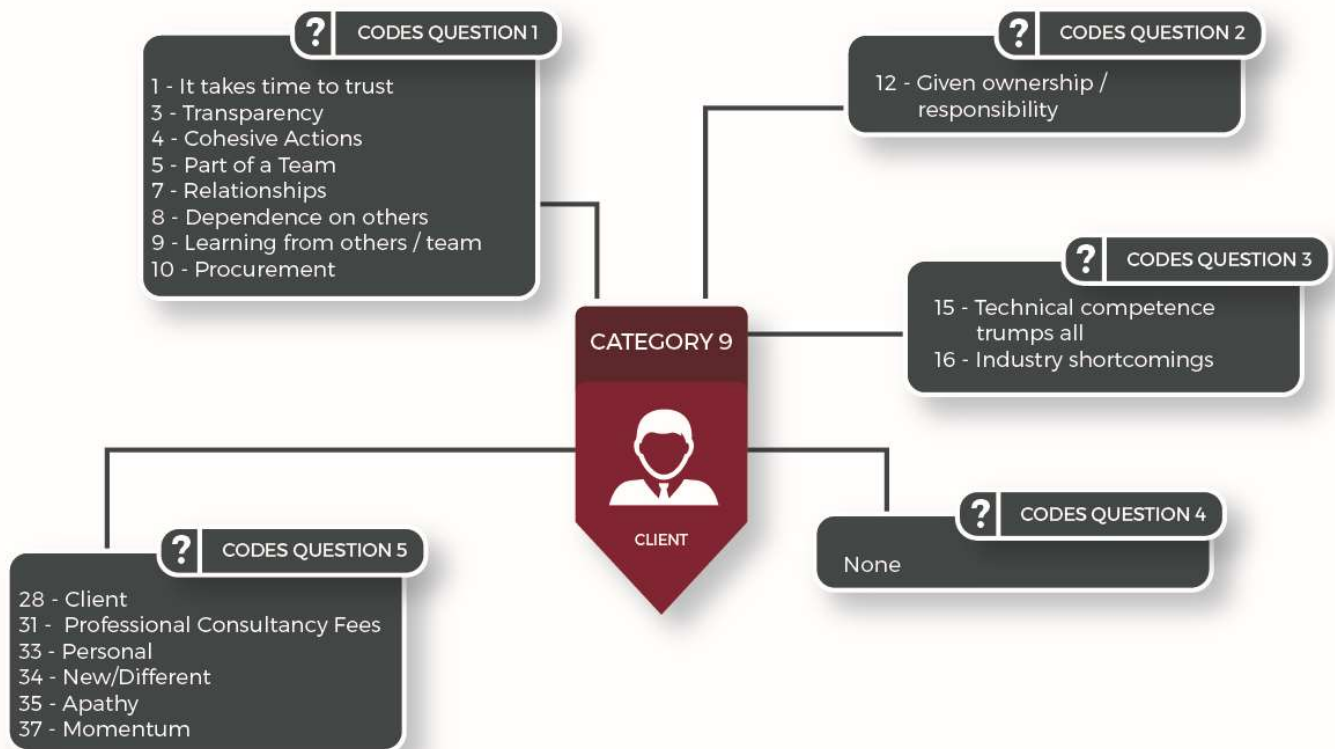
Figure 38: CLIENT category-related codes (Researcher's Construct, 2017)

The part that the CLIENT plays on a construction project warrants the development of a category, which investigates the many issues surrounding the impact and influences their involvement. Wang and Huang (2006) confirm these views and note that clients play a very important role in the SUCCESS of a project. Furthermore, the reader is reminded of some additional research directly related to the CLIENT at the end of this section. This was done to encapsulate many of the issues, which surfaced in perspective. The codes embodying this category unravelled the following discussion points:

- *It takes time to trust: Transparency* – It is clear that the CLIENT is an active role-player in the processes and actions during the construction project. Due to the active role-player status of the CLIENT, the implications of trust being gained and transparency required, also applies to the CLIENT body and the representative. CLIENT loyalty relies on the loyalty of internal organisational staff; and it is based on trust (Smyth, 2015).

- *Relationships; Cohesive Actions: Part of a team* – The consultants and contractors would like to build up good relationships with the CLIENT. This relationship may have positive implications for future work appointments and general project operations. From the client's perspective, the impact of their transparency and the trust gained or lost has implications on whether the other role-players would engage in this relationship-building exercise. As part of the relationship-building and with possible performance benefits, the CLIENT would also be targeted for cohesive actions to engage and build the trust required to boost performance. In construction, the relationships the role-players are stretched over an extended period. This is in contrast to many other CLIENT and supplier relationships. Due to this extended relationship period, it is suggested that a considerable amount of effort be exerted to develop these relationships (Walker 2011:27).

  All role-players find enjoyment in being part of a team; and it can be appreciated that CLIENT representatives are also keen to engage and be included as part of the team.

- *Dependence on others* – Throughout a project, there is dependence on the CLIENT for many informational and other project-related inputs. Finally, the CLIENT also depends on the performance of the consultants and contractors to produce desired outcomes. The SUCCESS of the produced outcomes builds trust and strengthens the relations. Interdependence seems to saturate deeper than just the current project level interaction.

  If a role-player does not perform well, as part of the project team, they will understand that they might be left out of contention for the next project. The hierarchy involvement on the current project – and where the next work might come from – is not always aligned. On the current project, the architect might be the leader; but on the next project, the engineer might be the leading consultant due to his links with the CLIENT. Therefore, each role-player needs to perform well and be in good standing with all the role-players, and be reflecting on the philosophy of 'everyone is your client'.

- *Learning from others/team* – CLIENTs experienced a similar need to learn; and, in the process, to gain respect for the ability of others. They also build up their own technical expertise and project experience in this manner.

- *Procurement* – As initiators of projects in relation to a need, CLIENTs usually procure the services required. This is contrary to the situation of the sale of finished products to CLIENTs. In the case of the procurement of services to produce the required end-product, CLIENTs usually decide on the manner and strategy of procurement. As discussed before, these decisions have a massive impact on the future performance of the role-players.

  In relation to the CLIENTs' role in planning, Olander (2007) makes it clear that stakeholder management, and even the implementation of a stakeholder management process has been identified as an important aspect in managing the project for SUCCESS. These comments reflect strongly on the internal processes and the planning undertaken.

  Smyth (2015:38) comments on the use of classical contracting; and he notes the following issues as being applicable to the CLIENT category:

  - A high level of procurement and project-management knowledge is required to assess bidder capability, value for money and the level of value added;

  - The mentioned capabilities on the CLIENT side come from specialist knowledge, education and past experience. Many CLIENT organisations struggle with the maintenance of such a capability.

- *Given ownership/responsibility* – CLIENT respondents also expressed the need, and impact on their own personal motivation related to the OWNERSHIP and responsibility bestowed on them by their organisations, to undertake projects and to make decisions. The lack thereof has peculiar implications when this leads to apathy from the CLIENT's representative.

- *Technical competence trumps all; Industry shortcomings* – CLIENTs as procurers of services reflected an openness to engage with a diverse group of service providers. The only real requirement, of technical competence, still remains. The industry's shortcomings possibly impact on the CLIENT the most. Due to the status of service providers, the procurement of a diverse group of role-players is not an easy task.

- *Clients* – As providers of work, CLIENTs enjoy a lot of focus. This focus varies in connection with the many activities and actions on projects. First-time CLIENTs receive acute focus from the other role-players to impress and encourage future appointments. The many levels and perceptions of need-satisfaction are channels through which consultants and contractors target to build up trust and relationships with the CLIENT. It is important for these role-players to comprehend that their employees' job satisfaction has a strong relation and impact on customer or CLIENT satisfaction (Robbins and Judge, 2008; Walker, 2011). Therefore, internally, the role-players should ensure that the employees, which present the organisation are satisfied in their work and the internal arrangements.

  The CLIENT also plays a part in the needs satisfaction of the role-players. Feedback and recognition by the CLIENT seems to lift the performance of the team. Stating the importance of the end-product as a performance requirement in relation to CLIENT satisfaction, Walker (2011:28) concludes that, however well a CLIENT is treated during the construction process, relationally, the end-product would still determine the CLIENT satisfaction. National reports confirm current CLIENT dissatisfaction with the quality and performance (CIDB, 2011, 2015). The report data possibly reflect the relational strain between the CLIENTs and the other role-players in the industry.

  In agreement with the other role-players, CLIENTs are not oblivious of their role in the process of project initiation and implementation. The CLIENT representatives commented on, and appreciated their influence and the important role they play in the realisation of the project goals and successes.

- *Professional Consultancy fees* – Comments reflect a relationship between the level of service and the price paid for such services. As procurers of consultancy services, CLIENTs are possibly in the most influential position to generate solutions for the performance problems reflected on for professional consultancy fees.

- *Personal* – CLIENT representatives indicated similar proud moments; and they indicated an apprehension of failing to produce projects, which do not meet the internal or final user requirements. CLIENTs want to take PRIDE in the work

that they were in charge of, and to satisfy their internal "clients' needs". The outflow of those successes should also gain feedback and recognition.

CLIENTs should take cognisance of the impact of other role-players' egocentric fame and publicity needs. If not controlled, the CLIENT could, possibly be funding many project elements. Most of these might not be in their best interests.

- *New/Different* – CLIENT representatives are in the favourable situation to be the first in line to be introduced to each and every project's new or different elements. These elements reflecting items, or design, or the needs expressed by users of the building. In commentary, it could be seen that some really enjoy the new prospects; and how these would come to fruition during the lifecycle of the project.

- *Apathy* – The apathy of a CLIENT representative could be very negative for any project. Through the many ways of influence and involvement discussed, the current project environment processes need engaged and focused CLIENT representatives. Quantitative testing of the needs expressed by the role-players and how CLIENT representatives meet these needs could be really interesting, when reflecting statistically on the extent of their influence.

- *Momentum* – Without harping on their importance, the reader can comprehend the influence that the CLIENT has on the momentum of a project for the conservation, creation, decay and destruction thereof.

It is a unique situation, in which the CLIENT is part of the creation of the product and has an input and an actual influence on how, when and who will create it. Metaphorically speaking, the situation is almost like a patron going to a restaurant, and ordering a certain dish, to be served at a certain time, and also identifying the person who must prepare it. This means even going so far as standing behind the person, and adding some spice to the dish, and then adjusting the heat on the grill, thereby, being part of the creation process. However, the construction-industry CLIENT is still the 'client'; and they seemingly have a standard set of needs similar to any completed product sale client. It could be that the extent of the work and the manner in which the product is created, are so very different from a completed product sale (motor cars, tools, paint, clothes, etc.) that CLIENTs should then possibly rethink

their expectations, be it having higher or lower expectations – because of this process failing to be a typical process for reaching the end-product.

Many have spoken about this; but until the entire industry moves towards a prefabricated complete product, we will always have these standard CLIENT expectations, in an industry, in which the process and the end-product are not the same as those of the completed product industries.

From the participants' commentary, and supported by national reports (CIDB, 2011), it seems that nowhere does the CLIENT influence the outcome as much; and yet, the construction industry seems so out-of-tune with its CLIENTs. Possible hypotheses for this situation could be:

- Maybe this is due to the view of project teams that issues will be sorted out in the course of a project; as there is continuous CLIENT interaction? Where in contrast, in the completed product sales, the industries need to be so finely tuned as to know whether the next step which they take would still keep the CLIENT satisfied. If the "GO" button is pressed on the assembly line, there is no turnaround. Masses will be produced and the industry needs to be sure that the product will sell; and that it is in line with what the CLIENTs want.

Walker (2011:28) expands on the understanding of the relationship with regard to the type of product the industry delivers, which is not a general consumable; and which can be "discarded or changed".

CLIENT focus from role-players, could be seen through the responses, to be somehow dual-sided; or, it can be practised in two ways in these construction-project contexts:

- Firstly, a fixed focus with no strings attached. It seems as if some contractors and consultants have an internal dogma of "this is the way we do business", or

- Secondly, a focus based on future affiliation or continuity of work with that CLIENT. The focus is reliant on what we can get from you in the future.

An interesting question arises with both of the mentioned contexts:

- How do CLIENTs perceive these different types of focus in the current built-environment set up, and,

- Which of these is the more sustainable?

5.6.10 PROJECT MANAGEMENT

Table 28 represents the 18 codes, which make up the category of *PROJECT MANAGEMENT:*

Table 28: PROJECT MANAGEMENT category-related codes (Researcher's Construct, 2017)

Code No.	Codes
1	It takes time to trust
2	Technical competence/ability
25	PM – Adding no value
26	PM - Incompetence
3	Transparency
8	Dependence on others
10	Procurement
17	Expectations of the PM
12	Giving or casting vision
20	Project Planning/Strategy
21	Pro Active actions
22	Staying focused on the project
23	Information gathering by the PM
24	PM Software
29	Communication
30	Meetings
33	Personal
37	Momentum

Figure 39 below highlights all of the 18 codes relating to the category of *PROJECT MANAGEMENT*:
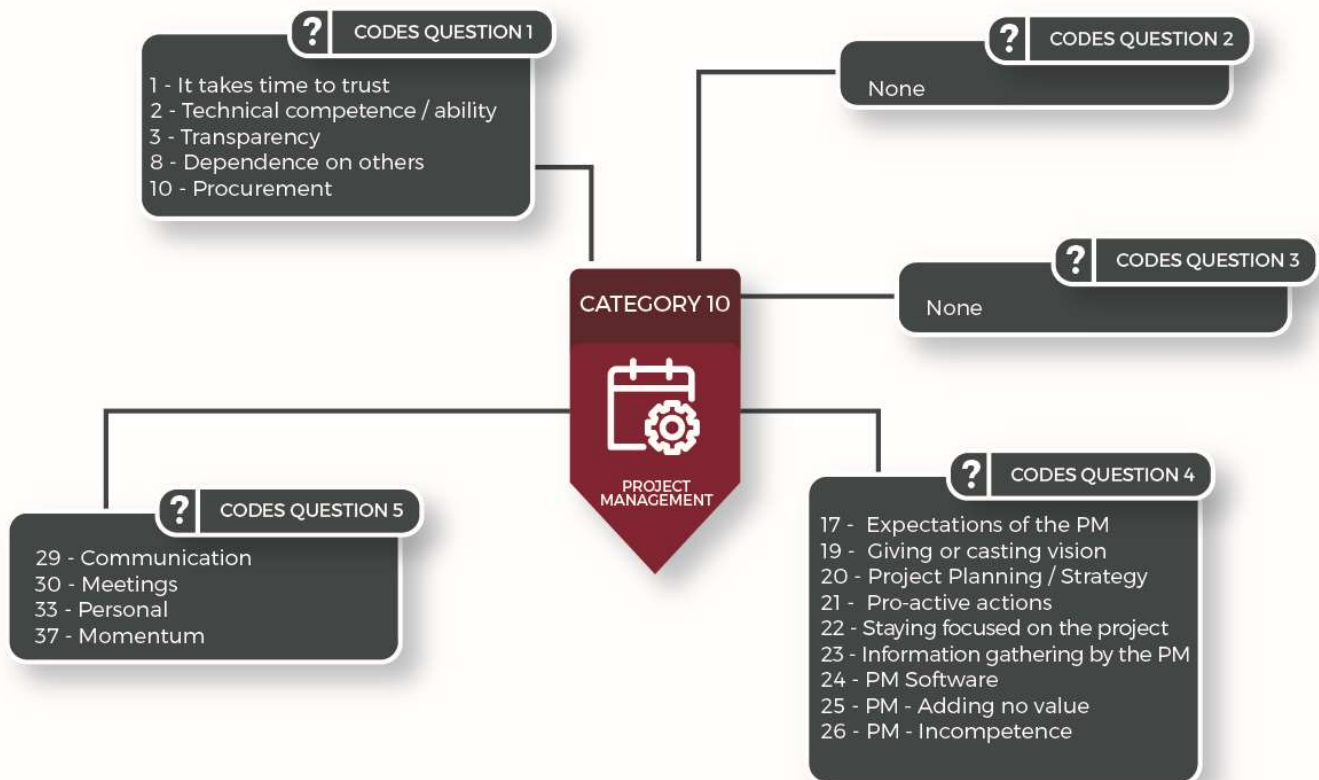
Figure 39: PROJECT MANAGEMENT category-related codes (Researcher's Construct, 2017)

The category of PROJECT MANAGEMENT was created to summarise the many noted impacts and influences mentioned by the role-players, and which are classified in the codes. Some influences where directly noted, but an in-depth interaction with the data reflected many implied requirements. The implications for practitioners are that PMs have a major role to play in the attainment of project SUCCESS (Howell and Koskela, 2000; Pheng and Chuan, 2006; Toor and Ofori, 2008). The discussion on PROJECT MANAGEMENT noted the following issues:

- *It takes time to trust* – The implication for the PM is that the team will not instantly trust them or one another. It will take time and consistent actions to create the trust required to build proper relationships to actualise optimal functioning.

- *Technical competence/ability; PM – Adding no value; PM - Incompetence* – As stated before, role-players require others to be competent and able. This is also true for the PM, and possibly even more acutely required for those in charge of leading these highly qualified professional role-players. The acuteness is stated, and coded, relative to the value addition and the incompetence mentioned by the role-players.

  These requirements are in line with the views of Ofori (2012:248), who notes the vital role that "leadership plays in the SUCCESS of a project". In general, Walker (2011) notes that competence includes both the technical/professional skills, values and the personal traits. These values and personal traits are becoming increasingly important, in order to work in teams, to be able to communicate, to be culturally aware together, with a range of other social skills required to operate in these complex industrial environments (Walker, 2011),

- *Transparency* – The actions taken by the PM must indicate transparency. If they do not, the indications are that the role-player starts to distrust both the actions – and, even further, the ability of the PM. Toor and Ofori (2008) reflect on the need for leaders to live out positive values, and to set both ethical and moral standards.

- *Dependence on others; Procurement* – The specific dependence on the team leader was not identified as part of the sub-codes for this section; but it could be implied; if one views some of the more specific codes, in which the role-players reveal specific assistance or the requirements of the appointed PM. These requirements reflect on the importance of their background, competence and even the timing of the appointment of such a PM. Further to the commentary on PM procurement, Jayawickrama (2011) notes that managers are still selected on the basis of their "hard" skills (education & competence); but this author proposes that both the "soft" and "hard" skills are to be used in a balanced approach, when acquiring the service of a PM.

- *Expectations of the PM* – The PM's role is wide, general and filled with high expectations from the others on the team. In agreement, Werner *et al.* (2011), indicate that the manager's roles in the 21st century are complex, demanding

and functioning in unpredictable environments, which can sometimes verge on the chaotic.

- *PM – Role in motivation* – The role-players require the PM to play a role in motivation. Motivation, as one of the factors, which impacts on performance, is an important factor for PMs to address (Jay, 2003; Peterson, 2007; Chinowsky, Diekmann and Galotti, 2008). Cusworth and Franks (1993:194) note that motivation has a major role to play in the performance of teams.

  PMs also motivate specifically by the example they set. The example is surely influenced by the attitude, experience and emotional maturity of a PM.

  Hackman and Wageman (2007) indicate that emotionally mature leaders are exemplary of the following:

  - The ability to deal with the fears of others and their own;

  - To move towards the causes of anxiety with a teachable motive; and

  - Has the necessary self-discipline to steer clear of impulsive actions.

- *Giving or casting vision; Project Planning/Strategy; Pro-Active actions; Staying focused on the project; Information gathering by the PM* – Some assistance needs noted by the role-players reflect, in line with Werner *et al.* (2011), on leadership activities, such as the ability to create a vision, a strategy and to be proactive. Other noted requirements divulge more managerial functions, like planning, keeping others being focused and the gathering of information.

  Reflecting on the mentioned proactive actions by PMs, Tores (2014) concurs that the anticipation of change is a determinant of effective leadership. Stanley (2016) also confirms that people follow leaders who have clarity of vision.

  Current reflections on the identification of future issues is, seemingly, an intuitive and experienced-based activity of the PM.

- *PM Software* – Commentary indicated the assistance, especially with managerial functions, which project the management software could lend to the PM. Authors although cautious that technology, processes and specifically people, should carefully be considered when undertaking the use of PM software platforms (Alshawi and Ingirige, 2003; Rezgui, 2007).

- *Communication* – Many of the respondents noted what they require from the PM related to communication and often indicated the importance of communication. The greatest advantage for the PM could be the creation of a positive environment through the communication that takes place. The positive environment could be the outcome of focusing on the manner of communication and the accessibility to the PM and others.

  De Villiers (2004:20) contends that management ultimately creates the environment needed for project SUCCESS – with the environment creation having positive consequences. Jay (2003:25) states that in the "right" environment, team, members would "effectively motivate themselves".

  The noted importance of the manner of communication reflects from the ideas of Plunkett Tost, Gino and Larrick (2014) that a leader's verbal dominance reduces commitment; and as a consequence, the performance of the team members.

- *Meetings* – The PM is required to assist with effective communication and interaction during these face-to-face sessions.

- *Personal* – The PMs, as leadership figures are, by default, held in high regard. As a consequence of the high regard, the appreciation and recognition given by the PM for value added by a role-player, is perceived as a motivator by both the role-players and PMs.

- *Momentum* – The PM has a specific role to play in the overall PPM conservation. The influence and impact the PM has is pivotal for the resolution of many of the possible issues, which arise in the process of completing a project.

When identifying the many influences and impacts that PMs have on projects, Pheng and Chuan (2006), Ofori (2012:248), Powl and Skitmore (2005) could be correct in noting that the PM could be the most significant factor impacting on projects' performance.

5.6.11 INFORMATION

Table 29 represents the 25 codes, which comprise the category of INFORMATION:

Table 29: INFORMATION category-related codes (Researcher's Construct, 2017)

Code No.	Codes
1	It takes time to trust
2	Technical competence/ability
3	Transparency
7	Relationships
8	Dependence on others
15	Technical competence trumps all
6	Continuity of team members
10	Procurement
13	Internal support
14	Small organisations
17	Expectations of the PM
19	Giving or casting vision
20	Project Planning/Strategy
21	Pro-Active actions
22	Staying focussed on the project
23	Information gathering by the PM
24	PM software
25	PM – Adding no value
26	PM – Incompetence
28	Client
33	Personal
29	Communication
30	Meetings
35	Apathy
37	Momentum

Figure 40 below diagrammatically highlights the 25 codes, which influence, the causes; and relates to the category of INFORMATION:
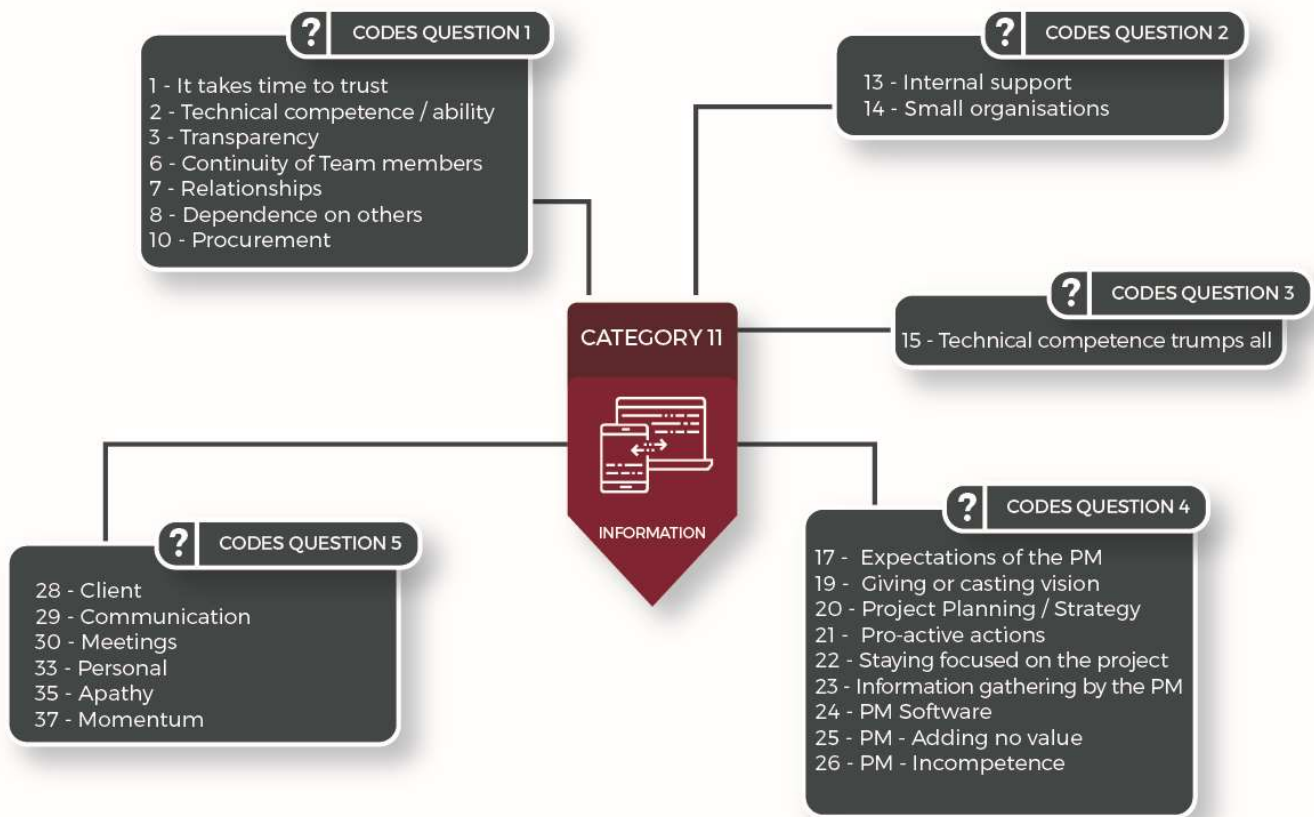
Figure 40: INFORMATION category-related codes (Researcher's Construct, 2017)

The importance of the provision, production and distribution of INFORMATION was found to resound through many of the codes. This category will discuss the implications and impact of many of the coded sections on project INFORMATION. The codes embodying this category highlighted the following discussion points:

- *It takes time to trust; Technical competence/ability; Transparency; Relationships; Dependence on others; Technical competence trumps all* – The ease and depth of INFORMATION shared is influenced by the gained trust between the role-players. If this is the premise, from which to start the discussion, then readers can understand the following:
  - The restraint and possible lack of INFORMATION shared at the start of projects, and

- That if the INFORMATION sharing interactions are positive, that these will increase over time. The positivity of interactions being influenced by many factors, but as pointed out, the technical correctness in itself plays a major role in the trust-gaining process.

As important for trust gaining and relationship-building, is the transparency linked to the INFORMATION shared, which induces positive transactions that contribute towards a successful project. As noted in the introduction, INFORMATION is a major commodity on projects. This commodity is shared and used to gain power; and it also empowers others. INFORMATION-sharing has a great impact on the performance of the role-players. The multi-disciplinary inputs force interdependency on INFORMATION by a range of role-players. Not one of the role-players has the capacity or technical ability to fulfil all the functions at the level required by most of these projects. The dependence on each other influences the engagement in relational activities to create and open up channels of INFORMATION-sharing.

One relational activity mentioned a few times is the socialising of the role-players, but within the comfort levels of a professional environment.
All of the above-mentioned, finally impact on the relations between the members on an on-going basis; and they influence subsequent INFORMATION exchange. Role-players' regard for the quality and competence behind the INFORMATION supplied leads to a positive attitude between the diverse set of project role-players, when the inputs adhere to these requirements.

- *Continuity of team members* – One of the many fears connected to the non-continuous involvement of role-players is the loss of inherent project INFORMATION, as well as the stalemate in INFORMATION-flow, once a new member enters, or someone exits the team. The scenario possibly varying in severity in relation to when the team members leave or enter (project stage/phase), and under what circumstances they left.

- *Procurement* – Progressive strategies of procurement induce better role-player relations' and subsequent interaction. This interaction assists with the flow and exchange of INFORMATION.

- *Internal support* – The INFORMATION flow on projects is, in some instances, strained, due to the lack of internal support. Unsupported role-players are seemingly falling short, in cases, to provide the right quality or volume of INFORMATION requested, which could be directly linked to a lack of internal support.

- *Small organisations* – Some commentary reflected on the ease of interaction described within small organisations. The INFORMATION flows quickly to the right sources and the turnaround time on INFORMATION requests, or approvals, is quick. Also, the level or experience of the role-player involved from the smaller organisations was identified as being highly experienced and involving with each facet of the project. This involvement also impacts on the quality of INFORMATION flowing from these smaller organisations.

- *Expectations of the PM, Giving or casting vision; Project Planning/Strategy; Pro-Active actions; Staying focused on the project; Information-gathering by the PM; PM software; PM – Adding no value; PM – Incompetence* – In the many roles and expectations noted for the PM, the role-players indicated a real need for adequate INFORMATION.
  Firstly, mere technical INFORMATION-gathering during the project duration, and assisting with the flow thereof.

  Secondly, and probably more encompassing, is the project directive and guiding of INFORMATION. These needs were reflected on in the requests and yearning for motivation, vision, planning, strategy, pro-active actions and keeping others focused on the current INFORMATION requirements. In the cases where the above-mentioned assistance with INFORMATION (technical and directive) is not met, the PM could be seen as being incompetent, and not adding value.

  In the case where the PM software is used, the respondents indicated a great deal of ease in the way that such INFORMATION was distributed.

- *Client; Personal* – The INFORMATION requirement, fulfils needs mentioned by the role-players, which indicate the current levels of satisfaction with INFORMATION provision. In most cases, the satisfaction feedback was merely via verbal interaction, and not via formal measuring and feedback, like a performance review or other platforms.

- *Communication; Meetings* – Communication on projects has many functions; but one of those is to distribute and share INFORMATION between the role-players. The INFORMATION sharing is influenced by:
    - The relational issues or standing;
    - How open the communication lines are; and
    - The manner of communication between the role-players, surrounding the INFORMATION-sharing function.

    If the communication function is fulfilling its duty, the creation of a positive environment ensues; and effective-INFORMATION flow is then possible.

    In this environment, meetings would be places where INFORMATION is creatively and successfully shared; and the role-players would not be found wasting their time.

- *Apathy* – If the INFORMATION distribution or the INFORMATION supply is insufficient, or it is incorrect, it can create a sense of apathy or an escape card in the hand of the aggrieved to use later, as a personal excuse or reason for non-performance.

- *Momentum* – INFORMATION, as one of the major communicated commodities can influence the project's momentum. The INFORMATION shared should be regular, correct and linked to healthy relational interactions, in order to ensure the conservation and the continuous creation of PPM.

Project INFORMATION is similar to production material in a factory. Nothing can happen without it; but it also gives those who have it importance, power and responsibility. These INFORMATION 'materials' or 'goods' also need to change hands between the role-players. Project INFORMATION is typically financial, design, administrative etc. and these aspects are acquired. The currency that buys these 'goods' on projects is perceived as a force, manifesting goodwill and responsibility towards their role on the project, in addition to the possibility of future work and emotional contracts. However, everyone on the project has INFORMATION; and at stages, others would also need it, in order to go forward productively.

5.6.12 HUMAN

Table 30 represents the 27 codes, which make up the category of HUMAN:

Table 30: HUMAN category-related codes (Researcher's Construct, 2017)

Code No.	Codes
1	It takes time to trust
3	Transparency
2	Technical competence/ability
4	Cohesive actions
5	Part of a team
6	Continuity of Team members
7	Relationships
8	Dependence on others
9	Learning from others/team
10	Procurement
11	Control Freaks
12	Given Ownership/Responsibility
16	Industry shortcomings
19	Giving or casting vision
20	Project Planning/Strategy
21	Pro Active actions
22	Staying focused on the project
23	Information gathering by the PM
27	Budget
28	Client
31	Professional Consultancy Fees
36	Fear of losing my job
29	Communication
30	Meetings
33	Personal
35	Apathy
37	Momentum

Figure 41 visually reflects the 27 codes, which impact, cause and relate to the category of HUMAN:
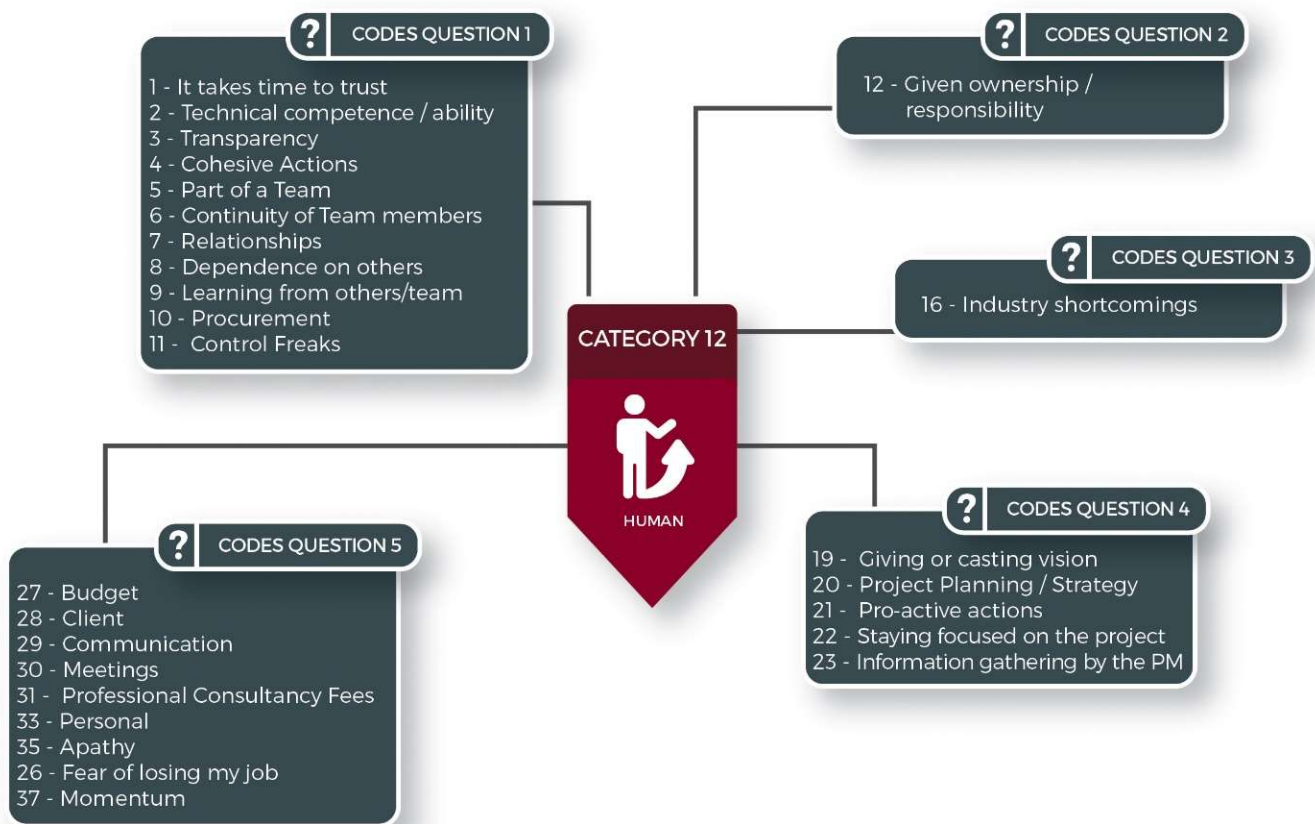
Figure 41: HUMAN category-related codes (Researcher's Construct, 2017)

Issues with HUMAN origins and links were categorised to acutely highlight the many personal or human-sourced influences in the project environment. These HUMAN influences indicate the many issues; which could have either a negative or a positive impact on performance; but which have no technical or project-specific origins. These influences find their source from, and originates at the HUMAN level. The discussion of the feedback with the participants and its implications, unfolds as:

- *It takes time to trust; Transparency* – The basic requirement for sustained HUMAN interaction is seemingly trust. If the timely process of trust-building can take place, role-players could engage, interact and finally build healthy relationships. As a basic relational requirement, human beings have an affinity for and operate well with those who are transparent.

- *Technical competence/ability* – Although knowledge, experience and ability relate to technical aspects, the bearers and users of the competence are HUMANs. The role-players are the source of interpretation, comprehension and application of all the technical issues in a project. The urge to be competent, and to gain competence and ability can be identified as HUMAN needs.

- *Cohesive action* – Role-players understand the importance of HUMAN interaction, which could influence performance on a project. The understanding is so acute that they actually take actions over and above the standard required project interaction, in order to make sure that others are included and affiliated with the team.

- *Part of a team, Continuity of team members; Relationships* – Role-player feedback indicated a HUMAN need to conform and be part of the team, in which they find themselves. This feeling of being part of the team and building is more likely in those teams where the members are involved on a continuous basis. A logical perception indicates that most people want to feel comfortable to operate in a team environment and to engage with others to achieve comradeship and a sense of togetherness.

- *Dependence on others* – Although dependency is a common HUMAN reality, the widespread dependency on a range of role-players within the team, creates anxiety for some of the respondents. This dependency is accentuated by teams made up of 6-8 role-players; while reliance on the peripheral staff in some of the organisations make up the project team. The anxiety is driven by the impact the performance of others have, on the possibility of future work appointments.

- *Learning from others/team* – The need was expressed to gain insight and experience through the interaction with others on the team. The role-players do not just want to exist on the project and come out the same or at a similar operative level. The HUMAN need is shown to gain and grow from this interaction with others.

- *Procurement* – Procurement, as expressed in many other relational discussions, influences the subsequent interaction of the role-players in many ways. It may therefore be deduced that procurement has a direct ability to

positively or negatively impact on the individuals, their needs and aspirations on the project.

- *Control Freaks* – To be in absolute control is a real need for some humans. The application and influence of this need is widespread, but a reality in this environment. This specific need to control, should be identified and channelled or redirected in an interdependent environment, such as a project team. The channelling could propose elements of control for such individuals, where clear boundaries exist for them to exert control. Redirection, for example, could assist the *'Control Freaks'* with:

  - Gaining trust and dependence via understanding; and

  - A realisation of positively impacting the team, rather than being counterproductive and engaging in distrust and actions, which show a lack of transparent actions.

- *Given Ownership/Responsibility* – The replies noted and discussed in the analysis indicate the positive outcomes of the handing over of OWNERSHIP and responsibility to an individual. This HUMAN reaction indicated motivational impacts; and it was clearly positive in the noted feedback.

- *Industry shortcomings* – Related to the diversity and shortcomings noted in these cases, the role-players were very sympathetic and open to change. The reactions were heartfelt and inclusionary, in the spirit of bringing real diversity to the entire construction industry.

- *Giving or casting vision; Project Planning/Strategy; Pro Active actions; Staying focused on the project; Information gathering by the PM; PM – Incompetence; PM – Role in motivation* – In line with comments so far, the reactions from the respondents noted some real personal and HUMAN needs, in order to operate effectively. If these are borne in mind, they could have positive implications on performance. Some issues raised for PMs indicated some HUMAN needs should be fulfilled by the one that is in charge of the team. These needs reflect a requirement for motivation and guidance.

The motivational issues are in line with the literature, whereas the guidance on these projects is less common knowledge. The requirement for the PM to

provide vision, do planning, strategise, and be proactive assists with technical operation; but it also fulfils the HUMAN needs expressed. The circumvention of incompetence is clearly a HUMAN intervention when the PM does not fulfil these needs; and these assist the role-players to still aim at successfully completing their personal tasks.

- *Budget* – A HUMAN need to push the boundaries of creativity and current assumed *status quo* can be seen relative to the maximisation of value addition in relation to a fixed budgetary amount. The feeling of gratification of personal needs is felt in the process and in the SUCCESS of such an exercise. Walker (2011:23) states that situational factors, like budgets, influence performance.

- *Client; Professional Consultancy Fees; Fear of losing my job* – In the process of identifying HUMAN-related issues from within the codes, the role that the CLIENT plays in fulfilment of these HUMAN needs is noted.

  The HUMAN need for income to fulfil the basic living requirements and even for wealth creation is a specific outcome of the interaction with the CLIENT on the project. Linked to this basic need, and with a possible growth component (wealth creation), is the feedback received from the CLIENT on the performance of the other role-players. This feedback is in most cases both a driver of performance, as well as of motivations.

  The CLIENT, as the target of satisfaction, also gives the consultants and contractors many need-fulfilment opportunities, in line with those ones discussed for the code '*Budget*'. These comments reflected on the HUMAN need to push the "boundaries of creativity and the currently assumed status quo" in accordance with meeting the CLIENT's expectations.

  In discussing HUMAN needs, the following comments caution against the use of monetary incentives as performance drivers:

  - Ashraf, Bandeira and Jack (2014) found that the participants who were offered non-financial rewards, outperformed their peers;

  - Ariely, Gneezy, Loewenstein & George (2009) noted a decrease in performance as incentives increased The researchers even caution practitioners that the increase of incentives beyond a threshold level

could in fact increase motivation to supra-optimal levels, which have a perverse effect on performance (Ariely, Gneezy and Loewenstein, 2009);

- Where incentives did have a positive effect, the literature noted that these comprised long-term incentives (Fu, 2012); and

- Some operatives become "hygiene seekers", They chase after material things and they become "perpetually miserable" due – to "the satisfaction of hygiene factors" being "of short duration" (Sachau 2007; Herzberg 1966:89). Herzberg (1966:13) suggests that humans should rebel against lusting after the "animal needs" (hygiene) – because the constant gratification of only those needs would always render the recipient with "partial utilization of his ability".

- *Communication; Meetings* – The personal interaction in the project environment is always communication-related. The HUMAN requirements being:

  - The ability to communicate openly;

  - Communicate effectively; and,

  - Communicate in a professional manner.

These three needs are defining of a hypothetical environment, in which the role-players felt the need to be the most humanising; and in which they are enabled to operate.

- *Personal* – The feeling of a HUMAN being standing back from a situation and the reflection of their role on a project, was interpreted.

Firstly, in the manner that they reflect on their role and their SUCCESS in overcoming all the difficult situations.

Secondly, the recognition by others of the value added, crowning this achievement with a reflection exercise.

Both of these HUMAN needs are seen as highly motivational for role-players.

- *Apathy* – An apathetic attitude, having real HUMAN origins, could be the outcome of many project elements, which were not meeting adequately. The natural existence of apathy in the teams did not seem to be widespread; and

the indications were that it was not without justification. In these cases, procurement was a major cause.

- *Momentum* – The identification and experience of the construct of project momentum is a good example of the HUMAN factor in a project. The mechanistic perceptions of non-humans are typically not seen to be sensitive or even reliant on this momentum. A machine or computer would be hard-pressed to sense a loss of momentum; but HUMANs are keenly in tune with these types of ideas, even in technical and very logical operating environments, like construction-project teams. The importance of conceptualising the momentum direction on a project cannot be overemphasised; and also where intervention or maintenance are required.

When looking at the HUMAN origins of project-related issues, Nicholas and Steyn (2008) confirmed that the "human aspects" are important when management and organisational issues are addressed. Over time, this importance has not faded and the difficulty of managing the "soft" HUMAN issues has been confirmed by Nicholas and Steyn (2008), who indicate that these "soft" issues are actually as "hard as nails".

In summary of the above discussion, it has been noted that the manner, in which HUMAN resources are managed, impacts on a project's SUCCESS (Raiden, Dainty and Neale, 2004; Tabassi and Bakar, 2009; Emuze, 2011; Tabassi, Ramli and Bakar, 2012).

5.6.13 TECHNICAL

Table 31 represents the seven codes, which make up the category of TECHNICAL:

Table 31: TECHNICAL category-related codes (Researcher's Construct, 2017)

Code No.	Codes
2	Technical competence/ability
10	Procurement
31	Professional Consultancy Fees
16	Industry shortcomings
32	Site
27	Budget
10h	Procurement - Planning

Figure 42 shows the seven codes, which comprise the category of TECHNICAL:
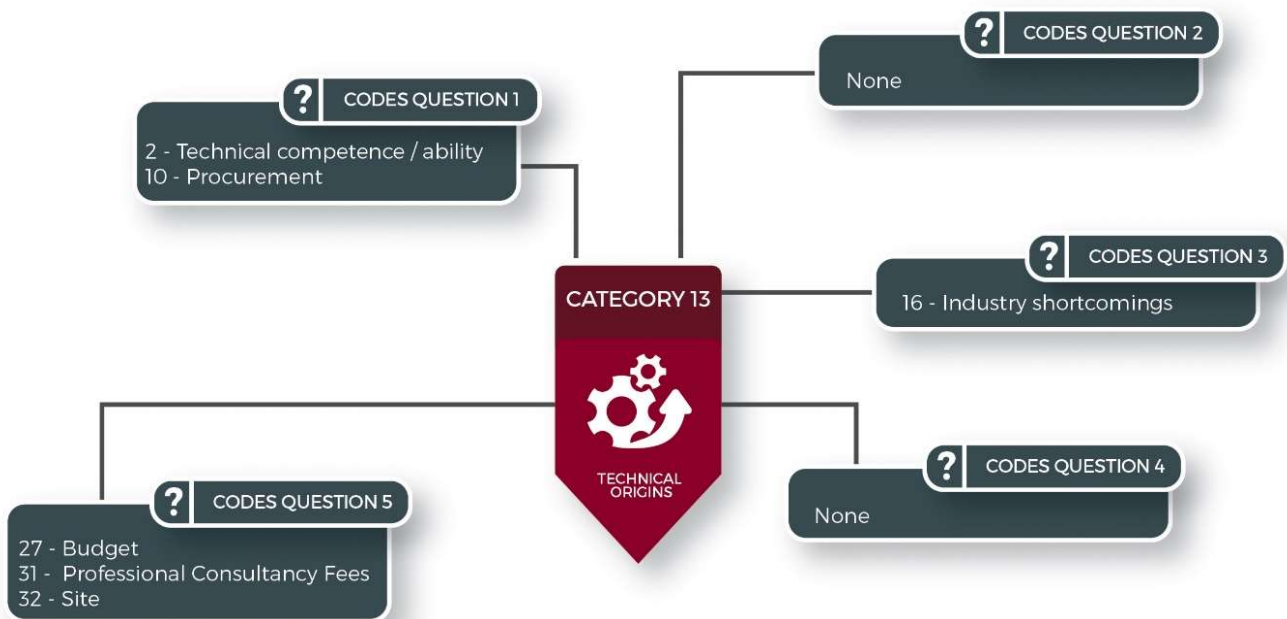
Figure 42: TECHNICAL category-related codes (Researcher's Construct, 2017)

Contrary to the many HUMAN-related or issues with HUMAN origins identified in the preceding category, the following discussion is purely linked to the matters surrounding the TECHNICAL project issues.

- *Technical competence/ability* – Although the embodiment of TECHNICAL competence/ability is the HUMAN role-players; the premise is still that there is a body of knowledge related to a discipline and industry, which can be used generically across projects, in order to successfully design, implement and hand over the completed construction projects to the CLIENTs. This TECHNICAL knowledge serves as the basis for very important team interaction.

- *Procurement; Professional Consultancy Fees* – Procurement can be seen as the mechanisms, documentation and strategies which are used to purchase the services of both consultants and contractors. The influence of the procurement aspect of each project has a definitive impact on the role-players. Procurement has the ability to facilitate PPM, which sets up a team of role-players to succeed. The influence and power of procurement, as a TECHNICAL element on the SUCCESS of a project should not be underestimated. The boundaries of engagement, relational arrangements, and continuity through re-appointment, ECI, PM/SME involvement, remuneration and planning all add to the project environment, which is governed by the manner of procurement and any subsequent contractual agreements.

  To alleviate some of the mentioned issues, the CIDB (2011) suggests the inclusion of functionality criteria for contractor and consultant procurement.

- *Industry shortcomings; Site* – Many of the shortcomings with diversity, quality and other issues are industry-wide. As a project team, these issues are outside their sphere of influence; and in a sense, they are 'takers' of a situation, which exists. For many projects, the current industry status influences and is reflected in the project. For these broader technically originated issues, the role-players could only engage beyond the project boundaries – to influence and make slow, but mechanistic changes to an industry well-known for resisting change. These engagement activities attempt to influence policies and the regulation thereof.

- *Budget; Procurement - Planning* – Money, as with time, is one of the contributing factors, which govern and frame project implementation. Budgets are usually pre-defined amounts based on CLIENT inputs, which are refined during the design process through estimates. Budget impacted on the case teams, but not more than expected: and almost to the level of being a nuisance. But the technical budget items were seen as a universal boundary for all; and

they did not have any extreme relational impacts when compared with Procurement.

Currently, industry research focuses largely on the TECHNICAL project-related matters (Chinowsky, Diekmann and Galotti, 2008; Peterson *et al.*, 2011); but it is proposed (Section 5.6.3 & 5.7.2) that a realignment of that focus could engage more with the HUMAN factors if the current research elements are viewed in connection with the many aspects that affect performance.

5.7 THEMES

This section indicates the penultimate step in the process of interpretation when again reflecting on Figure 11: Codes-to-theory model (Gibson and Brown 2009).

Chenail (2008) explains that the categories, as seen in the previous section, can be used to "discern semantic, logical, or theoretical links and connections" in-between the identified categories resulting in the identification of overarching themes. This section will show where the final categories assist in the establishment of the themes (Gibson and Brown, 2009:127).

The analysis to date has aimed to give relevance and understanding to the subsequent summary, conclusion and the recommendations of the thesis in Chapter 6.

In Table 32 below, the seven themes that unfolded from the research analysis are shown:

Table 32: Research themes (Researcher's Construct, 2018)

Theme No.	Themes
1	Relate
2	Love
3	Managing Leader
4	Procure
5	Motivators
6	Barriers / Drivers
7	Momentum

The following sections discuss the themes and relate to how they were derived from the aggregated categories; additionally, some of the practical implications are also be noted.

5.7.1 RELATE

Table 33 reflects the four categories, which have shaped the theme of RELATE:

Table 33: RELATE theme-related categories (Researcher's Construct, 2017)

Categories No.	Categories
1	Relationships
2	Cohesion
3	Trust
4	Communication

Figure 43 notes the four categories, which comprise the theme of RELATE:
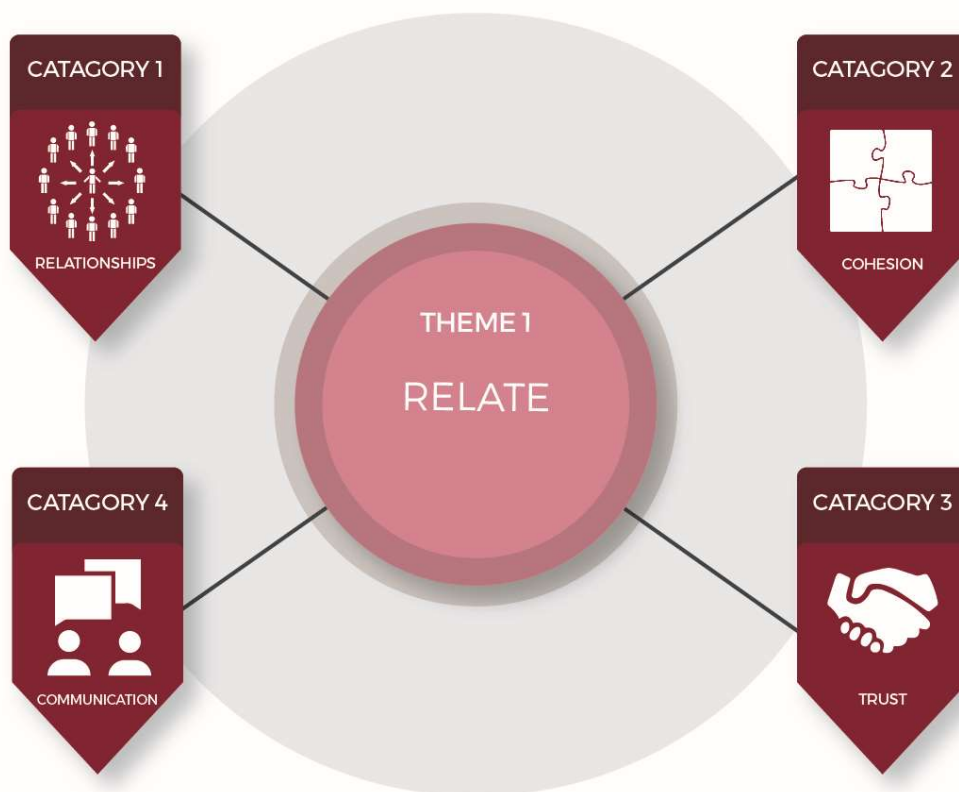
Figure 43: RELATE theme-related categories (Researcher's Construct, 2017)

The influences on how role-players RELATE to each other on a project are important for the overall functioning of the role-players. The RELATE actions take place across the entire spectrum of activities on projects; and they virtually penetrate into all spheres of the operation. Time-wise, at the initiation of a project being conceptualised,

up to the date of final completion, the role-players RELATE in many ways, in order to ultimately ensure SUCCESS.

Operationally, role-players have to RELATE in all aspects, in order to be able to function. The need and the ability to RELATE to each other in these project environments are influenced by the complexity surrounding the project. Both Bertelsen et al. (2007) and Shelbourne (2006) noted that the complexity is mainly characterised by the once-off projects undertaken by the multidisciplinary teams. The CHALLENGEs faced by such a socio-organisational set-up are encapsulated in the five categories, which comprise this theme; and they align with Rezgui's (2007) list, which also identified similar CHALLENGEs, such as trust and motivation.

In an industry, which is technically driven, it is interesting to see how important relationships are in reaching outcomes. In many ways, the main "tool" in the industry is still people. All INFORMATION, design, contracts, communication, negotiation and interaction are people-oriented or people-driven.

It is as if the industry has not really accepted this truth; or it has not understood its implications in the South African environment.

Research which focuses on the project teams and individual role-players is not well presented (Chinowsky, Diekmann and Galotti, 2008; Peterson et al., 2011). This is a relationship, which seems to be almost too HUMAN to discuss in the construction industry, as a prerequisite for performance. Although most other spheres of life are set up solely on relationships; yet, no academic curricula in South Africa have been set up to teach and support relationship-building as a factor in performance. Instead, it is seen as a stroke of luck, if a team is operating well and has good HUMAN relations.

Role-players appreciate the positive impact of cohesion in teams and its influence on performance – in such an interdependent environment. Role-players also take pro-active intentional interactions, in order to create cohesion. The cohesion in teams is affected by the actions of others and the situational issues. Role-players' actions relate to the operational performance and the integrity of others. Situational issues (Budget, Procurement, Professional fees & Site) play a part in the environment created, within which the role-players are required to perform.

These situational issues differ with each project; and they either add to; or they alleviate pressure on the team, which influences the cohesion. The cohesion in teams

could also be seen as part of the natural HUMAN needs to have good relationships and to be part of a team. Currently, one opposing force for cohesion is the environment created by the procurement process and any agreements.

The author argues that if the playing field or platform, on which we are performing, is set up correctly by the procurement process and strategy, the environment created would induce, rather than restrict, how role-players RELATE. Subsequently, performance should follow suite. Continuous involvement on teams is greatly influenced by procurement; and it could be argued that cohesive actions and team cohesion would increase in teams that are involved in an on-going basis.

Many authors mention the influence of trust on how people subsequently RELATE to each other. If the above-mentioned factors' impact on performance is noted; and the importance, with which trust as a basis for team dysfunction is accepted (Werner et al., 2011:160), one would be foolish not to heed Smyth's (2015) call to make the acquisition of trust an absolute focal point. The focus should be on the way role-players behave; and their ability to do their work. Trust is facilitated, maintained and leveraged on in teams that are continuously involved over a period of time.

One activity by which trust is greatly influenced is the manner in which role-players communicate. Communication is vitally important in the multi-disciplinary environment, where role-players are able to RELATE to each other. Communication in these environments is evidenced as being the channel through which both the TECHNICAL and relational interaction take place.

5.7.2 LOVE

The theme of LOVE comprises the following four categories, as indicated in Table 34 below:

Table 34: LOVE theme-related categories (Researcher's Construct, 2017)

Categories No.	Categories
5	Challenge
6	Success
7	Pride
8	Ownership

Figure 44 below shows the four categories, which together form part of the category of LOVE:
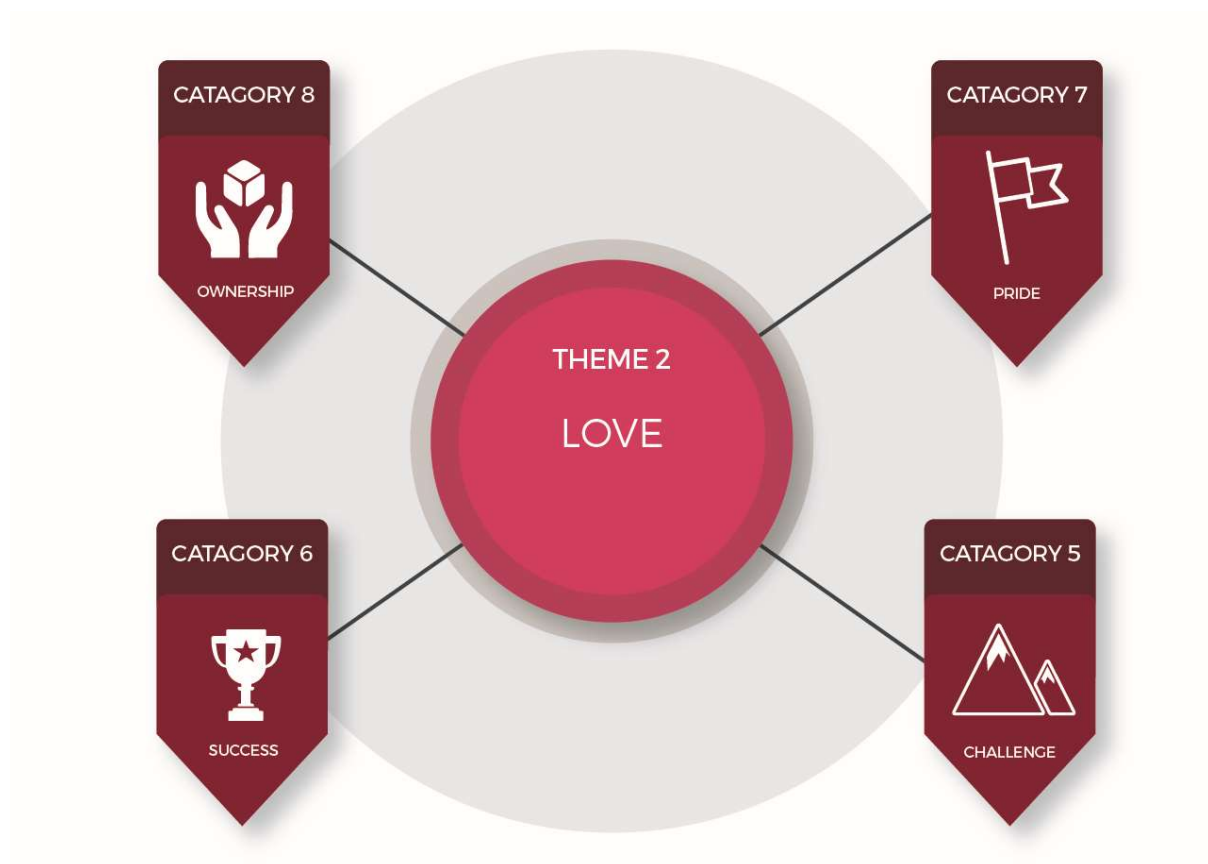
Figure 44: Love theme-related categories (Researcher's Construct, 2017)

LOVE as a word, is used in many ways in our everyday lives. The normal meaning of this word indicates strong feelings of affection, and finding great pleasure in something. The four categories, in which these feelings were identified were: SUCCESS, CHALLENGE, PRIDE and OWNERSHIP.

Although ill-defined, SUCCESS is definitely a driving force and the aim of a team of role-players. The dependence on others to perform adds a great dynamic to these teams, because everyone involved is required to perform. None of these projects has one person operating with minor external inputs. In contrast, the interaction is in-depth; and it is an absolute requirement to work towards and to achieve SUCCESS. The feelings and emotion involved with these interactions evoke a sense of LOVE towards the outcomes, processes and people involved to actually enjoy, engage and be a part of the build-up and eventual project SUCCESS.

The many influences and impacts on the SUCCESS of a project are noted in the categorical discussion; but noteworthy is the alignment of SUCCESS with CLIENT satisfaction. This is possibly due to the sustainability of role-players being linked to both SUCCESS and CLIENT-satisfaction. Therefore, the LOVE is also a feeling of need and desperation at stages, in order to ensure a feasible existence.

PRIDE as a "feeling of deep pleasure or satisfaction" and "consciousness of one's own dignity" was also noted as a loving interaction and feeling towards a project, its role-players and the project outcomes. The PRIDE reflected on both pleasure in the outcomes, but also on the role that an individual plays in the successful attainment thereof. Role-players indicated that they would like others to LOVE the project and take PRIDE in both their inputs, as well as in the overall SUCCESS of the project. Role-players also indicated both proud feelings towards the overcoming of TECHNICAL CHALLENGEs and the relational issues surrounding such teams.

The role-players' affection towards the project had an eventual outcome of taking OWNERSHIP of the tasks, responsibilities and outcomes of a project. OWNERSHIP of these elements is highly influential in the performance of role-players. The tasks on projects are connected with the TECHNICAL application and input of the discipline and the role-player-specific inputs. The responsibilities range from relational interaction to the timeous provision of the correct TECHNICAL inputs. Therefore, role-

players do not only take OWNERSHIP of the team and all the aspects linked to it; but they also focus on the ability to provide the TECHNICAL inputs required.

In this sense, they are "loving" both the team and the TECHNICAL aspects of projects. Apathy, as a coded section, possibly reflects the starkest contrast to OWNERSHIP and/or LOVE towards a project.

Role-players seem to LOVE the CHALLENGEs that projects bring. They are energised by the opportunity to pit their abilities against the many TECHNICAL and team CHALLENGEs, which are part of the project environment.

The above-mentioned discussion could be linked to what is defined as "Project affinity" by Dainty et al, (2005). In effect, a role-player's affinity determines the attitude and commitment towards the project outcomes (Dainty *et al.*, 2005). Dainty *et al.* (2005) explain that the role-players are less likely to commit to the project goals due to the projects being only temporary in nature. This lack of LOVE or commitment could have performance implications for the procurement strategies used by the CLIENTs.

Within this theme section, the indication should also be noted that an overstated or self-centred PRIDE or OWNERSHIP could be damaging to projects. In such situations, where the individual puts personal SUCCESS over and above the project and other outcomes, it could be dangerous; and this should be monitored closely. This type of 'love' is egocentric and not purely looking at the best interests of others, or the project. Similarly, the actions of survival, which are driven by the fear of either not having control, or losing one's job could also have logical negative outcomes on the operating environment.

5.7.3 THE MANAGING LEADER

Table 35 indicates the thirteen categories together comprise the theme of MANAGING LEADER:

Table 35: MANAGING LEADER theme-related categories (Researcher's Construct, 2017)

Categories No.	Category Name	Categories No.	Category Name	Categories No.	Category Name
1	Relationships	5	Challenge	9	Project Management
2	Cohesion	6	Success	10	Client
3	Trust	7	Pride	11	Information
4	Communication	8	Ownership	12	Human
				13	Technical

The theme of MANAGING LEADER is a combination of the following categories as shown in Figure 45 below:

Figure 45: Managing Leader theme-related categories (Researcher's Construct, 2017)

To set the stage for the theme of MANAGING LEADER, some background will be presented. This research study confirms the claims of Ballard and Howell (2004) that project complexity and uncertainty, cannot be managed in traditional ways. Howell and Koskela (2000) indicated that project performance will keep declining, due to an ever-growing "uncertain, complex and pressed-for-speed" environment. These comments could possibly be confirmed by most industrial operators. In light of this, and echoing their call, the implications of the theme aligns with the views of both Baiden *et al.* (2006) and Egan (1998), both of whom emphatically conclude that changes are required to the current ways we engage and manage the organisational and behavioural aspects of construction. The commentary relates, together with the implications for both the performance on projects and the eventual SUCCESS thereof.

Taking the above as background, and in slight contradiction to Sherrat and Farrell (2015), who indicate that 'leadership' is not 'management', this theme reflects the need in construction project environments to engage strongly with both of these issues. The role-players needs, highlighted by the commentary, indicated many environmental or "hygiene" features that require assistance and guidance; but on the other hand, also noting that strong leaders like the needs for vision, motivation and strategy. The expectations of the PM to fulfil these were high; and non-compliance was easily identified by the role-players and severely criticised.

This criticism was identified and categorised as incompetence and non-value addition by the PM; but it also highlighted the dependence on the role of the PM. In many cases, the needs were expressed interchangeably; and the words "lead" and "leader" were constantly used to discuss topics with both managerial and leader traits or functions. As explained by Sherrat and Farrell (2015), the difference between management and leadership is clear, with management focused on work and meeting the objectives; and leadership being focused on vision, inspiration and motivation.

Commentary from the obtained and analysed data reflect on the importance and impact of the PM related to the environment, which they create – by expressing both managerial and leadership abilities. Many of the required outcomes of these abilities could be enhanced by the use of PM software.

Interestingly, the role-players noted the example put forward by the PM, to be exceptionally motivational and therefore, like the leader. The PM's example impacted

the intensity with which others took OWNERSHIP and PRIDE in their roles. The exemplary actions of the PM reflecting on ethical expressions like transparency and trustworthy, but still operating from a technically able and competent base.

The relationally based impacts of the PM function on trust, cohesion and communication were expressed openly. The impact implicates not only the relational features between the PM and the role-players, but also the direct interaction between the role-players themselves.

Both Lee and Tiedens (2001) and Blake and Mouton (Werner *et al.*, 2011) suggest that leaders, who are able to orientate to both tasks and relationships, are exceptional.

PM activities with both managerial and leadership attributes were mentioned as influencing project momentum. Managerial tasks, such as effectively handling meetings and gathering INFORMATION, as tasks in the process of bottleneck resolution, were seen as pivotal for PPM conservation. Leadership actions, which included casting or giving vision, being pro-active and strategic were, by implication, mentioned as conserving and creating PPM.

This theme discussion also reflects on many of the questions posed by Hackman and Wageman (2007), who stated the need for new directions for leadership research. This direct relation is highlighted in the following questions:

- Under what conditions does leadership matter?

- How do leaders' personal attributes interact with the situational properties to shape the outcomes?

- Are good and poor leadership qualitatively different phenomena?

- How can leadership models be reformulated, so that they treat all system members as both leaders and followers?

Ofori (2012:249), Skipper and Bell (2006) indicate, that although the requirement for leadership is recognised in the industry, emphasis is still placed on managerial skills. This discussion proposes that both of these should be equally yoked; and that leadership and managerial skills and competence are required to successfully manage and lead projects towards SUCCESS through the optimisation of performance.

Finally, the teams formed during the project, have similar needs and characteristics, as any other "team" in a corporate or business environment. This became evident in the similarities noted in the data and the literature, based on the relationship needs, common goals and purpose, etc. These are very generic needs and requirements for teams to operate and perform; and they are mentioned widely in most academic writing. The real difference comes in the manner with which these issues are addressed, introduced and leveraged on by the PM in the built-environment project.

In section 5.7.2, the Project Husbandry concept is proposed as a possible answer to these mentioned requirements.

5.7.4 PROCURE

Table 36 notes the twelve categories that emanated and formed the theme of PROCURE:

Table 36: PROCURE theme-related categories (Researcher's Construct, 2017)

Categories No.	Category Name	Categories No.	Category Name	Categories No.	Category Name
1	Relationships	5	Challenge	10	Project Management
2	Cohesion	6	Success	11	Information
3	Trust	8	Ownership	12	Human
4	Communication	9	Client	13	Technical

Figure 46 below highlights the twelve categories which comprise the category of PROCURE:

Figure 46: PROCURE theme-related categories (Researcher's Construct, 2017)

The way in which procurement is executed in the examined cases influenced, firstly the environment in which the role-players operated, and then the subsequent performance of the team members. The use of traditional methods of procurement increases the negative effects, enforcing the views that:

- Current tender and procurement practices are not conducive to performance and overall project SUCCESS (Egan, 1998; Black, Akintoye and Fitzgerald, 2000; Eriksson and Westerberg, 2011; X Meng, 2012); and,
- Procurement-related barriers are the main contributors to client dissatisfaction (CIDB: South Africa, 2011)(CIDB: South Africa, 2015).

In line with the views of Watermeyer (2014), who notes that procurement strategy includes the decisions related to what is delivered and through which contract and the contracting arrangements, many strategies are not performance- or relationship-driven; and the industry needs to change (Egan, 1998; Black, Akintoye and Fitzgerald, 2000; Cumberlege, 2000; Pesämaa, Eriksson and Hair, 2009; Eriksson and Westerberg, 2011). The author agrees with the literature, indicating adaptation towards long-term relational contracts to assist with broad-based performance improvements (Egan, 1998; Chappell, Walker and Greenwood, 2002; X Meng, 2012; Watermeyer, 2014).

The effect of procurement on relationships was clear. How the role-players interact and build relationships is influenced by, and directed by the contractual arrangements, which are enforced by the CLIENTs. Many of these arrangements can be seen to be enforcing an age-old adversary and an uncooperative *status quo*. The outcome of many of the arrangements have dire implications for forming cohesive teams, when not leveraging continuous appointments for the role-players, or engaging with ECI.

Pesamaa, Eriksson and Hair (2009) state that: "Procurement is crucial; since it sets the basis for co-operation between the CLIENTs and the contractors".

Cohesive teams are only possible when role-players are engaged over a period of time to gain and maintain the necessary trusting environment. In such an environment, performance and the optimisation thereof can go through the process of refinement, as with most systems and methods. This refinement being more in line with what Smyth (2015) proposes, when indicating that relational contracting is not market- or procurement-driven; but it actually aims to leverage the relational capabilities to

increase performance. More relational contracting and progressive procurement strategies give positive momentum to the many team issues, which arise in projects and ensures that communication is effective and that INFORMATION flows between the parties.

It is as if most stakeholders involved in the industry can see the value of teams being formed and being given the ability to function as a team – until such time as they are proven to be unproductive. The reappointment of teams is then based on the leveraging of previous experience and the working lessons learnt.

Role-players found that new situations CHALLENGE their abilities, which actually motivate them. This principle rings true for procurement as well, where progressive procurement strategies (in these cases, Early Contractor Involvement [ECI]), challenged and motivated the role-players. They were excited about the possible team and performance advantages, which arose. At a HUMAN level, procurement seemingly has the ability to even influence the attainment of the individual's personal needs and aspirations. Teams are brought together in various ways, usually linked to the CLIENT's procurement policy.

In cases A and B, the contractor was brought earlier into the process, than is the norm. In these cases, the commentary noted that the design did not really gain too much from this interaction; but the real effect was felt on the relationship-building, which happened during this period of design review and detailing; and in both cases, value engineering. This created a platform for the teams to interact and get to know the incoming contractor.

SUCCESS on the project is definitely influenced through the impact that procurement has on such a broad spectrum of relational issues, which in turn, influence performance. Helper and Henderson (2015) noted the dismal sustainability outcomes for those who do not adapt to and develop effective relational contracts.

The environment created by the procurement strategy and the process could induce or enhance the apathetic attitudes of the role-players, which were found blameworthy, if the performance or project SUCCESS was in jeopardy.

It is noteworthy that Walker (2011:131) cautions against the use of incentives to counter apathy; and he rather suggests inducing an environment where role-players are given the opportunity to take OWNERSHIP.

CLIENTs, as the procurers of a process of product design and construction, are extremely influential in the industry. Crespin-Mazet and Portier (2010) identified that one of the main factors influencing the CLIENT's reluctance to partner with contractors is the understanding of what the concept of 'partnering' entails.

The comments related to teams, which worked well together; and those where the role-players felt that the communication and INFORMATION flow was good, mostly indicated that this was due to good fortune. The team functioning well, was a chance occurrence; and it was not orchestrated; nor was it meant to be so. This regrettably, in many cases, is probably the correct assumption. Few CLIENTs have proper screening in their tender requirements or documentation. It is noteworthy that we are procuring in many cases values well above the norm (R100 – 800 million), we would be foolish not to spend more time and effort to find a good team-playing individual to work with the rest of the team. The foolishness is accentuated if you reflect on the relative ease with which a CLIENT changes a team or brings in a new role player, because of a pricing issue, or a high-level strategic link.

The change could possibly have a negative impact on the team performance and current role-player interaction – all for the sake of saving a cent or two and possibly aligning with an internal interested party within the CLIENT organisation.

The effects of procurement decisions and the strategies undertaken reverberate throughout the entire project life-cycle. If the platform for performance created by the procurement activity is not well planned, executed and relationally inclined, the aim of optimal performance of such a team would possibly never be realised. For example, the influence on relations was previously mentioned for the appointment of the PM; and the indications are that emotional maturity and relational skills are equally as important as TECHNICAL skills, when employing PMs.

Specific mention is made of the background, competence and even the timing of the appointment in influencing how they are able to assist and guide the team.

Smyth (2015:48) notes as one of the many positives, that relational contracting induces customer focus.

Chappell, Walker and Greenwood (2002) noted the following pertinent issue with current procurement practice:

- No single service provider can manage the speed of technological advances and the TECHNICAL competence to provide the necessary skills for both design and production.

Avumba (2014) emphasises, as part of the drive to use more integrated and collaborative delivery methods, the need for research, which should focus on the social aspects.

5.7.5 MOTIVATORS

In Table 37, the categories which formed part of the theme of MOTIVATORS are reflected:

Table 37: MOTIVATORS theme-related categories (Researcher's Construct, 2017)

Categories No.	Category Name	Categories No.	Category Name
1	Relationships	6	Success
2	Cohesion	7	Pride
3	Trust	8	Ownership
4	Communication	12	Human
5	Challenge		

Figure 47 highlights the nine categories, which comprised the theme of MOTIVATORS:

Figure 47: MOTIVATORS theme-related categories (Researcher's Construct, 2017)

In attempting to satisfy the objectives of the research, and in line with the identified aspects noted in certain categories, the theme of MOTIVATORS was created. This theme will encapsulate not only what motivates the role-players; but it will also discuss the issues surrounding motivation in the construction environment. As identified in Herzberg's theory, the main focus is on the noted Hygiene Factors and MOTIVATORS. In this theme, the MOTIVATORS and the issues, which impact the motivation will be discussed. The following Section 5.6.6, will discuss and identify the Hygiene Factors, as both Barriers and Drivers.

MOTIVATORS are intrinsic; or they are found in the internal personal realm of role-players (Werner *et al.*, 2011). MOTIVATORS can lead to role-players experiencing satisfaction (Herzberg, 1965, 1968, 1974; Verma, 1996; Werner *et al.*, 2011). These internal aspects, which gain satisfaction lead to "voluntary activities" by the role-players (Vroom, 1964). The voluntary aspect of the activity being the great difference between either a motivator, or a hygienic factor. As noted in Section 3.2 (Theoretical and Conceptual Framework), the premise is that the satisfaction of the hygienic factors could only lead to role-players experiencing no dissatisfaction, or being neutral; whereas the theme of MOTIVATORS leads to satisfaction. The need to satisfy the hygiene factors should preclude the attempts to motivate. Finally, motivated, satisfied role-players are more likely to perform optimally.

The personal or intrinsic MOTIVATORS identified were in the following categories:
- Relationships;
- Cohesion;
- Trust;
- Communication;
- Challenge;
- Success;
- Pride;
- Ownership; and,
- Human.

The first four MOTIVATORS, listed above, reflect on how the role-players RELATE to each other and this was found to be motivational. Due to these identified

MOTIVATORS, the many relational issues like transparency, cohesion, trust, communication etc., should be seen as important by practitioners. The categories CHALLENGE, SUCCESS, PRIDE and OWNERSHIP where combined to form the theme LOVE. This theme indicates those personal intrinsic issues, which have strong relations to the mentioned "voluntary activity".

All of the above-mentioned have the ability to acquire and to evoke motivation. Role-players were honest in their feedback on how these issues motivate and positively influence performance. Resulting from the role-players feedback, one can sense the ignition and freedom which these MOTIVATORS provide. Where these MOTIVATORS are engaged with effectively, it reflects on a mental state or environment where role-players could actually be optimally performing, or at least working towards that.

When discussing, firstly, the identification of MOTIVATORS; and secondly what influences those MOTIVATORS, the identification could be seen as being the easier of the two tasks. This is due to the many intricate influencing factors, which reflect on the role-players' current experience on projects. These influences and impacts were discussed under each category. It is important to note that many of these influencing factors are "hygiene-related", or have their origins as hygiene factors.

This reinforces the initial theoretical and conceptual framework discussion, which noted that basic "hygiene" requirements must be met before motivation could occur, or be initiated.

Not exhaustive, but the following indicate some of the mentioned influences on MOTIVATORS, in which the "hygiene-related" aspects are highlighted:
- Technical competence/ability;
- Continuity of team members;
- Procurement; Internal support;
- Budget;
- Professional Fees; and,
- Fear of losing my job.

These listed items were noted to influence the MOTIVATORS.

The mentioned "hygiene" factors seemingly also have a stronger inclination to the managerial aspects, when looking at the requirements of someone leading these role-player teams. These aspects have implications for reinforcing the discussion on the theme MANAGING LEADER. The management aspects are important when seeking to satisfy the "hygiene-related aspects"; and then only can one move onward to the leadership aspects. Herzberg (1966) indicates that motivational efforts are in vain if the "hygiene" factors are not adequately met.

The implications of Herzberg's comments is that even though these MOTIVATORS are mentioned, they would be ineffective and virtually futile unless the hygiene factors are satisfied. In these cases, this seems to be correct, because of the subsequent effect this would have on the MOTIVATORS. The implications for "leadership" activities are that they will only have the full effect and a positive outcome, if the managerial requirements have been successfully adhered to.

5.7.6 BARRIERS / DRIVERS

Table 38 reflects the 13 categories, which finally formed the theme BARRIERS/DRIVERS:

Table 38: BARRIERS/DRIVERS theme-related categories (Researcher's Construct, 2017)

Categories No.	Category Name	Categories No.	Category Name	Categories No.	Category Name
1	Relationships	5	Challenge	9	Client
2	Cohesion	6	Success	10	Project Management
3	Trust	7	Pride	11	Information
4	Communication	8	Ownership	12	Human
				13	Technical

Figure 48 below shows the 13 categories, which influence the theme of BARRIERS/DRIVERS:

Figure 48: BARRIERS/DRIVERS theme-related categories (Researcher's Construct, 2017)

Following on, and strongly related to the theme discussion on MOTIVATORS, this theme termed BARRIERS/DRIVERS indicates the many hygiene-related issues, as expressed by Herzberg (1966, 1968). Furthermore, just reiterating the implications of Herzberg's commentary that the satisfaction of the hygiene-related factors could lead to a situation, in which the role-players are ready to be motivated. The previous theme also highlighted that managerial associations can be identified with many of these hygiene-related issues.

The categories identified as part of this theme had specific and broad implications for the projects' operating environment. The many codes reflected on in the categories have possibly both DRIVER- and barrier-capabilities. Therefore, the specific applications or outcomes on each project would either create a barrier or a DRIVER towards performance for the role-players. These DRIVERS are different from MOTIVATORS, as they are lures or "carrots" and not necessarily pure MOTIVATORS, which induce "voluntary" activity. The BARRIERS simply strain or block the performance of the role-players.

The CLIENT's impact and role was seen as either a barrier or a DRIVER. The impact they had on TECHNICAL issues like Procurement, Professional Fees and Budgets were so profound that they could be seen as defining the environment in which the role-players would operate for the duration of the project. The issues with TECHNICAL origins are defined by typical environmental shaping elements, which create the platform and boundaries within which the role-players would work. As individuals, the CLIENT representatives engage with the MOTIVATORS; but their greatest impact was felt on the environment created, and the on-going effects thereof.

Similarly, PROJECT MANAGEMENT also has a broad impact on the role-players and the many managerial associations directly implicating the PM on a project. The directly mentioned managerial issues, such as planning, keeping others focused, and the gathering of INFORMATION, are important.

INFORMATION, as a commodity, has great potential to create a "hygienic" environment. If all the INFORMATION is reaching its receivers and the feedback is constant and correct, the net effect would be an optimal performance environment.

5.7.7 MOMENTUM

Table 39 reflects the 13 categories, which finally formed the theme of MOMENTUM:

Table 39: MOMENTUM theme-related categories (Researcher's Construct, 2017)

Categories No.	Category Name	Categories No.	Category Name	Categories No.	Category Name
1	Relationships	5	Challenge	9	Client
2	Cohesion	6	Success	10	Project Management
3	Trust	7	Pride	11	Information
4	Communication	8	Ownership	12	Human
				13	Technical

Figure 49 indicates the 13 categories, which influence, cause and relate to the theme of MOMENTUM:

Figure 49: MOMENTUM theme-related categories (Researcher's Construct, 2017)

Essentially, the construct of MOMENTUM as an existing but unseen force was identified as the final, but crucial theme. From the data obtained, it was indicated that each action, activity, communication, interaction or process either has a positive or negative impact on the team, and the eventual direction and outcome. Therefore, the project environment is in flux and the MOMENTUM is changing constantly. The pace and direction of change is altered by the actions and environmental factors impacting on the project.

As a premise of this principle of MOMENTUM gain and loss, the PPM is gained by conserving and creating activities and influences. Contrary to PPM, the NPM is extended by decaying and destructive activities and influences.

During times of possible non-activity or influence from environmental factors, the current MOMENTUM direction will automatically be followed. The current direction of the MOMENTUM plays a role in the MOMENTUM being ongoing, or positive, or negative. To notice this flux could be important and activate those involved in PROJECT MANAGEMENT to constantly engage in PPM activities; and to ensure that the influences are creative and conserving.

Role-players reactively recognise the effect of actions on the MOMENTUM; but the focus should not only be on recognition; but it should be able to shift to prediction, overcoming and negating the MOMENTUM decay/destruction items, or circumstances. The pro-active actions by the PM satisfy the need expressed by the role-players as they are observed, in conjunction with many other elements, they rely on the PPM on a project to engage with possible performance optimisation.

The feedback alluded to the continuous cumulative effect of actions; and these actions build either positive or negative MOMENTUM. This relates to role-players gaining movement in a direction through continuous actions. The previous action enhances the current movement and facilitates the future actions; and it can even further the current direction. Collins (2001) discusses the way in which business operates, as it moves towards greatness (Flywheel), or falls into failure (Doom Loop) suggesting the same slow and growing movement towards an outcome.

This outcome is either a final SUCCESS or a failure. In most instances, the results comprise the cumulative decisions made over a long period of time in the business. In

the project scenario, it could relate to the many decisions and actions taken in the life cycle.

The influence of relationships to drive MOMENTUM is identifiable. Brittle or broken relations are seen as possibly the greatest DRIVER or initiator of NPM. Without relationships, very little positive actions can take place in the project environment. Relationships thus provide as many opportunities as potholes for the conservation and creation of PPM: as a reflection on the level of commitment and the linkage between the members, Cohesion between the team members is essential for PPM. Trust as a basis of almost all the relational interaction could also be seen as a gauge of the current MOMENTUM direction on a project once again, when looking at role-player commitment and inclinations towards self-preservation.

Communication as a channel for both the relational and TECHNICAL INFORMATION flows is imperative, in order to gain PPM and negate NPM.

Challenging environments and the initial foreseen CHALLENGEs of a project could be seen to initiate PPM. If this initial excitement could be properly harnessed to get the PPM going, at least the direction would be set; and further actions could then be set in place – to keep the MOMENTUM going in the positive direction. These attempts to conserve PPM can be made before some of the noted apprehension or naysaying becomes decaying or deconstructive.

It was repeatedly noted that the role-players envisage that things could turn for the worse at any time; and there was almost an assumption that it would so. This negative assumption has probably been built up over a number of years of experience with projects. But if you align these thoughts with those of Collins (2011) and the flywheel, or the doom loop, it could be that people already experience negativity; and, in fact, it is already growing in that direction.

The most likely outcome of a project with PPM, is SUCCESS. In line with commentary from Collins (2001), the understanding is that the overall SUCCESS is the sum of many minor successes.

At a personal individual level, the PRIDE taken in work and recognition thereof are PPM conserving and creative. The intensity with which role-players take OWNERSHIP is also reflective of the direction that the MOMENTUM is currently taking on a project.

The CLIENT as definer of the platform on which the role-players will perform, and their roles throughout the entire project life-cycle, has implications for the MOMENTUM. The decisions and actions taken by the CLIENT greatly impact the direction of the MOMENTUM on a project.

PMs are required; and they play a role in the conservation of MOMENTUM. Role-players reflected on the high expectations they demand from the PM; and notable commentary indicates a sense of keeping "everything" in place and functioning. This requirement could have its greatest source in the overall need for the PM to assist with keeping the project on a PPM path, and assisting with negating and overcoming any decaying or destructive elements.

Some of the participants noted a loss of MOMENTUM or drive during the projects. This can become worse; and in instances, it spirals out of control. This aligns again with the concepts from Collins (2001) related to the metaphors of a flywheel (The Flywheel Effect) and a doom loop (The Doom Loop). In both circumstances, it is consistent on-going systematic moves, decisions or actions, which create each of these outcomes. Both of these almost build on the many previous moves, decisions or actions and create the environment in which role-players would be able to operate in the present – but even more importantly, the influences on the future. It seems to be a cumulative process.

According to Collins (2001), the on-going positive or negative movement, almost attracts the same energy or movement from the participants. It is like the draft of wind, which pulls in certain elements, like leaves, paper or dust. The movement of the wind attracts the elements to do the same and to move in the direction of the wind. If the movement is positive, it seems to attract that same movement from the various role-players; and it is well-known in the construction industry. If it is negative, it definitely attracts negative movement. In an industry, which faces many negative challenges, the way in which the team is already progressing (be it positive or negative) would influence the manner in which the team is able to either overcome or be overcome by a negative challenge. In many instances, Collins (2001) notes, it is in a person's nature to be part of something that works, and to contribute to it, as part of the team.

5.8 REFINED THEORETICAL FRAMEWORK AND THE CONCEPT OF PROJECT HUSBANDRY

During the entire research undertaking and final analysis and interpretation, it was felt that in line with the theoretical and conceptual frameworks, the researcher could assist practitioners in the following ways, as summarised from the research objectives:

- To evaluate the team dynamics and environmental factors that influence role-player performance;

- To establish the effect of organisational culture on role-player performance;

- To examine the effect of diversity on role-player performance;

- To examine the influence of management and leadership, including Project Managers on role-player performance; and,

- Finally, to establish the issues that drive, motivates, or constrain performance of role-players.

All of the above culminate ultimately into enhancing project performance.

The reviewed literature indicates a case for change in the broader industry and in the type of management or leadership practice taking place. The literature further calls for "soft" skills to be acutely enriched to ensure that the management and leadership would be able to operate better. As alluded to by Gibson and Brown (2009) and shown in Figure 11: Codes-to-theory model (Gibson and Brown 2009), the combination of the research objectives and the themed outcomes, proposes the following theoretical assertions:

- A theoretical framework for construction project role-player performance optimisation; and,

- The concept of Project Husbandry.

5.8.1 Performance optimisation framework

The framework for optimisation, graphically presented on page 386 (Fig. 50), indicates the theme headings in relation to where they operate; and the need to co-exist in creating environments and opportunities for teams of construction project role-players to perform optimally.

The idea remains, in line with Herzberg's thoughts and the initial framework that the hygiene-related BARRIERS/DRIVERS operate at the level of dissatisfaction. While these BARRIERS exist and DRIVERS are the only performance initiators, the role-players can only reach a level of neutrality. In this neutral state, role-players would be doing only what is required. This minimum required operation, could possibly create frustration in the teams and reinforce the current CLIENT dissatisfaction.

As part of the hygiene-environment creating factors, procurement is the greatest barrier. If the project owners and planners PROCURE erroneously, the effects would be felt throughout the project life-cycle and the processes.

Moving higher up in the diagram, satisfaction can be achieved when MOTIVATORS exist. These MOTIVATORS create a place, in which the role-players actually LOVE what they do.

Vertically, there are two themes, which impact the entire framework:

- RELATE, indicates the mentioned importance and impact of how role-players RELATE and the effect thereof on performance; and

- MANAGING LEADER notes the importance of the role-player appointed to be in charge of these teams. The importance indicates a focus on both the aspects of managing and leading; but it operates from the principle that PMs first manage all the barrier- and DRIVER-themed issues; and then only, do they move towards the leader-like activities, which leverage the impact of LOVE-themed attributes. As mentioned during the discussion in Section 3.2.3, there is a flow, whereby a person would only be motivated, once the hygiene factors have been satisfactorily met; and the person has become satisfied. Only once a person is in a "neutral" position, can they be motivated to perform optimally.

The final proposed framework as depicted in Figure 50 suggests:

- As mentioned for the role-players, a possible flow from the bottom-up – from being dissatisfied, becoming neutral and finally aiming for satisfaction;

- The ability of the hygiene factors (BARRIERS/DRIVERS) to only move a person towards neutrality;

- Only the MOTIVATORS could logically lead to motivation, which would, in all probability, lead to possible satisfaction and performance;

- Once in a neutral state, the opportunity exists for role-players to start to engage with MOTIVATORS and aspects that they LOVE to do; and

- All actions and attitudes on a project have either a positive (PPM) or a negative (NPM) impact on project MOMENTUM. The cumulative effect of these actions impacts on the overall possibility of role-player satisfaction and project SUCCESS.
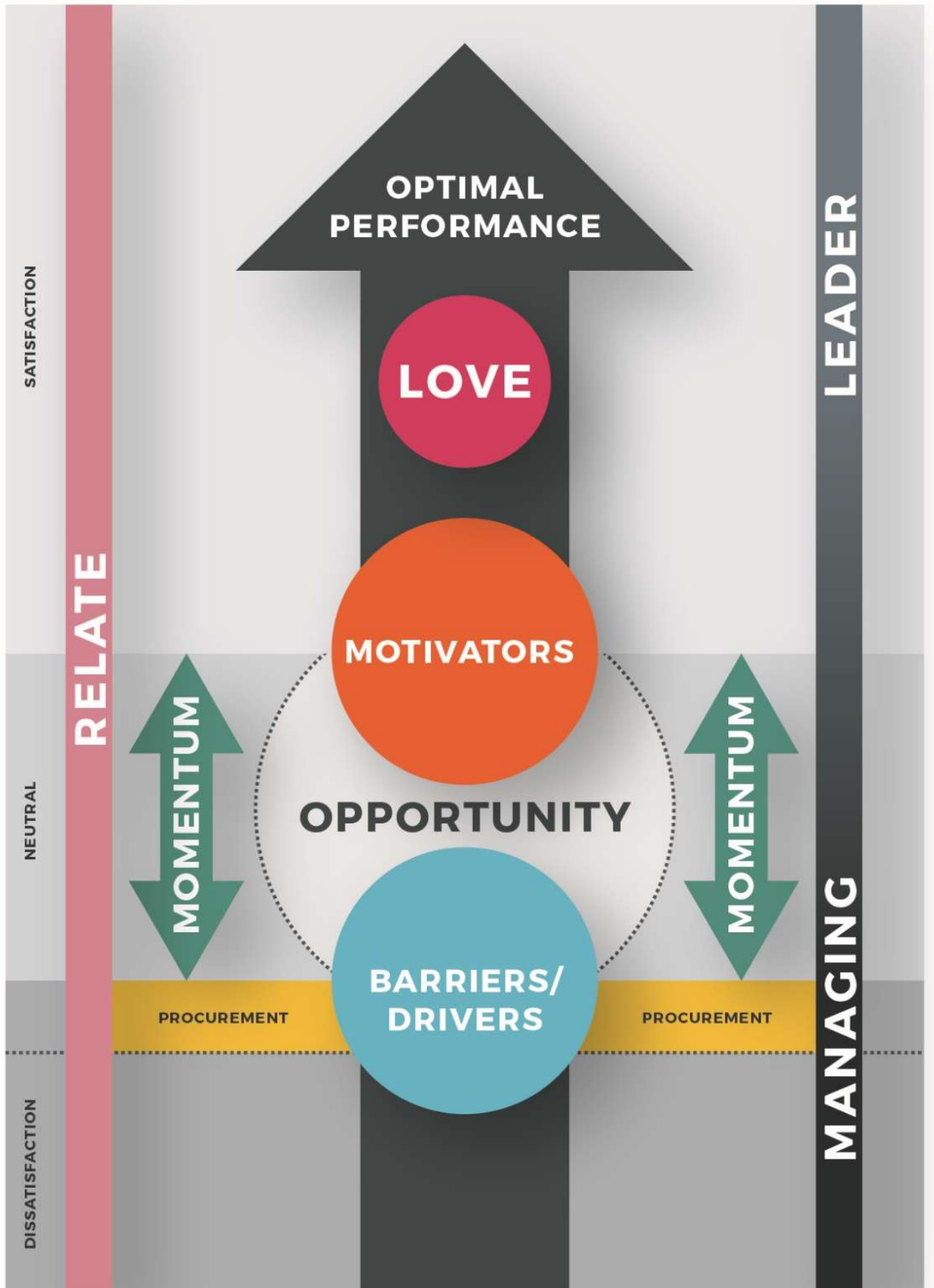
Figure 50: Performance optimisation framework (Researcher's Construct, 2017)

In summary, role-players could experience three operational statuses:

- Dissatisfaction;

- Neutrality; or

- Satisfaction.

Amongst all the hygiene factors, which might keep role-players dissatisfied, procurement is the greatest barrier to overcome, because of it's far and wide implications.

The entire operational function in a project is influenced by:

- The manner in which the role-players RELATE to each other; and

- Firstly, the effective management of the project environment; and secondly the leader-like attributes to evoke others to become motivated and love what they are doing.

Finally, the framework suggests the acute understanding and appreciation of project MOMENTUM as an unseen but powerful force, which is the sum of many actions; and it directs the current movement or direction of the role-players' actions and attitudes.

5.8.2 Project Husbandry

The definition of the word, 'husbandry' places some intentional focus on the following:

- Taking care of;

- Judicious control/conservation of resources;

- Cultivation; and,

- Scientific control and management.

The above-mentioned definition of 'husbandry', archaically refers to the role of a domestic husband; and later on it was used mostly in the agricultural land and animal-management context.

Throughout the data, many views and comments were made about the role, impact and expectations of the role-player appointed as the PM in charge of a project. Linked to the discussion on the theme MANAGING LEADER, the concept of Project

Husbandry goes further to elevate the level of care, nurturing, diligence and maturity required to both manage and lead these teams of role-players.

The researcher realised the sense of a real need for someone to be the ultimate example of effort and commitment; while still being technically skilled and able to ensure that firstly the managerial aspects of a project are cared for sufficiently, so as not to create hygienic BARRIERS to performance. Thereafter, this same person is required to evoke and leverage the aspects of projects that role-players LOVE.

A Project Husband would set up the team to succeed by managing the hygienic environment and nurturing the needs, which motivate the role-players. This type of approach by a PM would be dual-focused and skilled; because this concept moves to combine both the mechanistic, and the schematic planned management/leadership styles or approaches with very sensitive nurturing aspects, which are guided by the organic fluid-project environment. However, this approach is ultimately focused on motivating the role-players and optimising their performance.

This motivation gives the role-players the levels of satisfaction they are looking for and fulfilling the greater needs of a HUMAN – even beyond the boundaries of the project. These opportunities created by the Project Husband are in line with Herzberg's (1966:x) comments that any institution's primary function should be to "implement the needs for man to enjoy a meaningful existence". In this vein, the Project Husband would look after the needs of all, in order to ensure a sustainable, meaningful "existence".

In the various cases, some of the commentary alluded to the PMs performing well and even doing a good job in leading the team. When reviewed, much of these comments were aligned with managerial aspects like communication, INFORMATION gathering and planning being done well. This reflects well on the proposals made, the data collected and the current literature, which reiterates the fact that if the environment is barrier-free and well-managed, the role-players can start to engage with MOTIVATORS.

Jay (2003:25) notes that in the right environment, team members would "effectively motivate themselves". These MOTIVATORS are the key to subsequent higher levels of performance, and the first steps to optimisation.

The main elements reflected on for direction towards the achievement of an optimal performing team through the Project-Husbandry approach are:

- Cultivating an environment in which the role-players are able to sensibly RELATE to each other. This environment would create and maintain RELATIONSHIPS. Team cohesion would be carefully monitored. Role-players would be invited to TRUST each other and to gain trust over time. COMMUNICATION would be open and expressed in a manner that is conducive to creating a positive interdependent environment in which INFORMATION can flow freely.

- Role-players would be empowered to really LOVE what they do. This LOVE is driven and assisted by the role-players being empowered and encouraged to take OWNERSHIP and PRIDE in their specific responsibility spheres. Furthermore, the CHALLENGE of each project should be highlighted, as a motivational tool to encourage role-players to really engage with the project. Finally, all of these elements must be harnessed to drive towards the SUCCESS to which the role-players aspire.

- The PM would engage and exemplify in both the managerial and leadership aspects on projects. The PM, through the Project-Husbandry approach, would prepare and cultivate a well-managed environment, to ensure that role-players are able to engage with the MOTIVATORS on projects. The motivational aspects of projects would organically engage with the role-players in such an environment; however, leadership activities like the sharing of a vision, strategizing and pro-active actions would enhance the possibility of engagement.

- The Project-Husbandry concept alludes to the creation of an ideal environment for role-players in which to perform. This should at all costs be based on a relational procurement strategy.

- The initiation, creation and conservation of MOMENTUM would be a key ingredient in the overall approach, in order to ensure a slow and continuous growth towards overall project SUCCESS. The Project Husband would appreciate that many small successes would constantly add to PPM and inevitably give the team SUCCESS. Alternatively, the MOMENTUM decaying

or destructive activities, attitudes and actions would be carefully monitored and controlled – to ensure that none of these would acquire so much NPM, as to steer the project to failure.

- Using this approach to PM, would give rise to PMs who understand that project BARRIERS have both HUMAN and TECHNICAL origins; and they should be tactfully but rigorously dealt with. This tactful rigour should create a hygienic environment and be motivational through the example of the work ethic exemplified by the PM. MOTIVATORS are mostly intrinsic; and role-players should be invited to organically engage with these in hygienic-project environments.

In summary, Project Husbandry entails the exemplary management of the hygienic environment to cultivate the ideal platform, from which the project team role-players can be introduced, and organically engage with the motivational aspects of such projects for the optimisation of performance.

5.9 Chapter Summary

This chapter encompassed the presentation of the analysed data reflecting initially on thematic analysis and the relevance of context in case studies.

Thereafter the codes, categories and emergent themes were presented, with the chapter finally converging towards the outcomes of the refined theoretical framework presented as the Performance Optimisation Framework and the Project Husbandry approach towards project management.

The following, and final chapter in the study, summarises, concludes and make recommendations related to the overall study.

6. CHAPTER 6: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

In this chapter the research undertaking is summarised. The summary includes a reflection on the research problem and the questions, a statement of the initial aim and objectives; it expresses the use and importance of the Theoretical and Conceptual frameworks; and it notes the research methodology employed in the study. The chapter further summarises the key research findings, noting the research outcomes; and it indicates the alignment of the findings with the initial research objectives. The final sections in the chapter note the overall conclusions of the research, the contribution to knowledge that the research has made, and the recommendations made to various stakeholders. And finally, a critical evaluation of the research methods employed; and lastly some suggestions are made for future research projects, which have emanated from this study.

6.2 Summary of the Research

The current sub-optimal performance of the construction industry requires the implementation of changes in the manner of operation. One possible operational change relates to the manner in which project teams are managed, when seeking to optimise their performance. The optimal performance of these teams subsequently impacts the entire life-cycle of a project; and impacts on the drive towards the overall performance optimisation of the construction industry.

Taking into account the various operational and general management inputs into optimising performance, and also their limitations when applied to the construction-project environment, the research has investigated the many nuances of role-player motivation and the environment in which the role-players operate.

The aim and directional objective of this research was to seek further understanding of the sub-optimal performance of construction-project role-players in a team environment, taking into account the leadership, the team dynamics, the organisational culture, the team diversity and the major performance BARRIERS/DRIVERS impacting on these teams.

6.3   Research problem and questions

The main research problem was identified as that the current construction role-player performance is sub-optimal. This problem led to the main research question being articulated as:

> How can role-players be motivated and the operating environment improved to optimise performance on a construction project?

To assist the above-mentioned problem, and to provide clarity on the main research question, the following investigative subquestions were identified under the major reviewed subjects aligned with the literature in Chapter 2:

Teams – Dynamics, Organisational Culture and Diversity:
Question 1:
Question 1a: What are the team dynamics that influence project role-players' performance?
Question 1b: What environmental factors are causing dysfunction within the project teams?
Question 2:
What is the effect on performance of the combination of the various role-player organisational cultures on the projects?
Question 3:
In what ways does the diversity of role-players impact performance?
Leadership/Management – Influence and Practice
Question 4:
Question 4a: What is the influence of the project manager on the role-players' performance?
Question 4b: What management and leadership practice would be needed to enable optimum role-player performance?
Performance – Drivers, Motivators and Barriers
Question 5:
Question 5a: What are the performance barriers experienced by role-players?

Question 5b: What drives role-players to perform?
Question 5c: What motivates role-players to perform?

6.4   Research aim and objectives

This research's aim and objectives are applied to the motivation of project teams, with emphasis on optimisation of performance. An optimally performing team should focus on the requirements of the 21st Century clients. The research aimed to enhance project role-players' performance and to directly add valuable theory-related insights to construction-projects' team performance and management.

The objectives of the research where stated as:

- Objective 1: To evaluate the team dynamics and environmental factors that influence role-player performance;

- Objective 2: To establish the effect of organisational culture on role-player performance;

- Objective 3: To examine the effect of diversity on role-player performance;

- Objective 4: To examine the influence of management and leadership, including Project Managers on role-player performance; and,

- Objective 5: To establish the issues that drive, motivate, or constrain performance of role-players.

6.5   Theoretical and conceptual frameworks

Herzberg's Two-factor theory in conjunction with performance models, which indicate performance-dependent factors, created a firm theoretical basis for the research; and it clarifies the position and the point of entry in the construction project management discipline. From the theoretical framework, the conceptual framework emerged; and it clarifies the many concepts, which are key to the research.

Both the theoretical and conceptual frameworks were instrumental in the analysis and final outcomes of the research – to shape and guide the application of the findings and a better understanding of the construction-project environment.

6.6 Research methodology and techniques

A qualitative research approach, aligned with the Subjectivist ontology and Interpretivist epistemology associated with the Interpretivism paradigm were used for the study. The qualitative approach presented numerous advantages to investigate the many nuances, to which the research problem and questions allude. As noted before, qualitative research is a potent tool when studying the meanings people place on events, processes and structures (Amaratunga *et al.*, 2002).

A case study design gave the researcher the ability to leverage further on the ability of such a design to support the chosen approach, and piece together the solution to a complex problem. The various cases were purposefully sampled; with the role-players within each case also clearly identified in the strata.

The data were finally collected by using semi-structured interviews, transcribed and subsequently analysed by using CAQDAS for the identification of the emerging themes.

6.7 Summary of the major research findings

This section is structured in such a way as to conclude on each of the research themes described in Section 5.6. This should enlighten the reader to both the research findings and the achievement of the set objectives for the study.

6.7.1 RELATE

In viewing the discussion around the related themes in Chapter 5 (Section 5.6.1), the following research findings should be noted:

- The ability to RELATE to others is important for the performance of role-players. The related actions span across all spheres of the operation and throughout the duration of a complex project;

- The construction industry underrates relationships as a prerequisite for performance;

- The role-players value team cohesion and its influence on performance in these interdependent project environments;

- The cohesion and trust between role-players are affected by both the actions of others and the situational issues specific to each project;

- In a relation-based environment, role-players should focus on gaining each other's trust; and,

- Communication is vitally important, in order to enable multi-disciplinary role-players to RELATE to each other.

6.7.2 LOVE

The specific findings related to the theme LOVE (Section 5.6.2) were identified as the following:

- Project SUCCESS is ill-defined, but still a role-player's driving force and aim;

- The dependence on others to perform and the in-depth interaction on projects adds a great dynamic to teams; however, it is seen as a requirement to achieve SUCCESS;

- Sustainable operating environments are attainable, in which project SUCCESS is aligned with CLIENT satisfaction;

- Role-players require others to "Love" the project, take PRIDE in their inputs and in achieving project SUCCESS;

- Role-players take PRIDE in overcoming TECHNICAL and relational CHALLENGEs. Role-players seem to absolutely "Love" and come alive at the opportunity to pit their abilities against the many TECHNICAL and team CHALLENGEs;

- The OWNERSHIP taken by role-players of project tasks, responsibilities and outcomes is highly influential in performance; and,

- Overstated or self-centred PRIDE or OWNERSHIP could be dangerous to the project or team; and it should be monitored closely.

6.7.3 MANAGING LEADER

The discussions in Section 5.6.3 were geared towards the theme of MANAGING LEADER; and they brought forth the following set of findings:

- PMs are important and they impact the project environment;

- PMs should possess and be competent in both managerial and leadership abilities/skills – as requirements to effectively manage and lead projects towards SUCCESS through the optimisation of the role-player's performance;

- Many of the required positive PM outcomes are enhanced by the use of PM software;

- The examples of commitment and TECHNICAL expertise put forward by the PM are exceptionally motivational for role-players;

- The relational impacts of the PMs implicate not only the relational features between the PM and specific role-players, but also between the role-players themselves;

- PM actions with managerial and leadership attributes influence the project's MOMENTUM. Managerial tasks were seen as pivotal for PPM conservation. Leadership actions were by implication, mentioned as conserving and creating PPM; and,

- Project role-players and teams have similar needs and characteristics as any other "team" in a corporate or business environment. These needs are seemingly generic; and the difference comes in the manner with which these are addressed, introduced and leveraged on by PMs in the construction-project environment.

6.7.4 PROCURE

"PROCURE" as an identified theme reflected on many relevant issues and the main findings from Section 5.6.4 could be summarised as:

- The procurement strategy and execution thereof influence the project environment, as well as the subsequent performance of the team members;

- The adaptation towards long-term relational contracts should assist with broad-based performance improvements;

- Traditional procurement arrangements reinforce adversarial and uncooperative relationships;

- Team cohesion is possible when role-players are engaged over a period of time, in order to gain and maintain the necessary trusting environment engendered by progressive procurement strategies;

- Relational contracting and progressive procurement strategies assist with PPM through effective communication and INFORMATION flow, which becomes possible in these environments;

- Role-players found that progressive procurement strategies CHALLENGE their abilities and motivate them. Role-players were excited about the possible team and performance advantages that could be gained through such strategies;

- SUCCESS on the project is definitely influenced by procurement's impact on relationships, which in turn affects performance; and,

- Procurement strategies and processes have the ability to induce or to enhance the apathetic attitudes of role-players with dire performance prospects.

6.7.5 MOTIVATORS

The findings, which arose from the discussion in Section 5.6.5 surrounding the theme MOTIVATORS, are presented as:

- How role-players RELATE to each other was found to be motivational and issues such as transparency, cohesion, trust, communication etc. are important to induce or enhance motivation;

- The research discovered the following categories: "CHALLENGE", "SUCCESS", "PRIDE" and "OWNERSHIP" together form the theme "Love", indicating intrinsic personal aspects, which relate to "voluntary activity" or being motivated; and,

- Satisfaction of project hygiene factors, which could lead to role-players experiencing no dissatisfaction or being neutral. MOTIVATORS lead to satisfaction; but the need to satisfy the hygienic factors preclude any attempts to motivate. There are many intricate influences, which affect the role-players' current experiences on projects. Many of these influencing factors are "hygiene-related"; or they have their origins from hygienic factors. This re-emphasises the fact that basic "hygiene" requirements must be met before motivation could occur or be initiated. The mentioned "hygiene" factors have an inclination to the managerial aspects, when looking at the requirements of PMs to be

MANAGING LEADERs. Motivational efforts are in vain if the "hygiene" factors are not sufficiently satisfied.

6.7.6 BARRIERS/DRIVERS

"BARRIERS" as a theme devised their own set of discussion topics in Section 5.6.6, from which the following findings were noted:

- Many codes and categories identified had specific and broad implications for the projects' operating environment; and they have both DRIVER and barrier capabilities. Therefore, the specific application and context of each of these codes and categories on each project would either create BARRIERS or DRIVERS;

- The CLIENT's impact and role on TECHNICAL project elements such as "Procurement", "Professional Fees" and "Budgets" were profound and defining of the project environment, specifically related to the existence of BARRIERS;

- PMs also have a broad impact on the role-players and the many managerial associations to BARRIERS directly implicated the PMs on projects; and,

- INFORMATION as a commodity on projects has great potential to create a "hygienic" or barrier-free environment, provided it is distributed well; and it is technically correct.

6.7.7 MOMENTUM

Reflecting on "MOMENTUM", as the seventh and final theme, the following findings were identified from the discussion in Section 5.6.7:

- The project environment is in flux; and the project MOMENTUM is changing constantly;

- When reflecting on the current direction of project MOMENTUM, it was found that:

  - The current positive or negative MOMENTUM plays a role in the possibility of the future MOMENTUM being ongoing and positive or negative;

- Role-players actually gain MOMENTUM in a direction due to the continuous cumulative effects of actions. Previous actions enhance the current movement; and they impact the future actions, furthering the current direction of MOMENTUM;

- Trust could be a gauge of the current MOMENTUM direction on a project, when taking into consideration the current role-players' commitment to the project outcomes and inclinations towards self-preservation; and,

- The intensity with which role-players take OWNERSHIP reflects the current direction of MOMENTUM on a project.

- It is import for role-players to constantly engage in PPM activities and to ensure that the project influences are MOMENTUM creative and conserving;

- Role-players should focus on predicting, overcoming and negating the MOMENTUM decaying/destructive items or circumstances on projects;

- Fragile or broken relations are seen as possibly the greatest DRIVER or initiator of NPM; and such relationships provide as many opportunities as potholes for the conservation and creation of PPM;

- Cohesion between the team members is essential for PPM;

- Communication is imperative when seeking to gain PPM and negate NPM;

- The initial foreseen CHALLENGEs of a project could be to firstly initiate PPM; and secondly, they need to be leveraged, in order to initiate PPM;

- The most likely outcome of a project with PPM, is SUCCESS;

- Role-players taking PRIDE in their work and the recognition thereof, are PPM conserving and creative;

- The decisions and actions taken by the CLIENT impact the direction of the MOMENTUM; and,

- PMs are required to play a role in the conservation of MOMENTUM; and to assist with negating and overcoming MOMENTUM decay or destruction.

6.8 Summary of Research Outcomes

When reflecting on the research outcomes, it seems logical to dwell on the initial questions and problems in this study, which related to the suboptimal performance of role-players in the construction industry. In an attempt to find solutions to the research problem, the following specific outcomes were identified and addressed through the identification of the themes, a refined theoretical framework, and conceptualising Project Husbandry:

- The research indicated clearly what the major performance BARRIERS are for project role-players (Section 5.6.6). The study also indicated that many environmental issues in projects have both DRIVER and barrier capabilities. As a research outcome, the following were noted as possible BARRIERS to performance (Section 5.6.6), each of which is explained and defined in the analysis and interpretation of the codes, categories and themes:

  - Relationships;

  - Cohesion between the role-players;

  - Trust between the role-players;

  - Communication;

  - The challenges on a project;

  - Project Success;

  - Pride;

  - Client actions;

  - The PM's ability to Manage/Lead;

  - Ownership;

  - Information provision and flow;

  - Human-related issues; and,

  - Technical aspects on projects.

- Strategies to motivate the role-players towards optimum performance are provided in both the discussion, with respect to the Project Optimisation

Framework, and the Project Husbandry approach to PROJECT MANAGEMENT (Section 5.7). These include the following:

- Motivational strategies towards optimising performance were shown to be in line with Herzberg's theory, with a similar hygiene-satisfaction prerequisite before MOTIVATORS could be engaged with;

- It was indicated that procurement, as an environmental factor, is possibly the greatest barrier to overcome in the motivation of role-players;

- It was shown that where MOTIVATORS exist, role-players could actually be inclined or able to LOVE their work;

- The MANAGING LEADER approach, in which it was pointed out as the most likely PM approach to gain role-player satisfaction and possible optimal performance;

- The Project Optimisation Framework diagram, figure 50, depicts the research themes and their interaction towards an environment where role-players could optimally perform; and,

- The Project Husbandry concept proposed certain elements such as caring, nurturing, diligence and maturity – to firstly manage the environmental hygiene aspects of a project, which would open up the potential of motivating role-players once they are neutral and prepared for engagement with the project MOTIVATORS.

- Areas of focus and redirection for PMs to manage teams towards SUCCESS are highlighted in the explanation of the Project Husbandry concept (Section 5.7.2). This would require increased care, nurturing, diligence and maturity from the practitioners. The many issues discussed in the theme MANAGING LEADER (Section 5.6.3) also reflected on:

- Clear indications that both management and leadership are required to optimise the project team's performance;

- The areas in which the management aspects of the PM are required were highlighted; and,

- The aspects on which PMs could focus, in order to motivate the role-players were identified.

- Problematic issues and opportunities were highlighted in the process of forming optimum performing teams reflecting mainly on the process and implementation of the CLIENTs' procurement of both contractors and consultants; and the many impacts these have on team formation and subsequent performance.

- Explanations were given why role-players do not work well in team environments with strong relations to the discussions and explanations given for the themes BARRIERS/DRIVERS and MOTIVATORS. All of these themes indicate the issues, which exist in the team environment, and how they impact individual's and the team's performance.

- The effects of each role-player's organisational culture on performance were clarified by the manner in which ownership/responsibility is given to a role-player within his organisation, together with internal support and the operative ways of small firms being influential. The full discussion is noted in Section 5.3.1.2.

- A better understanding of how team diversity influences performance was gained by the expressed realisation of the South African construction industry's shortcomings and the agreement that TECHNICAL competence is a basic requirement for acceptance in such teams (Section 5.3.1.3).

- Certain PROJECT MANAGEMENT practices were highlighted as enabling or hindering role-players' performance. These practices relate strongly to the following (Section 5.3.2):

  - The PM's role in motivation;

  - The manner in which the PM is able to cast or give role-players a vision;

  - The pro-active way in which the PM acts in his capacity;

  - The ways in which the PM is able to keep the team focused and gathering INFORMATION;

- The many ways in which PM software can assist the role-players and PM to perform better; and,

- PM incompetence was noted as a major hindrance in team performance.

6.9 Alignment of findings with the research objectives

6.9.1 Objective 1: To evaluate the team dynamics and environmental factors that influence role-player performance

In terms of evaluating the team dynamics and environmental factor that influence role-player performance, the research clearly indicates areas of concern and opportunity within the sphere of each of the identified themes reflected on in Section 5.7 and 6.7. The evaluation reflected on the following team dynamics and environmental factors:

- The importance of how role-players RELATE on projects and what influences their interactions;

- The influences and personal experiences which assist role-players to LOVE what they do;

- The impact of managerial and leadership actions on team performance as discussed in the theme MANAGING LEADER;

- The great impact PROCUREMENT has on the subsequent team performance;

- The identification of the MOTIVATORS, BARRIERS and DRIVERS in the project team environment; and,

- An appreciation of project MOMENTUM as a construct influencing performance.

6.9.2 Objective 2: To establish the effect of organisational culture on role-player performance

The effects of organisational culture on role-player performance was established mainly through the analysis of the codes identified in Section 5.4.1.2. These expanded on the ways in which each role-player's organisational culture effects the other role-players in the following ways:

- The manner in which role-players are given ownership/responsibility within their organisations,

- The internal support which they have from their organisations; and,

- The effectiveness of small organisations.

6.9.3 Objective 3: To examine the effect of diversity on role-player performance

Diversity of role-players and the effects thereof on performance were examined through the initial questions and analysis in Section 5.4.1.3, which reflected on general industry shortcomings with regard to a diverse group of people involved in the industry and the overall requirement for acceptance as a role-player on project being, technical competence.

From these codes the effects were noted on the categories and themes with special interest to the theme RELATE (Section 5.7.1 and 6.7.1) and some of the categories which combined to create this theme (RELATIONSHIPS, COHESION and TRUST).

6.9.4 Objective 4: To examine the influence of management and leadership, including Project Managers on role-player performance

The influence of the PM on the team was identified and noted. The ways to influence the motivation of the role-players are linked to both the manner of conducting the PM role and also the identification of motivational areas to target as part of the aim of optimising the team's performance. The various environmental issues where noted and would enhance the PM's ability to focus on certain areas to create a potentially optimal performance enabling environment.

The theme MANAGING LEADER (Section 5.7.3) has great relevance to objective 4 with regards to the various influences and possible approach to PM as expressed with respect to the proposed Project Husbandry (Section 5.8.2) approach to managing and leading in these types of project environments.

6.9.5 Objective 5: To establish the issues that drive, motivate, or constrain performance of role-players.

Various project, personal and technical aspects of motivation where identified and discussed. The theme MOTIVATORS notes indicative insightful aspects of motivation on these projects which if addressed would assist with optimising performance. Through the categories pertinent performance BARRIERS and DRIVERS where noted

to guide the team and specifically the PM's towards the identification of environmental risks and opportunities which would have the ability to derail or enhance project team performance.

Future interaction of role-players towards optimising performance is influenced by the ways in which teams are brought together and the ongoing interaction during a project. Clarity on guidance was given for the interactions in relation to the research's identification of the influences of:

- PROCUREMENT as a major influence on the ongoing project interactions and performance;

- The importance of relationships (RELATE) and their impact on role-player interactions throughout the project to enable performance;

- The elements that initiate the teams LOVE of their work; and,

- The role a MANAGING LEADER plays towards guiding the team's interactions.

6.10 Conclusion

From the interpretation, findings and discussions noted in the research, the following may be concluded, when reflecting on the manner of motivating and improving the operating environment to optimise the performance of role-players on a construction project:

Relationships and how role-players RELATE to each other are important aspects in achieving optimal performance. Sadly, it seems that relationships and their effects on performance are underrated by the construction industry. The noted interdependence between the role-players indicates the need for cohesion and trust. Both cohesion and trust are influenced by the role-players' actions and project-specific situational aspects. Role-players would do well to focus on gaining the trust of others, and also communication as vital factors, when creating relationships and environments for optimal performance.

Role-players take PRIDE in conquering, and also LOVE the TECHNICAL and team CHALLENGEs, which projects bring. 'Taking pride in one's work' and 'loving what you do' are also requirements from the role-players or other team members. There is,

however, a danger to the team's overall performance if the PRIDE taken is overstated or self-centred. The ability of role-players to take OWNERSHIP of the projects' tasks, outcomes and responsibilities influences their performance. As part of the aspects that role-players love and the subsequent possibility of SUCCESS, it may be concluded that the term 'project success', is as yet ill-defined; but it is definitely a driving force; and it adds dynamics to these interdependent teams. A sustainable operating environment is reached, in which project SUCCESS is aligned with CLIENT satisfaction.

The appointed PMs on these types of projects are seen as important; and they impact the operating environment. PMs who are able to exert managerial, as well as leadership skills would be most influential in positively impacting the environment, evoking optimal role-player performance and conserving/creating PPM. Positive PM impacts would be greatly enhanced by using PM software; while exemplary performance by the PM is motivational. Relationally, PMs impact both on the direct PM/Role-player relationships, and the role-player interrelations. Construction Project teams have a similar generic need as those teams in business environments, with the major industrial practitioner implications being the ways in which these needs are addressed, introduced and leveraged on.

The manner and process of procurement influences the project environment, the team performance and SUCCESS. Movement towards and the creation of relational contracting or procurement strategies would assist with improved performance on project teams; whilst the current traditional procurement methods keep enforcing the adversarial and uncooperative industrial *status quo*. Teams which operate together over an extended period of time should be able to gain each other's trust and become cohesive. Relational contracting and progressive procurement enhances PPM through effective communication and the INFORMATION flow. New or different types of PROCUREMENT strategies CHALLENGE and effectively motivate the role-players through the possible team and performance advantages they could bring. Apathetic attitudes of role-players towards the project outcomes are influenced by the PROCUREMENT strategies and processes.

To be able to assist with the motivation of role-players, the satisfaction of project hygiene factors should precede motivational attempts. Relational issues, such as transparency, cohesion, trust and communication are important to role-players; and

they act as MOTIVATORS. Many of the aspects that lead role-players to LOVE what they do reflect on these role-players being motivated and engaging in "voluntary activities".

Certain issues on a project could, in relation to their application and outcomes, have BARRIER/DRIVER capabilities. Reflecting on these issues, it may be concluded that:

- The decisions and strategies of the client impact the project environment in a profound and defining manner;

- The impact of the PMs on the role-players reflects the managerial associations to environmental BARRIERS; and,

- The flow and provision of technically correct INFORMATION creates "hygienic" barrier-free environments.

Project MOMENTUM changes constantly during a project life-cycle, with the current MOMENTUM direction influencing the future direction. With the advantages of PPM activities, role-players should engage with negating, predicting and overcoming NPM on projects. NPM or PPM are not the effect of a once-off action, but the cumulative effect of many actions and role-player interactions. RELATIONSHIPS between the role-players have possibly the greatest effect on the realisation of either NPM or PPM. Relational issues play a role in the generation and the direction of MOMENTUM in the following ways:

- For the existence of PPM, team cohesion is essential;

- Commitment to project outcomes and inclinations towards self-preservation reflect on the current levels of trust between the role-players; and they could be a gauge of the current MOMENTUM direction on a project; and,

- COMMUNICATION is imperative to gain PPM and to negate NPM.

This challenging project environment initiates PPM. The ways and intensity of role-players taking PRIDE in their work and the recognition thereof conserve and create PPM. The greatest advantage of the creation and the conservation of PPM is the likelihood of project SUCCESS. CLIENT decisions and actions impact the direction of MOMENTUM, with PMs being required to conserve MOMENTUM and to oppose any decay and destruction leading to NPM. Finally, it may be concluded that the intensity

with which role-players take OWNERSHIP reflects on the current direction of the project's MOMENTUM.

6.10.1 Performance Optimisation Framework

The research themes noted above, function and co-exist in the creation of optimal performance environments, within which the construction project role-players operate. Each theme was found to be influential in the environment and impacted performance in the following ways:

- BARRIERS/DRIVERS exist as hygiene factors in line with Herzberg's theory;

- Operating in an environment where hygiene factors are unresolved would lead to sub-optimal performance levels;

- PROCUREMENT processes and their application seem to be the greatest existing barrier to optimal performance;

- Role-players would be more satisfied and likely to perform optimally in an environment, within which both project and personal MOTIVATORS exist. In these environments, the role-players could even be inclined to LOVE what they do;

- RELATIONSHIPS are found throughout all aspects of the project environment. How the role-players RELATE to each other is vitally important to overall performance and the possibility of creating an optimal performing environment;

- MANAGING LEADERS would be able to firstly manage the environment to adhere to the resolution of hygiene factors (BARRIERS/DRIVERS); and secondly to move towards leading teams to engage with their LOVE themed project attributes – thereby, assisting the role-players to move from dissatisfaction or neutrality towards satisfaction and the possibility of optimal performance; and,

- The actions taken and the attitudes projected by the role-players impact the project's MOMENTUM. The cumulative effect of these actions/attitudes impact on the MOMENTUM as positive or negative, with subsequent relations to role-players satisfaction and the overall project SUCCESS.

6.10.2 Project Husbandry

Project Husbandry brings to the fore issues raised during the research and emanating from the theme of MANAGING LEADER. This approach reflects a caring, nurturing, diligent and mature approach towards the PM, and of role-players towards optimal performance. The findings highlight the following issues:

- PMs should be fully committed and show effort in their tasks or responsibilities on projects;

- PMs are required to be technically skilled and capable of successfully managing a hygienic environment; whilst inducing the role-players to engage with their motivational needs towards a more meaningful 'existence';

- Where the environment reflects a hygienic one, the role-players almost automatically start to engage with project MOTIVATORS;

- PMs would have to cultivate relational environments in which:

  - Team cohesion can be monitored,

  - Members will be inclined to trust and to gain trust over time; and,

  - Communication would be open and expressed in conducive ways, thereby creating a positive interdependent environment, in which INFORMATION can flow freely.

- Relational PROCUREMENT strategies are profound in the effects they have on the creation of an ideal environment in which the role-players can perform properly;

- Role-players will be empowered by PMs to LOVE what they do through the enablement and encouragement to take OWNERSHIP and PRIDE in their project responsibilities;

- PMs could use project CHALLENGEs as motivational tools to encourage role-players to engage with the project and drive towards the SUCCESS to which the role-players aspire;

- PMs must engage with the initiation, creation and conservation of MOMENTUM, as the key to the approach to ensure overall project SUCCESS.

It was proposed that PMs appreciate the building up of PPM, and alternatively NPM, as the cumulative effect of many small actions on the project; and,

- The Project Husbandry approach should give rise to PM's understanding that project BARRIERS are both HUMAN and TECHNICAL. These BARRIERS should be tactfully but rigorously dealt with, in order to create a hygienic environment; while the actions taken by the PM could potentially be motivational to the team.

It was finally found that Project Husbandry would entail the exemplary management of a hygienic environment to cultivate the ideal platform for all the project role-players to be introduced; and then to engage organically with the motivational aspects of a project. This introduction and engagement, with the MOTIVATORS leads to the optimisation of both the individual role-players and also the team's performance.

6.11 The Research's contribution to knowledge

Taking into account the broad literature discussion, the Theoretical and Conceptual frameworks, the final analysed data and the research findings, the research has contributed to the construction project management body of knowledge in the following ways:

- The research has added a clear understanding of the major performance BARRIERS for project role-players (Section 5.7.6) and how many of these environmental issues have both performance DRIVER and BARRIER capabilities;

- The research devised strategies, to motivate role-players towards optimum performance supported by the presentation of a Project Optimisation Framework (Section 5.8.1) and the Project Husbandry approach (Section 5.8.2) to project management;

- The research Identified the specific focus areas and the ways for PMs to manage teams to achieve optimal performance through the Project Husbandry approach (Section 5.8.2), and the discussion items reflected on in the theme of MANAGING LEADER (Section 5.7.3); and

- The research highlighted Project-Management practices, which are enabling or hindering role-player performance, as mentioned in Section 5.4.2.

- The research identified the problem areas and opportunities of forming optimum-performing teams, when reflecting mainly on the process and implementation of the CLIENTs' PROCUREMENT strategy;

- The research explained why role-players do not work well in team environments, with strong links to the themes BARRIERS/DRIVERS and MOTIVATORS;

- The research clarified the effects of each role-player's organisational culture on performance with the emphasis on ownership/responsibility given to a role-player within his organisation, internal support and the operative ways of small firms (Section 5.3.1.2.);

- The research established an understanding of team member's diversity in influencing performance by the realisation of industry shortcomings and the agreement that TECHNICAL competence is the basic requirement for acceptance (Section 5.3.1.3); and,

- Finally, the research expanded on the understanding of the application, and relevance which Herzberg's theory has on the motivation and performance of construction project teams. The understanding clarified in Section 6.10.1, with the addition of specific hygiene and motivators noted for the construction project team environment.

6.12 Critical evaluation of the Research Approach, Techniques and Limitations

A general comment on using a qualitative approach with this research would be that it was satisfying. The researcher was able to intensely and thoroughly research aspects of the topical phenomenon. Through this research, the researcher became involved with the topic in ways of understanding and appreciation of elements in research, which had not been experienced in the past. In agreement with Flyvberg (2006), this approach truly gives the researcher the ability to pay attention to the "blind alleys" and issues not previously foreseen. This specific freedom granted by qualitative research could also be a burden in relation to the question, of: "Where to stop"? At stages of the analysis, there seemed to be a never-ending world of discovery in the transcribed text. The challenge lies therein to converge the data to logically understood sections,

which have reputable representative data to substantiate the creation of the codes, categories and themes, which all direct towards acceptable overall research findings.

The Case-study design gave structure to the research to ensure that the population is controlled and the sample easily accessed. Interestingly, the context of each case differed, but the feedback on those issues, which influence the performance, did not differ substantially. This could be seen to reflect on the state of the industry and possibly not a negative comment related to the case study design. The use of a case study also gave the researcher and the respondents a direct and comprehensible area of discussion, which guided the respondent's feedback to a current situation and context. This focus ensured that the feedback from the respondents would be clear and concise, and not overly clouded with their own philosophical views on issues surrounding each question posed to them.

The population and sample for the study provided sufficient data to identify the related issues of the phenomenon of sub-optimal performance; and as stated before the feedback could well be of great value to similar population groupings in the industry. The other defining aspect of a Stratified Sample also gave the researcher great insight into each of the three role-player groups, which took part in the research and how these co-exist in the industry with direct relation to their performance.

The data-collection method or tool used in the research mainly for interviews. Firstly, the experience of spending time and engaging with highly qualified and professional industry operatives was an immensely fulfilling exercise for the researcher; but even more so sifting through the rich transcribed data, which came from these interviews. The interviewees were mostly perceived as intrigued by the research topic and its outcomes, with a growing understanding and frustration with poor or sub-optimal performance in the industry. The interviews allowed a lot of space to explore and discuss relevant issues, and as a common qualitative data-collection method or tool, it was satisfactory in its data-collection ability and the analysable outcomes.

The use of a QACDAS gave the researcher many advantages, but possibly the most valued advantage was the ability to sort out and manoeuvre through the massive amount of transcribed data – towards the logical identification and allocation of codes. The ability to view the text and codes in different ways and forms assisted with the subsequent identification of categories; and it gave coherence to the emergent

themes. The value of outcomes from the use of QACDAS must be noted and the researcher acknowledges the assistance given and the impact on the final themes, frameworks and conclusions of the research.

It would be foolish to think that this or any other research undertaking would answer all the relevant topic-related industrial questions; since the limitations of the research are stated as follows:

- The use of a Case-study design and the limited responses linked to these cases have some obvious limitations related to research, especially if seen quantitatively;

- Taking a cross-sectional view on a project limits the respondent's views on the current situation and the recent past.

- A longitudinal interaction with the role-players could possibly give a more holistic view on many of the issues addressed in the study; and it might add valuable detail to even further increase the depth of investigation; and,

- As is common in most research, some feedback from the respondents seemed to be restrained and trying to be politically correct, and aiming to provide the "correct" answer to the questions posed.

6.13 Recommendations

6.13.1 Recommendations for Clients

As mentioned before, the client plays a substantial role in construction projects. Therefore the following would be recommended to ensure that the client assists with both a conducive environment and role-player motivation for optimal performance:

- CLIENTs should ensure that procurement and the strategies followed to involve the other role-players, move toward relational or more progressive strategies to encourage trusting and cohesive environments, in which the role-players are enabled to experience MOTIVATORS, enjoy PPM and subsequently improve their performance;

- CLIENTs should be able to formulate what their satisfaction entails and indicate clearly to contractors and consultants, how this satisfaction could lead to long-term sustainable operations with the CLIENT;

- CLIENT organisations would be wise to appoint CLIENT representatives, who would engage with the other role-players for the MOTIVATORS that exist on a project, to ensure a consistent move towards optimal performance; and,

- CLIENTs can leverage on the excitement and CHALLENGEs that certain projects bring, in order to ensure that the role-players are induced to commit to overcoming these CHALLENGEs. Towards achieving this advantage, CLIENTs should ensure that initial meetings and requests include all the foreseen issues and CHALLENGEs to counterintuitively engage the other role-players and not try to lure them into a "safe", "dull" or "normal" situation.

6.13.2 Recommendations for Consultants

Consultants, as designers and cost consultants, play major roles in projects; and they influence the functioning of the teams in many ways. The following could be noted as recommendations for consultants:

- It would be a serious consideration to assist the overall project environment and performance to actively engage and build proper professional relationships with the other role-players. In this vein, social interaction does assist, but TECHNICAL performance is still the foundation on which the parties RELATE; To be open and conscious of areas within the project sphere which the consultants LOVE, and to participate in these areas to assist with their own satisfaction and performance;

- The consultants should invite others to get involved with aspects of the project that they LOVE to do and to engage with, and to assist with the overall project's performance. These invitations could be during social interaction and conversational actions; but they could also be possibly more structured as sessions during which these LOVE aspects are discussed and highlighted; and,

- In instances where consultants are involved on projects from the project inception, to reflect on the procurement strategies and the processes, which CLIENTs follow; and to positively influence these decisions to ensure that continuously, the South African construction industry is moving towards more progressive and relational contracting types.

6.13.3 Recommendations for PMs

As predicted in the literature, the PMs impact the teams and play a vital role in the overall performance of these project teams. The following suggestions are recommended for those who function as PMs in their construction projects:

- PMs should focus and direct their energy towards the deployment of both Managerial and Leadership abilities/skills. This would ensure that the role-players are able to perform in hygienic barrier-free environments; and it would also include the MOTIVATORS in projects;

- The PMs who aspire towards teams performing optimally should themselves be exemplary in their performance, efforts and TECHNICAL skills; and,

- They should also be mature and emotionally intelligent through either intentional competence development or life experience, as to sense and manage the many constructs which impact on projects. Examples of these constructs under discussion could be project MOMENTUM and team relationships, which both have great risk- and performance-potential.

6.13.4 Recommendations for Higher Education Institutions

As the places where practitioners gain their academic qualifications and assist with the formulation of curricula and the creation of operatives, which would lead the industry into new eras of performance and functioning, the following are recommended:

- That Higher education institutions should evolve, accordingly, in order to facilitate major social interaction during the course of learning. This interaction could unchain a group of operatives and future role-players, who would be conscious of the importance of the many "soft" skills required to optimise performance and to complete projects successfully; and,

- The South African Higher Education facilities must ensure consistent TECHNICAL excellence, as an outcome of all related academic courses. This aspect cannot be jeopardised for any cause, due to the absolute and utter requirement of all involved that TECHNICAL competence is essential for project performance – and all the convergent themes in this research.

6.13.5 Recommendations for Researchers/Academics

The ideas and outcomes of the research challenge some of the research focus in the construction industry and they align rather with research that recommends similar sentiments to:

- Researchers and Academics to engage with the social aspects and systems, which exist in and around the construction projects. The engagement is to understand some of the underlying issues, which still hinder the relationships, motivation and leadership on projects. All of the underlying issues need to be investigated with the sole aim of improving and optimising performance and to devise new methods, styles and systems of operation – in line with the challenges faced in the 21st Century.

6.14 Future Research

The following areas of interest for future research endeavours were identified in the attempt to align with the ongoing drive towards optimising construction project role-players' performance:

- The value and identification of systematic and formal performance management on projects;

- The investigation and identification of the different personality types of role-players, and how these intermingle to create performing teams;

- The influence of academic education on the role-players and their subsequent performance on construction-project teams;

- The possible adaptation of the same approach as Egan (1998), which probed other industries for answers to the questions and challenges experienced in the construction industry, for example, Identifying the feasible motivation strategies, which have been used with success in other industries, for use in the construction-project environment. The industries chosen to be applicable could be identified by using a set of criteria, which would make their situation and context applicable to the construction industry. For example: The motor industry, due to the fact that it also has a typical design and production function;

- Quantitative research on the themed sections in the proposed Performance Optimisation framework to embolden and refine the interaction and influence of RELATE, Love, Managing Leader, Procure, MOTIVATORS, BARRIERS and MOMENTUM as constructs in the construction-project environment; and,

- To investigate further the impact, influence and effects of a Project-Husbandry approach to the PROJECT MANAGEMENT of construction undertakings with the sole objective being to optimise the performance of those involved.

6.15 Chapter summary

In this chapter, the researcher endeavoured to summarise and provide clear recommendations, which have developed from the study as a whole. The next section will note the various references used in the study; and thereafter, all research-relevant documentation will be added as appendices to the main study.

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ANNEXURE 1 – INTERVIEW GUIDE

Introduction and information about the study:

Important information to share at the start of the interview:

- What is the study all about?

- Why is the researcher doing this?

- Who are the role-players?

- Definition of optimal performance.

- Definition of environment – The project team environment.

- Informed consent – Consent form to be discussed.

- Confidentiality of participant explained/assured.

- Format of interview explained.

- Duration of the interview noted: +- 1 hour.

- Note taking and recorder usage during the interview explained.

- Any questions from the participant?

- Brief description given of the researcher and of his background.

Background of the participant clarified:

Can you give me a brief description of your involvement in the industry and what you are doing now?

Teams – Dynamics, Organisational Culture and Diversity:

Question 1:

What are the things in this project which typically keep you from performing well?

What are other role-players doing at the moment that influence your performance?

Which role-player carries the responsibility, or has the greatest influence in creating a barrier-free project environment?

Do you currently feel part of the team? And if so, just why?

What do you enjoy about working in this team? Would you say that these issues make you perform better?

What do you really not enjoy about working in this project team? Are these team-related issues that hinder your performance?

How would you describe the relation between your performance and the team's performance?

How does the way in which this team was brought together influence your performance?

Question 2:

What is the influence of your employer's organization on your performance in this project?

How would you describe some of the other role-players' organizational culture in this project?

What is specifically good/bad about their organisational culture?

How does it influence your performance?

How was the mentioned bad/good influence on your performance, managed?

Question 3:

How diverse is the team in the project?

In your view, is this team embracing or open towards diversity-related issues of the team members?

How do you think diversity is impacting on the team's performance?

Leadership/Management – Influence and Practice

Question 4:

How does the project leaders/manager influence your performance in the project?

What has the project leader/manager done to assist your performance?

What has been you experience with leadership and motivation in this team?

What tools or strategies have you seen the leader/manager use to motivate role-players towards better performance?

Can you summarise in one sentence, what a leader should be doing to make teams perform better in this difficult environment?

Performance – Drivers, Motivators and Barriers

Question 5:

When looking at this project, could you tell me anything about the circumstances, in which you were really motivated to perform?

Who or what ignited/started this motivation?

Who or what drove or sustained this motivation?

Interview close out:

The possibility exists that there might be minor interaction with the participant in the future for:

- Clarification of interview feedback, and

- Additional questions.

Final comment: Explanation of what is going to happen in the study from this date.

ANNEXURE 2 – INTERVIEW REQUEST LETTER

Dear Sir/Madam,   18 August 2012

RE: Optimising Construction Project Role-Players' Performance

As part of meeting the requirements for the degree of Doctor of Philosophy in Construction Management in the Faculty of Engineering, the Built Environment and Information Technology at the Nelson Mandela University, the research is undertaken. The data collection process for the research is currently under way by – means of interviews with experts in the field of construction.

The research intends to evolve around the motivation of project teams with an emphasis on optimising performance. The optimal performing teams aimed to adjust to the requirements of 21st century clients. The research aimed to enhance project role players' performance and directly add valuable theory related to construction project team's performance and management.

A request is made to kindly participate in the interviewing process. By taking part in the interviews, you would be making a major contribution to the improvement of the South African construction industry; and this would enhance the Project Management professions' body of knowledge.

The interview will take no longer than 45-60 minutes to complete; and your anonymity is assured. If acceptable, we will be contacting you soon to arrange an interview and to agree on a date and time which would suit you.

Kind regards,

André Hefer   Dr Franco Geminiani

Researcher   Supervisor