

Project Implementation Profile Tool Applied to Upgrading Informal Settlements Programme Projects

By

Azher Shaboodien

Student No: SHBAZH001

Supervisor: Ian Jay

University of Cape Town

A Minor Dissertation

presented to the

Faculty of Engineering & Built Environment

in partial fulfilment of the requirements for the degree

MPhil : Urban Design and Management



JANUARY 2020

The copyright of this thesis vests in the author. No quotation from it or information derived from it is to be published without full acknowledgement of the source. The thesis is to be used for private study or non-commercial research purposes only.

Published by the University of Cape Town (UCT) in terms of the non-exclusive license granted to UCT by the author.

Declaration

1. I know that plagiarism is wrong. Plagiarism is to use another's work and pretend that is one's own.
2. I have used the Harvard convention for citation and referencing. Each contribution to and quotation in this report from the work(s) of other people has been attributed and has been cited and referenced.
3. This report is my own work.
4. I have not allowed and will not allow anyone to copy my work with the intention of passing it off as his or her own work.
5. I acknowledge that copying someone else's assignment or essay, or part of it is wrong and declared that this is my own work.

Signed at Cape Town on the 27th day of January 2020

Submitted by: Azher Shaboodien

Signature: _____

Signed by candidate

Abstract

Purpose: This research reviews the Project Implementation Profile (PIP) and explores its relevance to Upgrading Informal Settlements Programme (UISP) type projects in Cape Town. The research aims to:

- Identify the most common PIP Critical Success Factors (CSF) for UISP projects,
- Compare the common PIP Critical Success Factors (CSF) for UISP projects to the Construction Sector CSF
- Evaluate if the PIP tool is applicable to UISP projects.
- Determine if there any other critical success factors that need to be added to the CSF list that is critical to the UISP Project success

Approach: A literature review was conducted to assist in identifying the common CSF in the Constructions Sector. A survey questionnaire was sent out to relevant UISP Project Managers. The survey questionnaire was based on the PIP questionnaire with additional questions regarding to the effectiveness of the PIP tool on UISP projects. The intent of the survey questionnaire is firstly to establish the common CSF for UISP projects and then evaluate the PIP effectiveness on UISP projects.

Findings: Based on the research results, it was found that the high scoring CSF for UISP projects were Project Mission, Client Consultation, Technical Tasks, Monitoring and Feedback, Personal. When the high scoring CSF was compared to the Literature Based Construction Sector CSF, the following common CSF was established: Monitoring and Feedback, Client Consultation and Technical Tasks.

Practical Implications: This research will give an indication of the high and low scoring CSF relevant to UISP projects, which project managers and Managers in the Human Settlements industry can use to evaluate their UISP or Breaking New Ground (BNG) housing projects. Furthermore, the PIP tool may be utilised more frequently as a project quality success assurance tool in the organisation. The PIP tool has been tested and verified in a number of different industries in previous studies but never in its application to UISP or BNG projects.

Keywords: Cape Town, Critical Success Factors (CSF), Construction Projects, Housing, Project Implementation Profile (PIP), Upgrading Informal Settlement Programme (UISP).

Acknowledgements

Firstly, I would like to thank the All Mighty for giving me the strength to persevere and complete this task. This task definitely formed part of my trials and tribulations in life.

I would also like to thank Ian Jay for his assistance and advice.

And lastly I would like to thank my family for their support, especially my wife who was there for me and tried to understand my line of thought/thoughts. Thank you Gadija for your support.

Table of Contents

Declaration	ii
Abstract	iii
Acknowledgements	iv
Table of Contents	v
Table of Figures.....	viii
List of Tables	ix
Nomenclature	x
1 INTRODUCTION.....	11
1.1 Background to the Research.....	11
1.1.1 Background to Upgrading Informal Settlements Programme (UISP) Projects	13
1.1.2 Background to the Project Implementation Profile (PIP) Tool	14
1.2 Research Problem Statement	15
1.3 Research Proposition.....	15
1.4 Research Question	15
1.5 Research Aims.....	16
1.6 Research Methods	16
1.7 Limitations of the Research.....	17
1.8 Structure of the Research Report	17
2 LITERATURE REVIEW	18
2.1 Introduction.....	18
2.2 Project Success & Project Success Factors	18
2.2.1 Project Success	18
2.2.2 Project Success Factors and Project Success Criteria	20
2.2.3 Critical Success Factors over the Project Life Cycle	21
2.2.4 Critical Success Factors for Construction Projects.....	23
2.3 Project Implementation Profile Tool	25
2.3.1 Project Implementation Profile Background	25
2.3.2 Project Implementation Profile Critical Success Factors	26

2.3.3	Structure of PIP	29
2.3.4	Limitations and Criticisms of PIP	30
2.4	Upgrading Informal Settlements Programme (UISP).....	34
2.4.1	UISP Background	34
2.4.2	UISP Current Status and Delivery	35
2.4.3	Critical Success Factors for UISP and Housing Projects	35
2.5	Summary of the Literature Review.....	37
3	RESEARCH METHODOLOGY	39
3.1	Research Strategy	39
3.2	Research Requirement	40
3.3	Research Design.....	41
3.3.1	Research Instrument	42
3.3.2	Sample Framework.....	44
3.3.3	Data Collection	45
3.3.4	Data Analysis	46
3.4	Limitations	46
3.5	Research Ethics	47
4	RESEARCH FINDINGS & DATA ANALYSIS	48
4.1	Participant Demographics	48
4.2	Primary Research Findings.....	50
4.3	Additional Research Findings	54
5	DISCUSSION OF THE RESEARCH FINDINGS	55
5.1	Discussion of Primary Research Findings	55
5.1.1	PIP Tool for UISP Project Research Results compared to the Belout and Gauvreau (2004) study.....	56
5.1.2	PIP Tool for UISP Project Research Results compared to Literature Based Common Construction Sector CSF (from Chapter 2: Literature Review)	57

5.1.3	Project Managers Top three CSF that they consider important/critical for their UISP project’s success.	58
5.2	Discussion of Additional Research Findings.....	60
6	CONCLUSIONS AND RECOMMENDATIONS	61
6.1	Research Background and Approach	61
6.2	Research Findings	62
6.3	Limitations of the Research.....	64
6.4	Recommendation	64
6.5	Suggestions for Further Research	65
7	REFERENCES.....	66
8	APPENDICES.....	72
8.1	Appendix A - Ethics Clearance	72
8.2	Appendix B – Survey.....	73
8.3	Appendix C - Survey Questionnaire.....	74
8.4	Appendix D – Descriptions of Critical Success Factors and Question Grading	77
8.5	Appendix E - Survey Response Data: Primary Research Findings.....	78
8.5.1	Primary Research: Master Data File	78
8.5.2	Primary Research Findings: Project Profile Score Diagrams for all UISP Projects	79
8.6	Appendix F - Survey Response Data: Additional Research Findings	86

Table of Figures

Figure 2.1: Relationship between project success factors and criteria (Lim and Mohamed, 1999).....	21
Figure 2.2: CSF at Each Stage in the Project Lifecycle (in order of importance).....	22
Figure 3.1: Example of a Project Profile Score Diagram.....	44
Figure 8.1: P1 Project Profile Score Diagram.....	79
Figure 8.2: P2 Project Profile Score Diagram.....	79
Figure 8.3: P3 Project Profile Score Diagram.....	80
Figure 8.4: P4 Project Profile Score Diagram.....	80
Figure 8.5: P5 Project Profile Score Diagram.....	81
Figure 8.6: P6 Project Profile Score Diagram.....	81
Figure 8.7: P7 Project Profile Score Diagram.....	82
Figure 8.8: P8 Project Profile Score Diagram.....	82
Figure 8.9: P9 Project Profile Score Diagram.....	83
Figure 8.10: P10 Project Profile Score Diagram	83
Figure 8.11: P11 Project Profile Score Diagram	84
Figure 8.12: P12 Project Profile Score Diagram	84
Figure 8.13: P13 Project Profile Score Diagram	85

List of Tables

Table 1.1: City of Cape Town UISP Project list (City of Cape Town, 2016).....	14
Table 2.1: Fortune and White CSF (2006) compared to PIP CSF	24
Table 2.2: A Comparison of the CSF from White and Fortunes (2006) study compared to the PIP CSF list, Belout and Gauvreau (2004) & Hyvari (2006).	24
Table 2.3: PIP CSF ranking from various studies (Hyvari, 2006).....	32
Table 2.4: Common Ranked CSF for PIP (1987), Hyvari (2006) and Finch (2003).....	33
Table 2.5: HDA's UISP CSF aligned to PIP CSF	36
Table 2.6: Summary table indicating the CSF based on various scenarios	38
Table 3.1: Contrasts between Qualitative and Quantitative Research (Bryman & Bell 2011: 410).	40
Table 3.2: Advantages and Disadvantages of Using email to conduct survey research (Bryman & Bell, 2003; Thach, 1995; Wright, 2006)	46
Table 4.1: Summary Table indicating Project Mangers Demographics	49
Table 4.2: Summary of the Participatory Projects Construction Value, Project Size & Complexity and Project Life Cycle Status	49
Table 4.3: Summary of the Research CSF.....	50
Table 4.4: Summary of CSF that Participants (PMs) found most important for their UISP Projects.....	53
Table 4.5: Summary of Additional Research Findings	54
Table 5.1: CSF Scored and Classified as Good, Fair or Critical	55
Table 5.2: Comparison between Belout and Gauvreau (2004) tops five CSF for the construction sector and this research studies, top ranked CSF (ranked in priority)	57
Table 5.3: Comparison between General CSF for Construction Projects and this research studies, top ranked CSF (ranked in priority)	58
Table 5.4: Common CSF when comparing all three studies	59
Table 8.1: Primary data from survey	78

Nomenclature

List of Abbreviations

ANOVA	Analysis of Variance
BNG	Breaking New Ground
CSF	Critical Success Factor
CPM	Critical Path Methodology
CR	Critical Ratios
EPCM	Engineering, Procurement, and Construction Management
EVA	Earned Value Analysis
EVM	Earned Value Management
HDA	Housing Development Agency
HRM	Human Resource Management
HS	Human Settlements
HSM	Human Settlements Management
IPO	Inputs – processes - outputs
IS	Informal Settlements
MHBP	Mass Housing Building Projects
PERT	Program Evaluation Review Technique
PIP	Project Implementation Profile
PM	Project Manager
PMBok®	A Guide to the Project Management Book of Knowledge
PTM	Project Team Member
R&D	Research and Development
UISP	Upgrading Informal Settlements Programme

1 INTRODUCTION

Abraham Maslow is known for his theory and contributions to understanding the needs of humans which he describes as a hierarchy of five basic needs. The needs are physical, safety, love, esteem and self-actualisation. Physical is the most important and further described as a person ideally having access to air, water, shelter, sleep, clothing and reproduction. Based on Maslow theory, it is the most important need on the hierarchy and once this level of needs is taken care of, an individual is able to move onto the next level in the hierarchy (Selva, 2017).

In 1994 when apartheid ended, and a Democratic Government was elected, there was anticipation that the housing situation would be corrected, as stated/promised in the 1996 South African Constitution, the Housing Act of 1997, and the 1994 White Paper on Housing. One way that the Government could eradicate/ reduce informal settlements and afford people homes was by a process of introducing various housing programmes, one being the Upgrading Informal Settlements Programme (Tissington, 2010).

The research described in this dissertation aims to look at what can be done to address the Upgrading Informal Settlements Programme project quality assurance at a project/ programme management level in Cape Town.

This section will provide a brief background as to what the Upgrading Informal Settlements Programme (UISP) entails and a background to the Project Implementation Profile (PIP) Tool (Background to Research). This section will also provide the research problem, research question, research aims and objectives, research proposition, research methodology, research limitations and the structure of the research report. This research is based on UISP projects in the Cape Town Metropolitan area.

1.1 Background to the Research

In South Africa access to adequate housing is one of the most important basic human rights. As stated in the South African Constitution, Section 26 (1) "*Everyone has the right to have access to adequate housing*" and (2) "*The state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of this right*" (Republic of South Africa, 1996).

According to Statistics South Africa's (Stats SA) based on the General Household Survey for 2018, 81,1% of South African households lived in formal dwellings, followed by 13,6% households living in informal dwellings, and 5,3% in traditional dwellings (Stats SA,2018). It is therefore the South African Government's duty to work progressively towards ensuring all South Africans can access secure tenure, housing, basic services, materials, facilities and infrastructure. Government will have to apply measures of a legislative, administrative, financial, educational and social nature to fulfil its housing obligations (Department of Human Settlements, 2009).

As noted by Brink (2014), however, it is evident that the Government cannot deliver housing on the scale required at a sustainable rate or within the means of low-income and poor households, and there is growing evidence that it will be impossible for South Africa's current Human Settlements policy and practice to fully address the United Nations (UN) Millennium Development Goals (MDGs) target of slum-free cities, and the South African government's own target of eradicating informal settlements (Brink, 2014).

Access to adequate housing remains a challenge in Cape Town, notwithstanding continuous efforts since 1994, to deliver affordable housing to the poor, through various national housing subsidy schemes. In 2004, the South African Government has approved the Comprehensive Housing Plan for the development of Integrated Sustainable Human Settlements (Ziblim, 2013). The Integrated Sustainable Human Settlements incorporates the Breaking New Ground (BNG) housing concept. The main aim of BNG housing is to eradicate informal settlements.

BNG housing incorporates principles such as:

- Integrating subsidised rental and bonded housing
- Providing municipal engineering services at the higher level and being applied consistently
- Providing ancillary facilities such as schools, clinics, commercial opportunities and play area such as Public Open Spaces
- Combining different housing densities and typologies; (South African Government, 2012)

In 2014, the BNG housing backlog within the City of Cape Town municipally area was estimated at 375 000 and is expected to grow to 833 000 houses by 2031, while the City of Cape Town municipality is producing approximately only 6100 BNG houses per year (Cape Times, 2014). This indicates a shortfall regarding the delivery of BNG houses. Because of the housing backlog, the Upgrading Informal Settlements Programme (UISP) was created by the National Government. The UISP is a short term solution to resolve the housing backlog issue as it addresses beneficial constitutional rights. Currently there is also a backlog on the UISP project.

Based on the UISP backlog in the Cape Town Metropolitan area, this research will therefore seek to understand what are the critical success factors linked to UISP projects and how it can be explored to assist in stakeholder acceptance/ satisfaction and possibly identify project blockages.

1.1.1 Background to Upgrading Informal Settlements Programme (UISP) Projects

Informal Settlements are common to most developing countries such as India, Mauritius and Mexico which undergo a process of rapid urbanisation and have limited resources to address the housing needs of all its citizens and in particular the poor, who relocate to cities in search of a better life and future for their families (Department of Human Settlements, 2009).

The Upgrading Informal Settlements Programme (UISP) is one of the most important programmes of the South African government which seeks to upgrade the living conditions of millions of poor people by providing secure tenure and access to basic services and housing. Experience and research has shown that housing with access to basic services, secure tenure and a house provides a springboard to households to improve their social and economic circumstances (Department of Human Settlements, 2009).

The UISP projects therefore aim to bring about social cohesion, stability and security in integrated developments and to create jobs and economic wellbeing for communities which did not previously have access to land and business services, formal housing and social and economic amenities. The UISP projects are based on a bottom-up approach, which leads to better public participation, community involvement, a sense of being in the area and ownership for the community. A bottom-up approach requires that the community is involved from the start of the project (planning phase of the project life cycle) to the end (closing out phase of the project life cycle). The community is given the opportunity to share their views and inputs into the project.

Currently the City of Cape Town is managing fifteen UISP projects in progress. These projects are in various project phases (initiation phase, planning phase, execution phase and close out phase). However only 13 of the 15 projects will be screened for this study. The 13 projects are identified in Table 1.1.

UISP PROJECT	PROJECT PHASE	ESTIMATED CONSTRUCTION COST
Sweet Homes UISP	Construction Phase by March 2017	R 68 million
8ste Laan UISP	Construction Phase by March 2017	R 60 million
Kalkfontein UISP	Construction Phase by May 2017	R 60 million
Phola Park UISP	Planning Phase	R 28 million
Enkanini UISP	Planning Phase	R 100 million
Dooranbach UIS	Planning Phase	R 60 million
Tambo Square UISP	Construction Phase by March 2017	R 9 million
Lotus Park UISP	Planning Phase	R 20 million
The Heights UISP	Planning Phase	R 20 million
Monwabisi Park UISP	Planning Phase	R 70 million
Ravensmead UISP	Planning Phase	R 9.5 million
Monwood UISP	Planning Phase	R 38 million
Vygieskraal UISP	Planning Phase	R 35 million
Freedom Park UISP	Planning Phase	R 28 million
Deep Freeze UISP	Construction Phase	R 38 million

Table 1.1: City of Cape Town UISP Project list (City of Cape Town, 2016)

1.1.2 Background to the Project Implementation Profile (PIP) Tool

The Project Implementation Profile (PIP) was developed in 1986. It consists of a set of ten critical success factors that were empirically derived across a set of projects (Pinto 1986; Slevin & Pinto 1987). The PIP tool is a self-assessment methodology that asks questions around ten critical areas (empirically derived in Pinto's 1986 study) and deemed important in determining project success.

The ten critical success factors around which a series of questions are based, are listed below:

- Project mission - Initial clarity of goals and general direction
- Top management support - Willingness of top management to provide the necessary resources and authority/power for project success.
- Project schedule/plans - A detailed specification of the individual action steps required for project implementation.
- Client consultation - Communication, consultation and active listening to all impacted parties
- Personnel - Recruitment, selection and training of the necessary personnel for the project team.

- Technical tasks - Availability of the required technology and expertise to accomplish the specific technical action steps
- Client acceptance - The act of 'selling' the final project to its ultimate intended users
- Monitoring and feedback - Timely provision of an appropriate network and necessary data to all key actors in the project implementation.
- Communication - The provision of an appropriate network and necessary data to all key actors in project implementation.
- Trouble-shooting - Ability to handle unexpected crises and deviations from plan,

(Pinto 1990).

Each of the ten factors listed has a set of five questions to be assessed on a 7- point Likert scale. The scale ranges from 1 to 7, where 1 represents "strongly disagree", 4 represents "neutral" and 7 represents "strongly agree". The most significant contribution of the PIP tool is that it empirically derived ten success factors that are applicable in a number of sectors. In addition, the development of the PIP tool makes it easy for one to turn it into a questionnaire and elicit responses from the project stakeholders. Since its development the PIP tool has been widely adapted and adopted (Andersen *et al.*, 2006; Chan *et al.*, 2008; Tan *et al.*, 2009; Turner and Muller, 2005) in retrospectively assessing completed projects. A minor modification has been made to the questionnaire (refer to annexure C) the project manager can advise what are the three most important success factors to his/her project.

1.2 Research Problem Statement

The UISP projects lack suitable project quality success assurance tools to ensure project success.

1.3 Research Proposition

The PIP tool can be utilised as a quality assurance tool to improve the possibility of success for UISP projects.

1.4 Research Question

To address the research problem statement above, the main research question for this dissertation is:

- Based on the ten critical success factors from PIP, which ones are the most important factors (high scoring factors) for ensuring success of UISP projects?

Subsidiary research questions to be addressed in this study:

- How does the UISP Projects top five (high scoring factors) critical success factors obtained from this research compare to the top construction sector critical success factors
- How applicable is the use of the PIP tool in evaluating UISP Projects?
- Are there any critical success factors that need to be added to the CSF list that is critical to the UISP Project success?

1.5 Research Aims

The aim of this research is:

- To identify the most important critical success factors contained in the PIP tool for the UISP projects
- To compare the UISP projects top ranked critical success factors to the construction sector top ranked critical success factors (top three critical success factors).
- To assess the applicability of the PIP tool in the construction of UISP Projects
- Identify any possible/additional critical success factors, other than the PIP critical success factors

1.6 Research Methods

The research objectives will be achieved by using the following research methods:

- a. A literature review will be undertaken to gather information on factors that is related to CSF, PIP, the construction industry CSF, and UISP CSF.
- b. A questionnaire (the PIP tool) will be sent out to respective UISP Project Managers, the questionnaire will form part of the survey. And if required a further structured interview will take place. The data gathered from the survey and interview will be used to determine the most important CSF (from the PIP model) for UISP projects (deemed by CoCT UISP Project Managers),
- c. Analysis and interpretation of the data received from the survey and interviews
- d. Compare the top five critical success factors for UISP projects to the construction sector critical success factors (construction sector critical success factors based on literature review)
- e. Conclusion and recommendations.

1.7 Limitations of the Research

This research study is subjected to the following limitations:

- Subjective opinion from the participants may not be a realistic reflection of the actual project success, due to personal experience in project participation and individual understanding of success in projects. The project background and structured interview will assist in mitigating this limitation.
- The organisation implementing UISP Projects may choose to not do anything with the outcomes of the research
- Limited time, the time available to collate all the information/ survey questionnaires is limited

1.8 Structure of the Research Report

- Chapter 1: Introduction - Will be a brief outline of the research topic as per the topic proposal. This chapter will consist of an introduction, back to research, research problem, research question, research aims and objectives, research proposition, research methodology, limitations of the research.
- Chapter 2: Literature review – Current literature will focus on Project Success, Project Success Criteria, Critical Success Factors, the PIP and UISP Projects. Links between the success factors and the UISP projects will be established.
- Chapter 3: Methodology – The section will discuss the Research Strategy, Research Requirement, Research Design, Limitation and Research Ethics.
- Chapter 4: Research Study Findings and Data Analysis – the research study's findings and analysis will be discussed in this chapter. The participant demographics, primary research findings and additional research findings will be discussed.
- Chapter 5: Discussion of the Research Study Findings – the primary research studies findings and the additional research findings will be discussed in this chapter.
- Chapter 6: Conclusion and Recommendations – this chapter consists of the research background and approach, research findings, limitations of the research and further research suggestions.

2 LITERATURE REVIEW

2.1 Introduction

The literature review chapter consists of literature based on project success, project management success, project success criteria, project success factors, project success factors for the construction sector projects, the Project Implementation Planning (PIP) tool success factors, PIP structure, Upgrading Informal Settlements Programme (UISP) success factors, and the current status quo regarding UISP's and housing projects. What is project success and how the definition varies for different individuals/ stakeholders and hence the definition remains elusive. Based on what project success is, it gives rise to project success factors and success criteria. There will be an attempt to see if there is a link between project success, the PIP and USIP. A brief background of PIP and critique of the PIP is given. Also a brief background of UISP is given and possible links to PIP.

2.2 Project Success & Project Success Factors

2.2.1 Project Success

The term 'Project success' varies from person to person, each industry, project team and individual has a definition of success (Chan, 2002). Different individuals have their own perception of project success, therefore project success is a topic that is frequently discussed and yet rarely agreed upon (Baccarini, 1999). Therefore, Project Success does not have a standard definition or an acceptable methodology of measuring it. Historically, success was defined as meeting the customer's expectations regardless of whether or not the customer is internal or external (Kerzner, 2009). There is a difference between project success and project success factors. Project success is measured with a set of criteria, while project success factors are actions that assure success.

Chan et al. (2002) considers success as "an intangible perceptive feeling, a measuring criterion that varies with management expectations and varies among persons and with the phases of project. Hence, owners, designers, consultants, contractors, as well as sub-contractors have their own project objectives and criteria for measuring." Therefore, the definition of project success may change according to project type, size and sophistication, project participants and experience of owners (Chan et al., 2002, Pg 4).

It has been established that the term 'project success' varies; Kerzner (2009) gives examples of what project success can be defined to certain stakeholders:

- Customers: safety in its use

-
- Employees: guaranteed employment
 - Management: bonuses
 - Stockholders: profitability
 - Government agencies: compliance with governmental regulations (Kerzner, 2009).

According to Baccarini (1999), the criteria for measuring project success must be set at the start of the project, as to avoid confusion. Different team members/ stakeholders might find that they have different agenda/ concept of success and this may lead to one or more of the team members/ stakeholders might perceive the project to be a failure (Baccarini, 1999). Baccarini further advises that there are two components to project success i.e. Project Management Success and Product Success. Project Management Success – focuses on the project process, in particular the successful accomplishment of time, cost and quality. Product success deals with the effects of project final product. To properly define project success, a distinction should be made between product success and project management success as they not the same (Baccarini, 1999).

Product Success comprises of three components i.e.:

- Project Goal, meeting the project owners' strategic organizations objections.
- Project Purpose, satisfaction of user's needs.
- Stakeholder Satisfaction, satisfying project stakeholders (Baccarini,1999).

With regards to project management success here is three key components i.e. time, cost and quality:

- Time, measured in terms of meeting the schedule
- Cost, measured in term of meeting the budget
- Quality, measured in terms of conformance to functional and technical specifications (Baccarini, 1999).

Project Management Success is subordinate to Product Success, the project management success criteria of time, cost, quality are subordinate to the higher product success objectives. However, Project Management Success influences Product Success, as project management success can influence the achievement of product success (Baccarini, 1999).

It can be said the project management success is a short term criterion while product success is a long term criterion. The term product success may be deemed the same as project success.

2.2.2 Project Success Factors and Project Success Criteria

Project Success Factors is defined as the element of a project that can be influenced to increase the likelihood of success; the independent variables that make a success more likely (Bredillet, 2009). For the purpose of this literature review Project Success Factors, Key Success Factors and Critical Success Factors will be referred to as Critical Success Factors (CSF). The CSF of a project are the elements that contribute to the set outcomes being met. Basically the CSF are the influential characteristics that will either facilitate or impede the achievement of the project success criteria, and impacting on the success of the project as a whole (Lim and Mohammed, 1999). The CSF if present will increase the chances of project success on projects and are considered to be a means to improve the effectiveness of projects (Chan et al., 2004).

Project Success Criteria is the measurement by which the successful outcome of a project is judged, there are dependent variables that measures project success (Bredillet, 2009). Project Success Criteria can also be defined as the set outcomes that constitute the success of the project and are typically established in the early stages of the project (Cooke-Davies, 2002).

Project success can be classified into two categories: the macro and micro viewpoints. The macro viewpoint of project success is determined by two criteria which are completion and satisfaction whereas the completion criterion alone is sufficient to determine the micro viewpoint of project success. The concepts of project success factors and criteria are often misunderstood. However, the concept is important because even though critical success factors (CSF's) play a role in project success or failure, they are not part of the measure of success or failure as is the case with success criteria. Even though the two components are separate from each other, the identification of the projects success criteria will allow success factors to be inferred (Lim and Mohamed, 1999).

A set of success criteria that each stakeholder puts in place defines if the project is successful or not. Factors contribute greatly to project success (Dube, 2015). De Wit (1988) gives examples of macro and micro factors more used in the engineering / construction sector:

Macro factors

- Realistic and thorough definition of project - What
- Efficient manner of project execution - How
- Comprehension of project 'environment' – Context
- Selection of organization realizing project – By whom

Micro factors

- Formulation of sound project policies - Policies
- Clear and simple project organization - Framework
- Selection of key personnel - Human resources
- Efficient and dynamic management controls – Control
- Reliable management information systems – Information (De Wit, 1988).

A diagrammatic representation of the relationship between project success factors and success criteria is displayed in Figure 2.1.

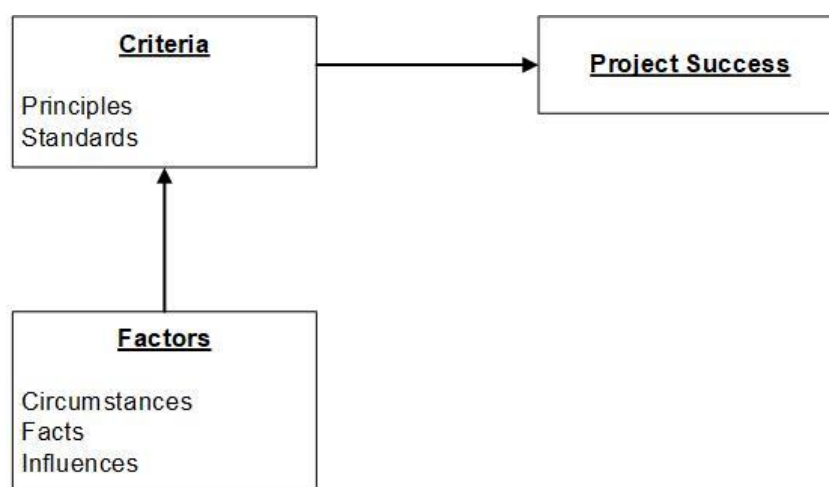


Figure 2.1: Relationship between project success factors and criteria (Lim and Mohamed, 1999)

2.2.3 Critical Success Factors over the Project Life Cycle

It is important to understand that the projects CSF changes with time and depends on where the project is in its lifecycle (Belout and Gauvreau, 2004; De Wit, 1988; Pinto and Prescott, 1988; Pinto and Prescott, 1990; Slevin and Pinto, 1987; Tishler et al., 1996). Hypothetically, at the beginning of a project (initiation phase/conceptualization phase), the operational factors would be considered more important than other factors. Attention generally would be directed towards meeting budget, ensuring the schedule is in place and that the technical performances are being met and later project lifecycle phases the focus could change (Tishler et al., 1996).

Based on the studies done on the CSF of the PIP, the research (Belout and Gauvreau, 2004; Pinto and Prescott, 1988; Slevin and Pinto, 1987) identified that the importance of some of these factors depended on where the project was in the project lifecycle. The research concluded that the ten factors could be laid out over the four phases (conceptualization, planning, execution and

termination) of the life cycle used in the study and that the project manager should pay attention to the specific set of critical factors at each of the different phases (Belout and Gauvreau, 2004; Pinto and Prescott, 1988; Slevin and Pinto, 1987).



Figure 2.2: CSF at Each Stage in the Project Lifecycle (in order of importance)
(adapted from (Pinto and Prescott 1988, p171 and Espin, 2017))

The project lifecycle (indicated in Figure 2.2) is based on Adams and Barndt (1983) and King and Cleland (1983) research work. The projects lifecycle is divided into four distinct stages being:

- Conceptualization - also known as the initiation stage. The project is determined at this stage as being necessary. Preliminary goals and alternatives are specified, and the means to accomplish them. It's the starting of the project
- Planning – at this stage more formalized set of plans are developed to aid in archiving the goal. It's the organizing and preparing of the project
- Execution - the actual “work” of the project. The required materials and resources are procured, the project is produced and performance capabilities are verified.
- Termination – also known as the close out stage. This is when the project is completed.

(Pinto and Slevin, 1990).

As indicated in Figure 2.2, there is a combination of CSF per project lifecycle stage/ phases. The CSF in the bold font are the Pinto and Prescott (1988) CSF, while the CSF in italics font is formulated from Espin (2017) CSF's.

2.2.4 Critical Success Factors for Construction Projects

The construction sector has many various CSF which vary depending on the organisation type, structure, culture, size, leadership and type of construction projects (Hyvari, 2006). This literature review tries to align various construction CSF to the PIP CSF, and also establishes the top five CSF for construction projects. The literature review is based on research conducted by Belout and Gauvreau (2004), Fortune and White (2006), Hyvari (2006) and Slevin and Pinto (1987).

Belout and Gauvreau's (2004) research was based on alignment (established a link) between project success, personal factors and Human Resource Management (HRM). Their research had four hypotheses being; *effect of the personal factor on project success*, *moderating effect of project life cycle*, *moderating effect of project structure*, and *moderating effect of project activity sectors*. For the moderating effect of project activity sectors hypotheses, the sector participants ranged from the Information Technology sector, Engineering sector and Construction sector. And the CSF results are also categories in those particular sectors. Belout and Gauvreau (2004) research concluded that the following CSF were pertinent in the Construction sector:

- Monitoring and Control
- Client Acceptance
- Communication
- Technical Tasks
- Trouble shooting (Belout and Gauvreau, 2004).

Fortune and White (2006) worked through a review of 63 publications, to examine the CSF listed in the literature (63 publications). This process/review enabled Fortune and White to determine which CSF were common across the literature and then was able to rank the CSF based on the count of the citations in the literature. The general top 5 CSF for various sectors was established to be:

- Senior management support
- Clear and achievable objectives
- An up to date project plan
- Strong communication and feedback mechanisms
- User and client involvement in the project (Fortune and White, 2006).

A comparison of the CSF from White & Fortunes (2006) study compared to the PIP CSF is listed in Table 2.1: Fortune and White CSF (2006) compared to PIP CSF.

No	Fortune and White (2006) Review of 63 Publication	Slevin and Pinto (1987) Corresponding PIP CSF
1	Senior management support	Top Management Support
2	Clear and achievable objectives	Project Mission
3	Up to date project plan	Project Schedule
4	Strong communication and feedback mechanisms	Communication and Monitoring & Feedback
5	User and client involvement	Client Consultation

Table 2.1: Fortune and White CSF (2006) compared to PIP CSF

Research by Hyvari (2006) examined the CSF for various industries/ sectors. The objective of the research was to evaluate critical success/fail factors in project management and examined the relationship between critical success/fail factors and organisations background variables. Further the research also ranked the CSF in order of prioritisation. The research was conducted on certain industries/ sectors, these industries/ sectors were the Manufacturing industry, Engineering & Construction industry, Telecommunications and IT, Public Administration & Education, and Others. The Engineering & Construction industry contributed 20% to the research, thus making the research crucial to the Construction industry.

No	Fortune and White (2006) Review of 63 Publication	Slevin and Pinto (1987) Corresponding PIP CSF	Belout and Gauvreau (2004)	Hyvari (2006)
1	Senior management support	Top Management Support	Monitoring and Control	Communication
2	Clear and achievable objectives	Project Mission	Client Acceptance	Client Consultation
3	Up to date project plan	Project Schedule	Communication	Client Acceptance
4	Strong communication and feedback mechanisms	Communication and Monitoring & Feedback	Technical Tasks	Top Management Support
5	User and client involvement	Client Consultation	Trouble shooting	Project Schedule

Table 2.2: A Comparison of the CSF from White and Fortunes (2006) study compared to the PIP CSF list, Belout and Gauvreau (2004) & Hyvari (2006).

As indicated in Table 2.2, the common CSF based on the studies mentioned above for the Constructions sector are:

- **Communication**, as it is common success factor amount all three studies.
- **Top Management Support**
- **Project Scheduling**
- **Monitor and Control**
- **Client Consultation**
- **Client Acceptance**

The Communication CSF was common for all three studies, the other CSF i.e. Top Management Support, Project Scheduling, Monitor and Control, Client Consultation, Client Acceptance were common for at least two of the three studies. The above mentioned CSF will form part of the analysis work (later referred to as the Common Construction Sector CSF based on Literature).

2.3 Project Implementation Profile Tool

2.3.1 Project Implementation Profile Background

The PIP was developed in 1986 and consists of a set of ten critical success factors that were empirically derived across a set of projects (Pinto, 1986; Slevin and Pinto 1987). The PIP tool is a self-assessment methodology that asks questions around ten critical areas (empirically derived in Pinto's 1986 study) and deemed important in determining project success.

The PIP's self-assessment methodology follows the project's implementation performance to be measured through the use of a fifty item questionnaire, in relation to the CSF (Pinto, 1990). The purpose of the PIP is to allow the project manager to focus on both the 'hard' technical issues of the project, as well as the 'softer' behavioural issues that form part of the critical success factors. The PIP further gives the project manager an opportunity to look at the strategic issues of the projects development (Pinto, 1990).

The core of the PIP model is the Slevin and Pinto (1987) ten CSF. The list has been widely accepted on the basis that it was validated and generalized to a broad variety of project types in a study of over 400 projects across a number of different sectors ranging from the Information Technology sector to the Construction Sector (Pinto and Prescott, 1990).

2.3.2 Project Implementation Profile Critical Success Factors

The PIP is made up of ten CSF, these ten CSF have been proven to have a correlation to project success. These ten CSF can be applied to a diversity of projects (Pinto and Prescott, 1988; Pinto, 1990).

1. *Project Mission*

Defining a project's mission is the first step in the project development process. It refers to the goals to which the project wants to aspire to at the end of the project lifecycle. It states the direction in which the project will focus its efforts. It is critical that the project mission is understood by all the stakeholder before and during project lifecycle so that the resources invested into the projects and the commitments made to the project are optimally implemented (Pinto and Slevin, 1988; Pinto, 1990). The project mission clarifies:

- What the project is trying to achieve or build
- The projects capabilities
- Why the project is needed
- How the project will benefit the end user, (Pinto, 1990)

2. *Top Management Support*

Top Management Support refers mainly to the willingness by top management to support and invest into the project. It is important that if the project faces times of difficulty that top management is willing to provide the necessary resourcing, funding and assistance to enable the project to proceed as desired (Pinto and Slevin, 1988; Pinto, 1990). Top Management Support to a project can be demonstrated by:

- Providing the 'promised' resources during the development and implementation of the project
- Using the assigned authority under their designation to assist the project
- Providing the project team with the necessary guidance and support to the project and the project team during a crisis (Pinto, 1990).

3. *Project Schedule*

Project schedule refers to the importance of developing a well – laid out and detailed plan for the implementation of the various stages in a project. The project schedules and plans need to be able to reflect when fundamental resources are required. These resources include: human; material and budget requirements (Pinto, 1990). The detail, and possible greater likelihood for success, of the

schedule will be according to the degree to which the project schedules / plans specify: (Pinto and Slevin, 1988).

- Time schedules
- Milestones
- Manpower
- Equipment requirements.

4. Client Consultation

Client Consultation is the on-going engagement between the project team and the client. The Client refers to the ultimate end user of the project. It is vital that communication and consultation with Clients occur regularly and not only at the beginning of the project. An on-going engagement with the client has benefits to the relationship maintained between the client and other relevant project stakeholders (Pinto and Slevin, 1988; Pinto, 1990).

With regards to the UISP projects, the 'Client' is the ultimate end user, which are the informal settlements residents/dwellers.

5. Personnel

The Personnel refers to the human resources that will be allocated to the project. A projects success is very dependent on the 'quality' of its project team (Pinto, 1990). The right person for the right project. Failure to ensure that the necessary resourcing is allocated to the project may have drastic results on the outcomes (Pinto and Slevin, 1988; Pinto, 1990). Aspects related to the Personal factor include:

- The availability of the right number of personal for the project
- If the personal has received the right and adequate training for the project
- The resource's skill like needed to complete the project successfully
- The availably for necessary training for the project resources (Pinto, 1990).

6. Technical Tasks

The Technical Task refers to the availability of the required technology or technological resources to assist in the aiding of the projects development more efficiently. In other words, does the organisation possess the technological resources to develop the project?

For successful project development, skilled people and adequate technology are equally important to delivery projects successfully. Often senior management underestimates the importance and difficulty of the technical tasks performed by these skilled people (Pinto and Slevin, 1988; Pinto, 1990).

7. Client Acceptance

The Client Acceptance factor refers to the satisfaction, approval and uses of the end result of the projects as received by the Client, "is the Client satisfied with the project and making use of it?" Generally, this factor is judged at the end of the projects, however it is critical to consider this factor throughout the project life cycle, to ensure that the Clients acceptance and expectations are met (Pinto and Slevin, 1988; Pinto, 1990).

8. Monitoring and Feedback

The Monitoring and Feedback factor refers to the timely provision of comprehensive control information at each stage of the project lifecycle. Monitoring and Feedback is an important factor as the project team members receive feedback on how the project is performing compared to the initial baseline plan. The project control processes provide feedback on: (Pinto and Slevin, 1988)

- Project schedule
- Budget
- Performance of team members

The feedback factors prompt the project manager to be aware of real problems on the project and for them to focus on resolving these problems. They also allow the project manager to oversee the corrective actions applied to the identified problems and to reduce the likelihood of deficiencies being overlooked (Pinto and Prescott, 1988; Pinto, 1990).

9. Communication

The communication factor refers to an effective means of interaction amongst the relevant stakeholders (internal and external) throughout the project life cycle. A common communication pattern being a three-way communication line between the project team, the client and the parent organization is critical to ensure that information regarding the project is transferred throughout the project lifecycle (Pinto and Slevin, 1988; Pinto, 1990).

10. *Trouble-shooting*

The Trouble-shooting fact refers to the implementation of an effective procedure to deal with deviations from the original project plan and to resolve the unexpected crises as most projects will experience unexpected problems. Even the best planned projects will require fine tuning at some point in the projects lifecycle. As a result, mechanisms are development, such mechanisms may include defined contingency plans for dealing with deviations from the project schedule. A trouble-shooting mechanism may also enable the identification of potential troubling aspects that will cause issues with the project at various phases of the project lifecycle (Pinto and Slevin, 1988; Pinto, 1990).

2.3.3 *Structure of PIP*

The PIP is made up of several questions, the PIP questionnaire consists of a set of five questions for each of the ten CSF and twelve questions on project performance. These questions are graded by using a 7 - point Likert scale, where there are seven measures and three response categories namely strongly agree, neutral and strongly disagree (Appendix C). The data produced is an average percentage of the score rankings of the ten critical success factors and the total project success based on the questionnaires returned (Pinto, 1990).

From the PIP questionnaires the average percentage scores that are calculated is entered on the Project Implementation Profile Grid where each of these project success factors are evaluated in terms of its percentage outcome (Pinto, 1990).

The critical success factors scoring between 80-100 percentile are classed as good, those in the 50-80 percentile are classed as fair performance and the critical success factors scoring in the 0-50 percentile are classed as critical (Pinto, 1990). CSF's that scores low are an indication that there is likelihood for future problems that might prevent project completion in a successful manner (Pinto and Prescott, 1990).

The use of the PIP has been described to be part of a four step process, which entails implementing the following steps:

Periodically Monitor the 10 Factors over Time

The project manager and significant project team members each fill out the PIP questionnaire at a particular project monitoring time. By having several project team members participating, results in more data being available, which provides a wide range of perspectives of the status of the project.

It also eliminates the possibility of biasness. During the projects development and implementation phase, it is crucial that constant review of the PIP is completed, as to give an up to date picture (Pinto and Slevin, 1990).

Use Consensus to Develop a Collective Picture of the Project

After the PIP questionnaire is filled in/ completed, consensus is reached by the Project Manager and team members on the projects current status, results and scoring (Pinto and Slevin, 1990).

Pay Close Attention to Low Factors

“Low” scores refer to the CSF that are ranked below the 50th percentile. These low scores indicate a possibility of future problem areas that may have an adverse effect on successful project implementation. An action plan may need to be developed for improving these factor scores (Pinto and Slevin, 1990).

Visually Emphasize the CSF

By regularly illustrating the PIP, in the form of a memo or on a project notice board it can be a powerful tool for indication purposes to the project team members and upper management. The current status of the project, problem areas and the CSF scores can be illustrated. These problem areas would suggest obvious “pressure points” that requires attention. The project profile score represents an excellent visual reinforcement and alternative feedback mechanism when compared to the projects budgets and scheduling data (Pinto and Slevin, 1990).

2.3.4 Limitations and Criticisms of PIP

The PIP tool is useful. It has been regarded as adding value to the measurement of project success across most industry sectors (organisations). There is a number of limitations and criticisms of the PIP Tool that have been highlighted in literature. This literature review will focus on the PIP limitation/criticism from Belout (1998), Belout & Gaurvreau (2003), Finch (2003) and Hyvari (2006).

It has been suggested that the main limitations of the PIP tool are:

The PIP does not address perceived important critical factors mainly related to the Personal CSF, no theory was advanced for the inclusion of Human Resource Management (HRM) into the model, further making it a marginal variable for project success (Belout, 1998). Also, due to the fact that only Project Managers were used in the research to develop the tool, meant that Project Managers

evaluated the importance of the personal factor versus the subject expert on Human Resource Management (Belout, 1998). Another limitation was that the term Project Success was not meticulously defined and measured. And lastly the PIP does not allow for the measure of effect of Project Managers training, motivation, experience and other commitments to the project (Belout, 1998). Many project failures can be related to the social issues relating to the project manager, such issues being the qualification, experience, communication and team motivation (Belout, 1998; Belout and Gauvreau, 2004). Belout and Gauvreau (2004) found the following limitations of the Pinto and Prescott (1998) study:

- there was no theory advanced for the inclusion of human resource management
- the term project success lacks a detailed definition
- the methodology lacked detail
- the survey was completed only by project managers (Belout and Gauvreau, 2004).

Hyvari (2006) found the PIP to be lacking theories of important factors like communication. Hyvari (2006) ranks the Communication CSF as number one, while Pinto and Slevin (1987) ranks the Communication CSF as number nine (indicated in Table 2.3 and Table 2.4). Communication is also linked to the size of the organisation and is also linked to the importance factors like Human Resource Management. Leadership skills and work experience was also lacking in the PIP Hyvari (2006). Hyvari's top five CSF are Communication, Client Consultation, Client Acceptance, Top Management Support and Project Scheduling. While Pinto and Slevin's (1988) top five CSF are Project Mission, Top Management Support, Project Schedule, Client Consultation and Personnel. When comparing the top five CSF between Hyvari and Pinto & Slevin, there are some common CSF like Top Management Support, project Scheduling and Client Consultation. However, Hyvari ranked the Personal CSF as No 9, it is considered that the Personal CSF is indirectly linked to Hyvari limitations of the PIP i.e. Human Resource Management, leadership skills and Project Manager work experience.

CSF	Hyvari (2006)	Finch (2003)	Pinto and Prescott (1998)	Pinto and Slevin (1987)
Project Mission	6	7	1	1
Top Management Support	4	6	7	2
Project Schedule	5	5	9	3
Client Consultation	2	1	2	4
Personnel	9	10	10	5
Technical Tasks	7	9	3	6
Client Acceptance	3	4	4	7
Monitoring and Feedback	10	3	5	8
Communication	1	2	6	9
Trouble-shooting	7	8	8	10

Table 2.3: PIP CSF ranking from various studies (Hyvari, 2006)

Finch (2003) raises the concern that there are CSF that impacts the project's success, however certain CSF have been excluded from the PIP. Examples of these excluded CSF are:

- Competence of the Project Manager
- Political Activity within the organisation
- External organizational and environmental factors
- A Perceived need to rapidly implement a project (Finch, 2003)

Furthermore, Finch (2003) founded that using the Likert Scale could create cultural bias arising from mistranslation which could be a limiting factor for the PIP. Finch (2003) also raised the concern if a PIP question/ questions is not answered then this will negatively impact on the total score for that CSF, which may not give a true reflection of the CSF or project Finch (2003). Further consideration should be given for none applicable questions.

Finch (2003) top five CSF were Client consultation, Communication, Monitoring & Feedback, Client acceptance and Project schedule/plans. While compared to Pinto and Slevin (1987) top five CSF, there are only two CSF that are common i.e. Project schedules and Client consultation. Finch ranked the Personal CSF as No 10, it is considered that the Personal CSF is indirectly linked to Finch's limitations of the PIP CSF i.e. Competence of the Project Manager.

CSF	Pinto and Slevin (1987)	Hyvari (2006)	Finch (2003)	Total	
Project Mission	1	6	7	14	
Top Management Support	2	4	6	12	
Project Schedule	3	5	5	13	Top 5 Common CSF
Client Consultation	4	2	1	7	
Personnel	5	9	10	24	Top 5 CSF
Technical Tasks	6	7	9	22	
Client Acceptance	7	3	4	14	Top 6 Ranked CSF
Monitoring and Feedback	8	10	3	21	
Communication	9	1	2	12	
Trouble-shooting	10	7	8	25	

Table 2.4: Common Ranked CSF for PIP (1987), Hyvari (2006) and Finch (2003)

As indicated in table 2.4, the grey highlighted blocks indicate the top five CSF ranked in priority order. Priority order being the most used/ impactful CSF. The blue highlighted blocks indicate the common CSF that is ranked in the top five CSF for PIP (1987), Hyvari (2006) and Finch (2003).

Based on the research the common CSF in the top five CSF based on Pinto and Slevin priority order is Project Scheduling, Client Consultation and Top Management Support. Furthermore, the top six ranked CSF in general, in prioritisation order are Client Consultation, Top Management Support, Communication, Project Schedule, Client Acceptance and Project Mission. It can be hypothesis that there is a link between the common top ranked CSF (Project Scheduling, Client Consultation and Top Management Support) and the top six ranked in general CSF.

The above mentioned limitation or criticism does not negatively impact the creditability of the PIP Tool and the value it adds to the Project Management and mainly Project Success, the limitation/ criticisms.

2.4 Upgrading Informal Settlements Programme (UISP)

2.4.1 UISP Background

Informal Settlements are common to most developing countries which undergo a process of rapid urbanisation and have limited resources to address the housing needs of all its citizens and in particular the poor, who flock to cities in search of a better life and future for their families. In south Africa approximately 1.2 million households live in informal settlements. The Upgrading Informal Settlement Programme is one of the most important programmes of government which seeks to upgrade the living conditions of the 1.2million poor households across South Africa by providing secure tenure and access to basic services and housing (Department of Human Settlements, 2009).

Experience has shown that housing access to basic services, secure tenure and a house provides a springboard to households to improve their social and economic circumstances as also mentioned by Maslow (Department of Human Settlements, 2009; Selva, 2017).

The UISP was first introduced in 2004 as a new tailored programme to assist with the Breaking New Ground (BNG) policy. The aim of the BNG was to housing to deliver well located housing of a suitable quality through various innovations, demand – driven housing programmes and projects. The UN Habitat also viewed the UISP programme as to accelerate the eradication of informal settlements by 2014 (Tissington, 2010; Ziblim, 2013).

The UISP adopts a broad and inclusive definition for informal settlements. It characterises informal settlements as having one or more of the following characterises:

- Illegality and informality
- Inappropriate locations
- Restricted public and private sector investment
- Poverty and vulnerability
- Social stress (Department of Human Settlements, 2009)

The UISP therefore aims to bring about social cohesion, stability and security in integrated developments and to create jobs and economic wellbeing for communities which did not previously have access to land and business services, formal housing and social and economic amenities (Department of Human Settlements, 2010). The UISP seeks to upgrade informal settlements in holistic manner, addressing the community needs linked to Maslow's Hierarchy.

2.4.2 UISP Current Status and Delivery

Currently there is approximately 400 informal settlements in the Cape Town metropolitan area, approximately only fifteen have been identified as UISP and are currently projects. A further six to eight informal settlements have been identified to be upgraded in later years.

The City of Cape Town is currently (2019) updating their Human Settlements Strategy, this Strategy will be approved by Council and ready for implementation by July 2019. The Human Settlements Strategy gives an indication as to how an informal settlement may be upgraded to, i.e. UISP upgrade or BNG or Superblock or just nothing (City of Cape Town, 2018). Superblock or Superblocking entails the development of human settlements in a phased manner, where the first phase is building the major roads and providing bulk services to big blocks of land which will be later subdivided with residential roads, residential properties and open/ community spaces. Department of Human Settlements defines superblock as a street block that is much larger than a traditional street block and is often used in layouts to reduce the impact of cars on a neighbourhood by barring access to motorised traffic while still allowing pedestrian routes through the block (Department of Human Settlements, 2019).

2.4.3 Critical Success Factors for UISP and Housing Projects

The Housing Development Agency (HDA) has identified the following key success factors/CSF for incremental informal settlement upgrading:

- Achieving a response at scale
- Addressing and reaching all informal settlements
- Moving away from housing delivery as the main upgrading response
- Fiscal budget trends towards incremental upgrading
- Understanding informality and working with, not against it
- Functional tenure – administrative recognition of settlements
- Undertaking interim services prior to land acquisition of settlements:
- Prioritising public realm investment
- Addressing livelihoods, the informal economy and job creation, (Housing Development Agency, 2014).

The HDA UISP CSF are not project management aligned CSF or PIP CSF, however are the programmes CSF. A link can be established between the HDA USIP CSF and the PIP CSF as there is some overlap between the CSF. There is no formal CSF for the UISP or BNG Housing programmes, possible further research is required.

HDA's UISP CSF	PIP CSF
Achieving a response at scale	<ul style="list-style-type: none"> • Communication • Technical Task
Addressing and reaching all informal settlements	<ul style="list-style-type: none"> • Communication • Technical Task
Moving away from housing delivery as the main upgrading response	<ul style="list-style-type: none"> • Technical Task
Fiscal budget trends towards incremental upgrading	<ul style="list-style-type: none"> • Technical Tasks
Understanding informality and working with, not against it	<ul style="list-style-type: none"> • Client Consultation • Technical Task
Functional tenure – administrative recognition of settlements	<ul style="list-style-type: none"> • Client Approval • Technical Task
Undertaking interim services prior to land acquisition of settlements	<ul style="list-style-type: none"> • Project Scheduling • Technical Tasks
Prioritising public realm investment	<ul style="list-style-type: none"> • Top Management Support
Addressing livelihoods, the informal economy and job creation	<ul style="list-style-type: none"> • Client Consultation • Monitoring and Feedback

Table 2.5: HDA's UISP CSF aligned to PIP CSF

As indicated in Table 2.5, each of the nine HDA's UISP CSF is aligned with the PIP CSF, some HDA's UISP CSF have more than one PIP CSF alignment. The follow CSF are common:

- Technical Tasks
- Client Consultation
- Project Scheduling
- Communication
- Top Management Support
- Client Approval
- Monitoring and Feedback

The above mentioned CSF are not ranked in prioritisation order, however is similar with Hyvari (2006) and Finches (2003) top five CSF indicated in table 2.4. And simpler to the Construction Sector CSF indicated in table 2.2.

2.5 Summary of the Literature Review

The purpose of this literature review was to explore previous literature/research completed and identify gaps in literature and look for alignment to the research question:

- Based on the ten critical success factors from PIP, which ones are the most important factors (high scoring factors) for ensuring success of UISP projects?

and the subsidiary research questions

- How does the UISP Projects top five (high scoring factors) critical success factors obtained from this research compare to the top construction sector critical success factors

The literature review gave an overview of what Project Success is, and how Project Success has a different meaning from persons to person, various industry or project teams. Project Success Factors and Project Success Criteria was discussed and the relationship between the two. CSF raised/ stemmed from the Project Success Factors and Project Success Criteria. The literature review addressed how the CSF changes during the project lifecycle. At certain stages/phases of the project lifecycle certain CSF are more effective and predominated than other CSF. CSF for Construction Projects was discussed, for this section the literature review concentrated on research by Belout and Gauvreau (2004), Fortune and White (2006) and Hyvari (2006). Based on the research, it was established that there were common CSF highlighted in the Construction sector projects. The common Construction sector CSF are:

- Communication
- Top Management Support
- Project Scheduling
- Monitor and Control
- Client Consultation
- Client Acceptance

The PIP Tool background and brief description of the PIP CSF was given. The structure of the PIP Tool was discussed and how to implement the tool effectively. One of the main focuses of the literature review was to establish the limitation and critique of the PIP Tool. The literature review mainly concentrated on research by Belout (1998), Belout & Gaurvreau (2004), Finch (2003) and Hyvari (2006). What stood out most was the prioritising ranking of CSF, it was established that there was similar CSF ranking amongst the research used. The CSF based on ranking of priority were:

- Client Consultation
- Top Management Support

- Communication
- Project Schedule
- Client Acceptance
- Project Mission

A UISP background, UISP status quo and CSF for UISP and Housing projects (HDA UISP CSF) was discussed in the literature review. A link was established between the HDA UISP CSF and the PIP CSF. The established link to the PIP CSF were:

- Technical Tasks
- Client Consultation
- Project Scheduling
- Communication
- Top Management Support
- Client Approval
- Monitoring and Feedback

Table 2.6 illustrates a summarised version of the CSF at different criteria scenarios i.e. Literature Base Construction Sector CSF (A), Ranking of CSF based on priority (B) and the USIP CSF (C). The CSF are common amongst the various three scenarios.

Literature Base Construction Sector CSF (A)	Prioritisation of CSF (B)	HDA UISP CSF (C)
Communication	Client Consultation	Client Consultation
Top Management Support	Top Management Support	Technical Tasks
Project Scheduling	Communication	Project Scheduling
Monitor and Control	Project Schedule	Top Management Support
Client Consultation	Client Acceptance	Communication
Client Acceptance	Project Mission	Client Approval
		Monitoring and Feedback

Table 2.6: Summary table indicating the CSF based on various scenarios

3 RESEARCH METHODOLOGY

The literature review (Chapter 2) had outlined the literature regarding Project Success, Project Success Criteria, CSF, Critical Success Factors over the Project Life Cycle, Critical Success Factors for Construction Projects, Project Implementation Profile Background, Project Implementation Profile Critical Success Factors, Structure of PIP, Limitations and Criticisms of PIP, UISP Background, UISP Current Status and Delivery, Critical Success Factors for UISP and Housing Projects. This chapter discusses the approach undertaken to answer the research questions stated in Section 1.4. The primary research question being:

- *Based on the ten critical success factors from PIP, which ones are the most important factors (high scoring factors) for ensuring success of UISP projects?*

This chapter consists of four sections, they are Research Requirement, Research Design, Limitations and Research Ethics.

3.1 Research Strategy

Research strategy is a high level approach which determines the detailed work that needs to be done (Yin, 2009). The research methodology / strategy adopted for this study is quantitative as this research study examined the Project Managers perception and ranking of the PIP CSF applied to UISP Projects.

The research strategy chosen for this study is a quantitative research strategy. Quantitative research uses logical or statistical observations to draw conclusions. Quantitative research can be defined as research method that is used to generate numerical data and hard facts, by employing statistical, logical and mathematical technique. The data collected does not need to be naturally quantitative but can be converted through the use of measurement instruments into useable quantitative data i.e. surveyed responses can be converted into numerical values (Muijs, 2010, Surbhi, 2016).

While a qualitative research strategy emphasizes an inductive approach where knowledge is arrived at through the gathering of facts, which forms the basis for laws. The strategy emphasizes the mapping of words and phrases rather than the quantification in the collection and analysis of data (Bryman and Bell, 2003). Table 3.1 indicates the main contrasts between qualitative and quantitative research.

Quantitative	Qualitative
Numbers	Words
Point of view of researcher	Points of view of participants
Researcher distant	Researcher close
Theory testing	Theory emergent
Static	Process
Structured	Unstructured
Generalisation	Contextual understanding
Hard, reliable data	Rich, deep data
Macro	Micro
Behavior	Meaning
Artificial settings	Natural settings

Table 3.1: Contrasts between Qualitative and Quantitative Research (Bryman & Bell 2011: 410).

3.2 Research Requirement

The PIP Tool applied to UISP Projects is the subject of this research. The purpose of the research is to get an opinion/ input from Project Managers regarding the top five CSF for UISP projects and the effectiveness of the PIP tool on UISP Projects to ensure project success. Hence the underlining research questions for this research as mentioned in section 1.4 are:

The primary research question is:

- *Based on the ten critical success factors from PIP, which ones are the most important factors (high scoring factors) for ensuring success of UISP projects?*

Subsidiary research questions to be addressed in this study:

- *How does the UISP Project top three critical success factors obtained from this research compare to the top three construction sector critical success factors*
- *Are there any critical success factors that need to be added to the CSF list that is critical to the UISP Project success?*

- *How applicable is the PIP tool in evaluating UISP Projects?*

The research question will be answered in the following steps:

- Step 1: Identify current UISP Projects within the Cape Town Metropolitan Area and identify the UISP Project Managers.
- Step2: Identify common Construction Sector CSF and possible UISP CSF
- Step 3: Analysis and compare the opinions/inputs from UISP Project Managers regarding the top CSF and the effectiveness of the PIP tool for UISP Projects.

Step 1 was partially completed in Chapter 1, where the need for UISP projects, challenges encountered was discussed and UISP projects within the Cape Metropolitan Area identified. The UISP and PIP tool Background was further discussed in Chapter 2.

Step 2, the construction sector CSF and UISP CSF was addressed in Chapter 2, were common Construction Sector CSF was established based on literature by Belout and Gauvreau (2004), Fortune and White (2006) and Hyvari (2006), and the UISP CSF was formulated based on literature from a housing agency (HDA).

Step 3, this step requires the UISP Project Managers to complete the PIP questionnaire. Minor modifications had been made to the PIP questionnaire, the questions that have been added to the questionnaire addresses the *How applicable is the PIP tool in evaluating UISP Projects* subsidiary question. By having the questionnaire answered leads to data been gathered and this data is quantifiable. The Research Design (3.2) elaborates on the process that is used to archive this.

3.3 Research Design

The Research Design section describes the structure of the research approach intended to answer the research questions of this study. The research instrument chosen to gather the data for analysis is described in Section 3.2.1 Research Instrument. A sample chosen for the research is described in Section 3.2.2 Sample Framework. The distribution methodology implemented to distribute the research instrument to the given sample is described in Section 3.2.3 Data Collection. The data collected will be analysed, the methodology used for analysis is described in Section 3.2.4.

An interview research was used for this research study. A structure interview is a research strategy in which quantitative information is systematically collected, predominantly by questionnaire at a single point in time, from a target sample of a relevant population. This information is then examined to detect patterns of association (De Leeuw & Dillian, 2008; Easwaramoorthy & Zarinpoush, 2006).

There are four important benchmarks for the research questionnaire/ survey to have. These benchmarks are:

- Coverage
- Sampling
- Response
- Measurement, (De Leeuw & Dillian, 2008)

The Research Instrument, Sample Framework, Data Collection and Data Analysis mentioned below are aligned to De Leeuw & Dillian (2008) four benchmarks.

3.3.1 Research Instrument

The interview research method was used for this research study, specifically the structured interview research method. In a structured interview, the interviewer asks a set of standard, predetermined questions about particular topics, in a specific order. As per the research survey Questionnaire in Appendix C – Survey Questionnaire. The respondents need to select their answers from a list of options. The interviewer may provide clarification on some questions (Easwaramoorthy & Zarinpoush, 2006).

The research questionnaire (refer to Annexure C: Survey Questionnaire) is designed in a specific format to obtain data related to the main research question and the subsidiary research questions for this study. The bulk of the research questionnaire Section B based on the PIP tool questionnaire. This research questionnaire is divided into three sections, Section A – General Project Manager & Project Information, Section B – PIP Questions related to the ten CSF and Project Performance applicable to the project, Section C – The effective use of the PIP tool in UISP projects.

Section A consists of the general project information such as the Project title, Project Managers name, Project Managers age group and years of project management experience, phase of the project in accordance with project lifecycle and the value of the project. The monetary value of the

project gives an indication on the magnitude of the project. The projects with a total project value under R10 million will be considered as small in size, the projects with a total project value between R10 million and R 30 million will be considered as small to medium in size, the projects with a total project value between R30 million and R 50 million will be considered as medium in size, the projects with a total project value between R50 million and R 70 million will be considered as medium to large in size and project with a total project value above R70 million will be considered as large projects (City of Cape Town,2018).

Section B consists mainly of the PIP questions related to CSF. Fifty questions are related to the PIP CSF, under each of the ten CSF there are five questions. These questions are graded by using a 7 - point Likert scale, where there are seven measures and three categories namely strongly agree, neutral and strongly disagree. The data produced is an average percentage of the score rankings of the ten critical success factors and the total project success based on the questionnaires returned (Pinto, 1990). Likewise, the Project performance questions are also measured the same as the PIP CSF. There is an additional question under the project performance section, this question is related to the respondent opinion on which three CSF they find important/makes a project successful.

Section C consists of six questions and a general comments section related to the effective use of the PIP tool, the respondents reflect on effective use of the PIP Tool in UISP Projects. Based on the six questions in the questionnaire, three questions are closed-ended questions. This means that it is a simple reply/answer (Yes or No). The remaining three questions are open-ended questions, the open-ended questions are linked to the reply on the three closed-end questions, if the response was “No” then an explanation was required as to why the choice of a “No”. This gives the respondent opportunity to advise as to why the use of the PIP tool is not effective to UISP projects.

For confidentiality reasons and to avoid confusion each UISP project’s title names have been substituted with P1, P2, etc. After all the responses are received regarding each UISP Project (P1 to P13), the data will be analysed per project. The analysis consists of:

- Calculate the scoring per CSF (maximum score is out of 35).
- Convert the CSF score to percentages
- Produce a project profile score (a graph indicating the CSF scoring in percentage format), as illustrated in Figure 3.1
- Input all the thirteen projects scores into a master data file (excel spreadsheet), the average of the score per CSF will be used for this study.

- Compare the upper 50 percentile (high scoring) CSF obtained from the data with the Belout and Gauvreau (2004) study and the Common Construction CSF literature based

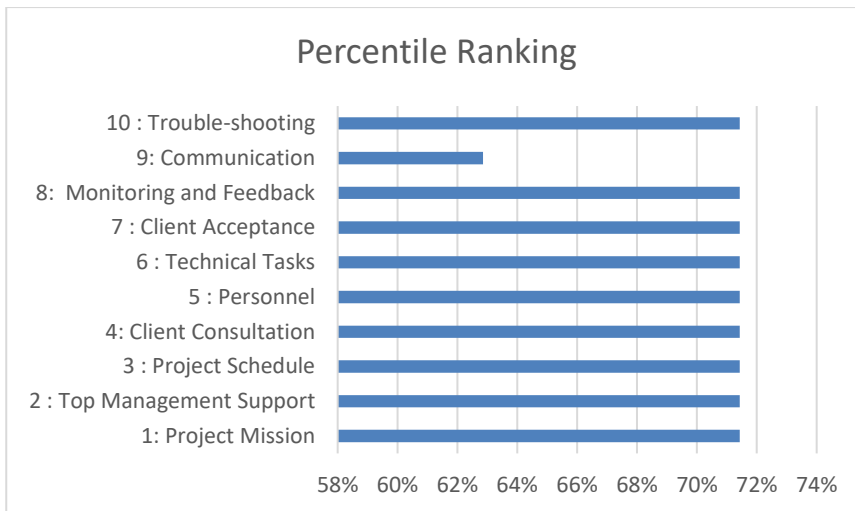


Figure 3.1: Example of a Project Profile Score Diagram

3.3.2 Sample Framework

The sample framework is the means of choosing certain members of a target population that will be interviewed in the survey (Turner, 2003). The entire populations cannot be sampled because of feasibility and cost and constraints, hence selecting a representative sample from the population of interest for observation and analysis (Bhattacharjee, 2012). It was extremely important to choose a proper sample for this research.

Based on the importance of the research sample, it was ideal to utilise the City of Cape Town as they have the most UISP projects in progress within the Western Cape. Currently (2019) the City of Cape Town has fifteen UISP project in various phases of the project life cycle. Thirteen of the fifteen UISP projects will be used for this study. There are six project manager that participated in the survey. The sample size is based on the number of UISP projects (13 UISP Projects). The 13 UISP projects creates approximately 13850 better living conditions/opportunities and is approximately over R700 million in project value.

For this research the target group was Project Managers and Senior Project Managers that managed UISP projects within the Cape Town Metropolitan area. It was practical to involve the City of Cape Town Project Managers that project manage UISP projects as the City of Cape Town covers the biggest region and has the most informal settlements in the Western Cape. Further

Project Managers, Senior Management and Project Team Members are considered to have the most interest in the project's success (Davis, 2014).

3.3.3 Data Collection

The data collection regarding the common construction sector CSF was based on the literature review (chapter two). The general CSF for the construction sector was established.

The research questionnaire addresses the primary and secondary research questions for this study, the research questionnaire was emailed to the respondents, as the respondents were a small group of six project managers. The use of email has been noted to be the preferred instrument in collecting the PM's feedback, emailing the correspondence worked effectively. Respondents was given an option of a PIP session, were a brief background of the PIP was discussed and created an awareness of the PIP tool for those respondents that was not familiar with the PIP tool before. After the PIP session respondents was given the choice of either completing the research questionnaire and handing it back after the session or completing the questionnaire off site and emailing it back within a two-week timeframe.

Advantages	Disadvantages
Cost saving – less expensive to send questionnaires via email, than to pay postage.	Sample demographic limitations – the questionnaires are limited to those with access a computer and email.
Easy to edit/analysis - simpler to make changes to questionnaires after pretesting and easier to copy and sort data once received.	Lower levels of confidentiality - it is difficult to guarantee anonymity and confidentiality.
Time saving - questionnaires sent via email saves time, as compared to sending the questionnaires via post.	Layout and presentation issues – questionnaires need to be standardise for all respondents and this may be deemed as difficult for the first few times, due to lack of experience for some researchers.
Higher response rate - research shows that response rates via email are higher with than with paper surveys.	Potential technical problems – problem with hardware and software, especially if there is not compatibility.

<p>Lower interview bias - research shows that respondents will answer more honestly with electronic surveys than with paper surveys interviews.</p>	
<p>Quicker response with a magnitude of coverage - participants can answer in virtually minutes or hours, and coverage can be global</p>	

Table 3.2: Advantages and Disadvantages of Using email to conduct survey research (Bryman & Bell, 2003; Thach, 1995; Wright, 2006)

Table 3.1 indicates the advantageous and disadvantages of using email to conduct survey research (Bryman & Bell, 2003; Thach, 1995; Wright, 2006). It must be noted that the most of the disadvantages indicated in table 3.1 was avoided in this study as:

- All of the PM (respondents) have access to a computer and email account. Further an electronic delivery note was generated for each email sent. The electronic delivery note confirmed if the email was delivered to PM and when it was read.
- A high level of confidentiality was obtained, as emails were sent individually.
- The questionnaires were sent in PDF format, PDF format avoids any tampering of the layout and information
- All PM (respondents) should have Adobe the PDF software that reads PDF documents, if the PM's were unable to open the questionnaire (in PDF format) then a different format would have needed to be issued or a paper copy would have been issued.

3.3.4 Data Analysis

The data received from the respondents was analysed for the various sections A, B and C. The data will be analysed using statistics and using Excel as the analytical software. Details of the data analysis will be discussed in Chapter 4.

3.4 Limitations

The following limitations have been noted for the methodology implemented for this research:

- Subjective responses from Project Managers not in favour of project success, as the research may also reflect negative on their project progress
- Subjective responses from Project Managers regarding CSF scoring, a verification question used to limit the impact of subjectivity regarding the CSF

3.5 Research Ethics

Ethical principles have been upheld throughout this dissertation. These ethical principles include:

- No research participants will be harmed, or named in this research
- The participants will be informed that their involvement in the study is voluntary.
- The participants will be advised that they can withdraw from the study at any time without a negative consequence to them.
- The participants will be fully informed about the nature of the research through an explanatory covering email and briefing session. An example is provided in Appendix B.
- The privacy of the participants will be guaranteed by making use of an online survey which is answered anonymously.
- The researcher's affiliation will be declared in the request for participation sent to the potential participants.
- The researcher, along with his supervisor's contact details will be provided.
- The participants are welcomed to contact the researcher should they have any questions and or queries regarding the survey and study.
- The researcher and work presented was well prepared to avoid harm or injury.
- The researcher structured the survey to include both closed and open questions to allow the respondents to think for themselves.
- The researcher completed all the research himself without using third party and or unqualified people to conduct the research (Bhattacharjee, 2012; Bell and Wray-Bliss, 2009; Bryman and Bell, 2003)

This research dissertation was reviewed and ethics clearance was received from the University of Cape Town Research Ethics Board (refer to Appendix A).

4 RESEARCH FINDINGS & DATA ANALYSIS

This chapter aims to presents the findings obtained from the research survey undertaken as described in Chapter 3: Methodology, analyse the data/findings and have a discussion over the findings.

Section A - General Project Information as indicated in the research questionnaire addresses the Section 4.1 Participant Demographics, Section B – PIP Questions related to CSF and Project Performance from the research questionnaire addresses the Section 4.2 Primary Research Findings and Section C – The effective use of PIP tool in UISP projects addresses the Section 4.3 Additional Findings. The detailed discussion will be included in chapter 5.

4.1 Participant Demographics

This section mainly focuses on the Project Managers (PM's) and Projects that participated in the study. The questionnaire was sent to six PM's and all responded, all six of the participants manage UISP projects and other construction related projects. The six respondents are responsible for managing thirteen UISP Projects. Questionnaires was completed for all thirteen UISP Projects. The number of UISP projects managed by respondents ranges from one to four projects (see table 4.1). One of the participants is on a Senior PM level, while the remaining five of the participants are at PM level.

The PM demographic consists of the PM's age, years of project management experience and current level of seniority in the organisation. The PM's ages and years of experience in project management varied, Table 4.1 illustrates the findings. Majority of the participants i.e. four participants are aged between 35 and 45 years, one of the participants are aged between 25 and 34 years, the remaining one participant is in the above 45-year age group. Regarding the PM's work experience, three (50%) of the participants had between 6 and 12 years of project management work experience while the remaining three (50%) of the participants had above 13 years of project management work experience. Four of the participants are between 35 and 45 years old age group, three of them have above 13 years of project management work experience. As indicated there is only one participant at the Senior Project Management level.

Project manager	Level of Seniority	Age	Years of Project Management Experience	Number of Projects
1	Senior Project Manager	between 35 - 45 yrs	above 13 yrs	4
1	Project Manager	between 35 - 45 yrs	above 13 yrs	4
1	Project Manager	between 35 - 45 yrs	between 6 - 12 yrs	2
1	Project Manager	between 35 - 45 yrs	above 13 yrs	1
1	Project Manager	between 25 - 34 yrs	between 6 - 12 yrs	1
1	Project Manager	above 45 yrs old	between 6 - 12 yrs	1

Table 4.1: Summary Table indicating Project Mangers Demographics

The thirteen projects vary in the project life cycle, with majority of the projects (7 of the 13 projects) are in the execution phase, while five projects are in the planning phase and one project in the initiation phase. Table 4.2 illustrates the number of projects in various phases of the projects life cycle.

Majority of the projects (five projects) are in the R50 to R70 million construction value category, three projects are in the R10 to R30 million construction value category, two projects are in the R0 to R10 million construction value category, two projects are in the R30 to R50 million construction value category and one project in the above R 70 million (illustrated in table 4.2). Majority of the projects (five projects) can be classified as medium to large in size and complexity. Majority of projects (seven projects) are in the execution phase, three of the seven projects are in the R50 to R70 million construction value category.

Project Construction Value	Project Size and Complexity	No of Projects	Project Life Cycle			
			Initiation	Planning	Execution	Close out
R 0 < R 10 mil	Small	2			2	
R 10 mil < R 30 mil	Small to Medium	3	1	1	1	
R 30 mil < R 50 mil	Medium	2		1	1	
R 50 mil < R 70 mil	Medium to Large	5		2	3	
Above R 70 mil	Large	1		1		

Table 4.2: Summary of the Participatory Projects Construction Value, Project Size & Complexity and Project Life Cycle Status

4.2 Primary Research Findings

The primary research findings are obtained from Section B from the research questionnaire. Table 8.1 in Annexure E, indicates the overall responses for all 13 projects. As discussed in section 3.2.1: Research Instrument, the project titles have been substitute with “P1, P2” etc., as to avoid confusion and for confidentiality reasons.

Ranking	CSF	Average (mean) score for the CSF (out of 35)	Average Score in %
1	Project Mission	29.92	85.49%
2	Client Consultation	28.62	81.76%
3	Technical Tasks	27.54	78.68%
4	Monitoring and Feedback	27.08	77.36%
5	Personnel	26.38	75.38%
6	Client Acceptance	25.92	74.07%
7	Project Schedule	24.69	70.55%
8	Communication	24.54	70.11%
9	Trouble-shooting	23.92	68.35%
10	Top Management Support	21.85	62.42%

Table 4.3: Summary of the Research CSF

Table 4.3 is the summary of the information received based on the research questionnaire. The PIP CSF are in ranked in priority order. The raw data can be found in Annexure E.

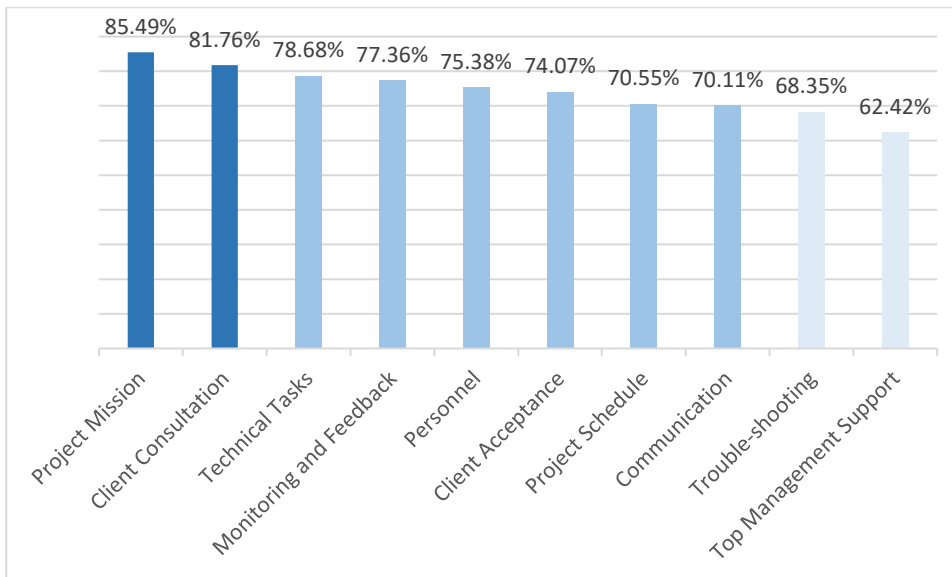


Figure 4.1: Primary Research CSF Heat Map

The following results can be observed:

- No CSF scored over 90% average
- The Project Mission and Client Consultation CSF's scored between 90 – 80%
- The Technical Tasks, Monitoring & Feedback, Personal, Client Acceptance, Project Schedule, Communication CSF's scored between 80 – 70%
- The Trouble shooting and Top Management Support CSF's scored between 70 – 60%
- The top three CSF are:
 - Project Mission (85.49%)
 - Client Consultation (81.76%)
 - Technical Tasks (78.68%)
- The upper 50% consist of the following CSF:
 - Project Mission
 - Client Consultation
 - Technical Tasks
 - Monitoring and Feedback
 - Personal
- The lower 50% consist of the following CSF
 - Client Acceptance
 - Project Scheduling
 - Communication
 - Trouble shooting
 - Top Management Support

Based on the question in the research questionnaire “Which three CSF would you consider the most important/critical for your UISP Projects?”

The following results was observed:

- No CSF scored over 95% average
- The Top Management Support and Communication CSF’s scored between 94 – 90%
- The Project Mission CSF’s scored between 34 – 30%
- The Project Schedule and Client Acceptance CSF’s scored between 30 – 20%
- The Trouble- shooting CSF scored between 20 -10%
- The Personal, Technical Tasks and Monitoring & Feedback CSF scored between 10 – 0%
- The Client Consultation CSF scored 0%
- The top three CSF are:
 - Top Management Support (92.31%)
 - Communication (92.31%)
 - Project Mission (30.77%)
- The upper 50% consist of the following CSF:
 - Top Management Support
 - Communication
 - Project Mission
 - Project Schedule
 - Client Acceptance
- The lower 50% consist of the following CSF
 - Trouble-shooting
 - Personnel
 - Technical Tasks
 - Monitoring and Feedback
 - Client Consultation

CSF	Total (out of 13)	%
Top Management Support	12.00	92.31%
Communication	12.00	92.31%
Project Mission	4.00	30.77%
Project Schedule	3.00	23.08%
Client Acceptance	3.00	23.08%
Trouble-shooting	2.00	15.38%
Personnel	1.00	7.69%
Technical Tasks	1.00	7.69%
Monitoring and Feedback	1.00	7.69%
Client Consultation	0.00	0.00%

Table 4.4: Summary of CSF that Participants (PMs) found most important for their UISP Projects

Table 4.4 is the summary of the information received based on the question “Which three CSF would you consider the most important/critical for your UISP Projects?” The response (CSF) are in ranked in priority order. The raw data can be found in Annexure F.

4.3 Additional Research Findings

The additional research findings are obtained from Section C from the research questionnaire. Section C was developed to evaluate if the use of the PIP Tool was an effective tool for UISP project managers.

The following results was observed:

- Majority of the participants (4 out of 6) evaluated the PIP Tool as useful.
- 2 participants of the participants evaluated the PIP Tool not to be useful
- All the participants (100%) found the PIP CSF applicable to UISP projects
- All the participants (100%) would use the PIP Tool on other projects

Questions	PM COMMENT	
	YES	NO
Did you find the PIP tool useful as a Project Manager on your UISP project	4	2
Did you find the PIP's 10 CSF applicable to your UISP project	6	0
As a Project Manager would you use the PIP Tool on any other projects	6	0

Table 4.5: Summary of Additional Research Findings

5 DISCUSSION OF THE RESEARCH FINDINGS

This chapter discusses in detail the results presented in Chapter 4 for both the primary and additional research findings. This chapter is divided into two sections, Section 5.1 Discussion of Primary Research Findings and Section 5.2 Discussion of the Additional Findings.

5.1 Discussion of Primary Research Findings

This section addresses the primary research finding which entails the CSF classification (good, fair, critical), the research study results compared to the Belout and Gauvreau (2004) study (section 5.1.1), the research study results compared to the Common Construction CSF literature based (section 5.1.2) and the discussion of the Project Managers opinion of the top three CSF that they consider important/critical for their UISP project’s success.

As mentioned in Section 4.2: Primary Research Finding, and as illustrated in figure 4.1, the highest scoring CSF was 85.49% (Project Mission) and the lowest scoring CSF was 62.42% (Top Management Support). The CSF scoring between 80-100 % are classed as good, those in the 50-80 % are classed as fair performance and the critical success factors scoring in the 0-50 % are classed as critical (Pinto, 1990). Based on the research information gathered, the CSF ranked as indicated in table 5.1:

Score for CSF (%)	CSF	Average (mean) Score
100 -80	Project Mission	85.49%
	Client Consultation	81.76%
80 - 50	Technical Tasks	78.68%
	Monitoring and Feedback	77.36%
	Personnel	75.38%
	Client Acceptance	74.07%
	Project Schedule	70.55%
	Communication	70.11%
	Trouble-shooting	68.35%
	Top Management Support	62.42%
below 50	-	0.00%

Table 5.1: CSF Scored and Classified as Good, Fair or Critical

As illustrated in table 5.1, two CSF (Project Mission and Client Consultation) can be identified as good while the remaining CSF are identified as fair. No CSF scored below 50%. The lowest scoring CSF's were Trouble Shooting and Top Management Support. These CSF may require attention as it may impact the success of the project. Based on the results, the CSF that are in the Good or Fair category gives an indication of the project likelihood of success (Pinto, 1990). The CSF that impacts the UISP projects likelihood for success are Project Mission, Client Consultation, Technical Tasks, Monitoring & Feedback and Personnel.

5.1.1 PIP Tool for UISP Project Research Results compared to the Belout and Gauvreau (2004) study

The findings (five high scoring CSF) from this research study will be first compared with Belout and Gauvreau (2004) study, to see if there is any common CSF between the two studies. Then the findings (five high scoring CSF) from this research study will to compared with the common CSF for construction projects, obtained from Chapter 2: Literature Review

As illustrated in table 5.2, Belout and Gauvreau (2004) the top five CSF for the Construction Sector projects were:

- Monitoring and Feedback
- Client Acceptance
- Communication
- Technical Tasks
- Trouble Shooting

The common CSF between the two studies was Monitoring and Feedback and Technical Tasks.

The Technical Task CSF scored 78.68%, this CSF refers to the skilled people and adequate technology to delivery projects successfully. With regards to construction management, the City of Cape Town does not have any technological constraints, project management software and project management training is readily available. The City of Cape Town has developed its own Project Management Book of Knowledge/ guidelines. The City of Cape Town Project Management Book of Knowledge/ guidelines is intended to guide PM's on basic project management aspects such as procurement management, stakeholder management and contract management. The City of Cape Town Project Management Book of Knowledge/ guidelines gives an approach to project management within the City of Cape Town and helps create an awareness of project management within the organisation.

The Monitor and Feedback CSF scored 77.36%. This CSF applies to the entire project lifecycle and gives an indication of the project status regarding project schedule, costs, and quality. PM's publish their project status/ comments monthly. The comments are used to inform the public regarding projects progress and budgets. Further project comments are captured monthly by the PM on a SAP PPM (Project Portfolio Management) system. The project progress, cost/budget, project risks and project governance is captured in SAP PPM. The use of SAP PPM software helps promote a monitor and feedback environment.

Ranking of Importance	Belout and Gauvreau (2004)	PIP Tool for UISP Project Research Results
1	Monitoring and Control	Project Mission
2	Client Acceptance	Client Consultation
3	Communication	Technical Tasks
4	Technical Tasks	Monitoring and Feedback
5	Trouble shooting	Personnel

Table 5.2: Comparison between Belout and Gauvreau (2004) tops five CSF for the construction sector and this research studies, top ranked CSF (ranked in priority)

5.1.2 PIP Tool for UISP Project Research Results compared to Literature Based Common Construction Sector CSF (from Chapter 2: Literature Review)

When comparing the CSF of this research study (PIP Tool for UISP Projects) to the common construction CSF literature based (Chapter 2: literature review) the following, the common construction sector top 5 CSF were (illustrated in Table 5.3):

- Communication
- Top Management
- Project Scheduling
- Monitor and Control
- Client Consultation/ Acceptance

The common CSF between the two studies was Monitoring and Feedback and Client Consultation. The Monitoring and Feedback CSF was also a common CSF between the Belout and Gauvreau (2004) and this research study, and was discussed in section 5.1.1.

The Client Consultation CSF scored 81.76%, this CSF refers to the constant engagement between the project team and the client. In 2017 the City of Cape Town has adopted a Organisational Development and Transformation Plan (ODTP). ODTP promotes a Transversal Management approach, City of Cape Town (2017). The Transversal Management approach tends to create

various clients; however, the term Client refers to the ultimate end user of the project. In the case of the UISP projects, the Client is the beneficiary that receives the serviced erf/plot. Furthermore, UISP Projects uses a bottom up approach meaning that the community is involved in the project from the start to the end.

Ranking of Importance	Literature Based Common Construction Sector CSF	PIP Tool for UISP Project Research Results
1	Communication	Project Mission
2	Top Management Support	Client Consultation
3	Project Scheduling	Technical Tasks
4	Monitor and Control	Monitoring and Feedback
5	Client Consultation/Acceptance	Personnel

Table 5.3: Comparison between General CSF for Construction Projects and this research studies, top ranked CSF (ranked in priority)

When comparing the common CSF between the three studies i.e. Results of the PIP Tool for UISP Project, Belout and Gauvreau (2004) and the Common Construction CSF (literature based), the common CSF are **Monitoring and Feedback, Client Consultation** and **Technical Tasks**. The CSF obtained from the research study aligns with the top five construction sector CSF.

5.1.3 Project Managers Top three CSF that they consider important/critical for their UISP project's success.

When the participants were asked the question "Which three CSF would you consider the most important/critical for your UISP Projects?" The following CSF were considered important/ critical for UISP project's success (upper 50% of the CSF):

- Top Management Support
- Communication
- Project Mission
- Project Schedule
- Client Acceptance

The Top Management Support, Communication and Project Mission was the top three CSF of the upper 50% CSF. The Top Management Support and Communication CSF were of the lower scoring CSF from the primary research findings as illustrated in table 5.1. It can be hypothesised that the participants found the Top Management Support and Communication CSF important and

critical as they do not currently have any system or control measure in place to address issues regarding Top Management Support or Communication.

However, the Project Mission CSF also featured in the primary research findings as illustrated in Figure 4.1. The Project Mission CSF was highest scoring CSF. It can be hypothesised that the participants wanted improvements on their current system in place regarding the Project Mission CSF.

The Top Management Support, Communication, Project Mission, Project Schedule, Client Acceptance CSF's as mentioned above gives an indication that possible improvements or interventions area requires in those related CSF area where UISP projects will be able to gain success efficiently and effectively.

Table 5.4 illustrates the common CSF (highlighted), when comparing the outcome of the participants/ Project Managers opinion regarding the important/ critical CSF for UISP projects, to Belout and Gauvreau (2004) study and to the Literature Based Common Construction Sector CSF. Based on the three comparisons the command CSF were Top Management Support, Communication, Project Scheduling and Client Acceptance. The results obtained from the PM's opinion is aligned to the Literature Based Common Construction Sector CSF, this gives an indication if there is alignment with other Construction Sector CSF studies.

Ranking of Importance	Belout and Gauvreau (2004)	General CSF for Construction Sector Projects	PIP Tool for UISP Project Research/ PM's opinion of the Important CSF
1	Monitoring and Control	Communication	Top Management Support
2	Client Acceptance	Top Management Support	Communication
3	Communication	Project Scheduling	Project Mission
4	Technical Tasks	Monitor and Control	Project Schedule
5	Trouble shooting	Client Consultation/ Acceptance	Client Acceptance

Table 5.4: Common CSF when comparing all three studies

5.2 Discussion of Additional Research Findings

The additional research findings that hold relevance to the questions of this research is presented in Section 4.3, Table 4.5. Majority of the participants found the use of the PIP Tool effective. The two participants that did not find the use of the PIP Tool effective alluded to the fact that they have not used the PIP Tool before and that this was the first time they had used the PIP Tool. And also it would be only fair to comment if they used the tool more regularly. All the participating PM's found the PIP Tool's CSF to be applicable to UISP projects. Besides the PIP CSF, the PM's had no other or additional CSF that they found that might lead to project success. This indicates that the ten PIP tool CSF (project mission, top management support, project schedule/plans, client consultation, personnel, technical tasks, client acceptance, monitoring and feedback, communication, troubleshooting) is sufficient for UISP projects. All the participating PM's indicated that they would make use of the PIP Tool on other projects.

It can be hypothesised that the PIP tool can be utilised as a quality control system for UISP projects. The PIP tool is able to make Project Mangers aware of other critical susses factors to take into consideration when managing projects and assists in delivering projects more efficiently specially for UISP projects. The results of this research gives an indication that processes and policies may require to be upgraded.

6 CONCLUSIONS AND RECOMMENDATIONS

This chapter concludes and summarises the research that was undertaken for this study. The chapter summarises the purpose and approach of the research, the research findings, limitations of the research and further research suggestions.

6.1 Research Background and Approach

This research aimed to look at what could be done to address the Upgrading Informal Settlements Programme project quality assurance at a project/ programme management level in Cape Town. The Project Implementation Profile (PIP) tool was utilised as quality assurance to improve the success of UISP projects.

The PIP is a self-assessment tool that allows the project's implementation performance to be measured through the use of a fifty item questionnaire, in relation to 10 critical success factors. The PIP's ten critical success factors are project mission, top management support, project schedule/plans, client consultation, personnel, technical tasks, client acceptance, monitoring and feedback, communication and trouble-shooting. The purpose of the PIP is to allow the project manager to focus on both the 'hard' technical issues of the project, as well as the 'softer' behavioural issues that form part of the critical success factors. The PIP further gives the project manager an opportunity to look at the strategic issues of the projects development (Pinto, 1990).

The main research question was:

Based on the ten critical success factors from PIP, which ones are the most important factors (high scoring factors) for ensuring success of UISP projects?

The main research questions above led to the aim of this research being:

- To identify the most important critical success factors contained in the PIP tool for the UISP projects
- To compare the UISP projects top ranked critical success factors to the construction sector top ranked critical success factors (top five critical success factors, upper 50% CSF).
- To assess the applicability of the PIP tool in the construction of UISP Projects
- Identify any possible/additional critical success factors, other than the PIP critical success factors

To meet the aims above, the following approach was adopted:

An in-depth literature review comparing Construction Sector CSF from various studies (Belout and Gauvreau, 2004; Fortune and White, 2006 and Hyvari, 2006). This in-depth review gave general CSF for the Construction Sector that would be used to compare the results obtained from research study.

Thirteen UISP projects within the Cape Town Metropolitan area was identified to part take in the research study. The project managers were asked to complete the PIP questionnaire; minor modifications were made to the questionnaire as to address the main research question and subsidiary questions.

6.2 Research Findings

The results of the study and the findings were discussed in detailed in Chapter 4 Research Finding & Analysis and Chapter 5 Discussion of The Research Findings. The findings from the research survey gave an indication what were the top scoring CSF were. The top scoring (upper 50%) CSF were:

- Project Mission
- Client Consultation
- Technical Tasks
- Monitoring and Feedback
- Personnel

When the top scoring CSF above was compared to the construction sector CSF from the Belout and Gauvreau (2004) study the common CSF were Monitoring & Feedback and Technical Task. Also it was noted that the City of Cape Town has interventions/tools/systems in place to assist the Monitoring & Feedback and Technical Task CSF to archive success.

Along with establishing of the top scoring CSF for UISP projects were, the top scoring CSF from the research was compared to the literature based construction section CSF, the common CSF were Monitoring & Feedback and Client Consultation. The Client Consultation CSF referred mainly to the UISP approached used to incorporate the community (Client) into the project as stakeholders.

Based on the research question:

Based on the ten critical success factors from PIP, which ones are the most important factors (high scoring factors) for ensuring success of UISP projects?

The CSF that were important were for UISP projects success were Monitoring & Feedback, Technical Task and Client Consultation.

When the participants were asked what top three CSF they consider the most important/critical for their UISP projects to be successful, the following CSF scored high:

- Top Management Support
- Communication
- Project Mission
- Project Schedule
- Client Acceptance

Most of the abovementioned CSF were in the lower 50% of CSF of the research. Furthermore, when the abovementioned CSF was compared to the Belout and Gauvreau (2004) and Literature based Construction Sector CSF review, the command CSF were Top Management Support, Communication, Project scheduling and Client Acceptance. These CSF gave an indication of alignment between the various studies. These CSF also gave an indication were the UISP projects required certain interventions.

The additional research findings addressed the subsidiary questions. The subsidiary question were:

- *How does the UISP Project top five critical success factors obtain from this research compare to the top construction sector critical success factors*
- *How applicable is the use of the PIP tool in evaluating UISP Projects?*
- *Are there any critical success factors that need to be added to the CSF list that is critical to the UISP Project success?*

Four of the six of the participants found the use of the PIP Tool applicable to UISP projects, the remaining participants (two) advised that they would need to use the PIP tool more often to make comment regarding if the PIP tool was applicable to UISP projects. All the participants found the PIP CSF to be applicable to the UISP Projects. None of the participants had suggested any additional CSF to link to the UISP project success.

6.3 Limitations of the Research

One of the limitations for this research was the time limit, the researcher allowed for two weeks for the participants to respond to the questionnaire. This was an under estimate as most of the participants wanted a PIP tool introduction briefing, as they had never used the tool before. The PIP tool introduction briefing was time consuming and required more than anticipated time and subject content clarification.

In hindsight the second limitation stems from the first limitation, whereby questioning if the research has been more effective if the participants were regular users of the PIP tool? Possibly as the participants use the PIP tool more frequently, they become accustomed to the tool and may have more feedback and opinions. Furthermore, it would be valuable if a second round of interviews/ PIP tool questionnaires was conducted, as the projects progress. This would have given an indication of consistency regarding the CSF scoring and also gives an indication if the CSF changes over the project cycle

The third limitation would be the sample size. If the number of participants and number of UISP projects was greater (larger sample size), it might allow for a more diversified/ verified outcome. An appropriate sample size, renders the research more efficiently, data generated are reliable, resource investment is as limited as possible, while conforming to ethical principles, Farber and Fonseca (2014).

6.4 Recommendation

If the PIP Tool is incorporated in the organisation's project management governance it would create the following positive aspects:

- If the CSF was assessed regularly using the PIP Tool, UISP projects would be delivered efficiently and effectively. The rating of CSF (per project) will give an indication of areas that will need to be improved or requires attention.
- The PM and the project management team are all involved in the capturing/ updating the PIP questionnaire, this creates team work synergy and not only a one-person perspective of the projects progress.
- Other line departments may want to adapt the PIP Tool for simpler or different types of projects.

6.5 Suggestions for Further Research

From an academic perspective there is very little research has been done on CSF for UISP Projects or Human Settlement Projects, it is recommended that this research be repeated to establish its reliability in attaining similar or the same findings. Future research must make use of a larger sample size (possibly nationwide UISP projects and not only UISP projects in Cape Town). Also if the PIP tool is frequently used project managers may give in-depth qualitative feedback.

Linked to the recommendations, if the organisation (City of Cape Town) addresses the low scoring CSF identified from this research, and has put certain interventions such some revised policies, control mechanisms in place to address the low scoring CSF. A comparison (before and after) study would be beneficial for the organisation. The comparison study would indicate if the project management interventions regarding UISP projects has improved, remained the same or deteriorated.

Possible research required to obtain CSF other than the PIP CSF that contribute to the increase in housing or UISP delivery. The maybe more CFS related to housing or UISP projects that need to be identified.

7 REFERENCES

- Adams, J.R. & Barndt, S.E. 1983. Behavioral implications of the project lifecycle. In D.I. Cleland & W.R. King, Eds. *Project Management Handbook*. New York: Van Nostrand Reinhold. 183-204.
- Andersen, E.S., Birchall, D., Jessen, S.A. & Money, A.H. 2006. Exploring project success. *Baltic Journal of Management*. 1(2):127-147.
- Baccarini, D. 1999. The logical framework method for defining project success. *Project management journal*. 30(4):25-32.
- Bell, E. & Wray-Bliss, E. 2009. Research ethics: Regulations and responsibilities. In D.A. Buchanan & A. Bryman, Eds. *Research ethics: Regulations and responsibilities*. London: Sage. 78-92.
- Belout, A. 1998. Effects of human resource management on project effectiveness and success: toward a new conceptual framework. *International Journal of Project Management*. 16(1):21-26.
- Belout, A. & Gauvreau, C. 2004. Factors influencing project success: the impact of human resource management. *International Journal of Project Management*. 22(1):1-11.
- Bhattacharjee, A. 2012. *Social Science Research: Principles, Methods, and Practices*. USA: University of South Florida.
- Boddy–Evans, A. 2019. The Origins of Apartheid in South Africa. Available: <https://www.thoughtco.com/when-did-apartheid-start-south-africa-43460> [2019, January 11].
- Bredillet, C.N. 2009. Mapping the Dynamics of the Project Management Field: Project Management in Action (Part 3). *Project Management Journal*. 40(3):2–5.
- Brink, C. 2014. *Moving towards a strategy for the sustainable delivery of emergency housing and temporary residential accommodation in the City of Cape Town*. M.Arch. dissertation. University of Cape Town
- Bryman, A. & Bell, E. 2003. *Business Research Methods*. USA: Oxford University Press.
- Bryman, A., and Bell, E. (2011). *Business Research Methods*. 3rd Edition. Oxford
- Chan, A.P., Scott, D. & Lam, E.W.M. 2002. Framework of Success Criteria for Design/Build Projects. *Journal of Management in Engineering*. 18(3):120-128.

- Chan, A.P.C. & Chan, A.P.L. 2004. Key performance indicators for measuring construction success. *Benchmarking. An International Journal*. 11(2):203-221.
- Chan, A.P., Scott, D. & Chan, A.P.L. 2004. Factors Affecting the Success of a Construction Project. *Journal of Construction Engineering and Management*. 130(1):153-155.
- City of Cape Town. 2016. *Integrated Human Settlements Five-Year Strategic Plan*. July 2012–June 2017. Cape Town
- City of Cape Town. 2018. CPPM Screening Guidelines Unpublished Report. Cape Town
- Cooke-Davies, T.J. 2002. The "real" success factors in projects. *International Journal of Project Management*. 6(3):164-170.
- Davis, K. 2014. Different stakeholder groups and their perceptions of project success. *International Journal of Project Management*. 32(2):189-201.
- De Leeuw, E.D. & Dillman, D.A. 2008. *International Handbook of Survey Methodology*. NY:Taylor & Francis.
- De Wit, A. 1988. Measurement of project success. *International Journal of Project Management*. 6(3):164-170.
- Department of Housing. 2000. *National Housing Code*. Pretoria: Department of Housing. .
- Department of Human Settlements. 2009. *The National Housing Code: Vol 1, Part 2, The Policy Context*. The National Housing Code. Available: [http://www.dhs.gov.za/uploads/documents/1_Simplified_Guide_Policy \[2018, March 19\]](http://www.dhs.gov.za/uploads/documents/1_Simplified_Guide_Policy_2018_March_19).
- Department of Human Settlements. 2009. *Simplified National Housing Code*. Pretoria. Available: [http://www.dhs.gov.za/uploads/documents/1_Simplified_Guide_Policy_Context1%20Vol%201%20Part%201%20Simplified%20Guide%20to%20the%20National%20Housing%20Code .pdf \[2018, March 19\]](http://www.dhs.gov.za/uploads/documents/1_Simplified_Guide_Policy_Context1%20Vol%201%20Part%201%20Simplified%20Guide%20to%20the%20National%20Housing%20Code.pdf).
- Department of Human Settlements. 2009. *National housing code, 2009*. Vol. 1, Simplified guide to the national housing code: the policy context. Pretoria. Available: http://www.dhs.gov.za/uploads/documents/1_Simplified_Guide_Policy_Context/1%20Vol%201%20Part%201%20Simplified%20Guide%20to%20the%20National%20Housing%20Code.pdf
- Department of Human Settlements. 2009. *Presentation to the Parliamentary Portfolio Committee on Human Settlements*, 2 December. Available: <http://www.pmg.org.za/report/20091202-workshop-department-human-settlements-%E2%80%93-first-session>

- Department of Human Settlements. 2009. *An overview of the current Inclusionary Housing Policy and its development progress*. 3 December 2009. Presentation to the Portfolio Committee. December 2009.
- Department of Human Settlements. 2008. *Strategy for the Allocation of Housing Opportunities Created through the National Housing Programmes*.
- Department of Human Settlements. 2019. *The Neighbourhood Planning and Design Guide*
- Dube, N. 2015. *The Evaluating the Impact of the Project Implementation Profile (Pip) Tool On Interface Management in Public Sector Projects: Case Study KZN Department of Health Facilities*. MSc dissertation University of Cape Town. •
- Easwaramoorthy, M. & Zarinpoush, F. 2006. *Interviewing for Research*. Available: http://sectorsource.ca/sites/default/files/resources/files/tipsheet6_interviewing_for_research_en_0.pdf [2019.October 04].
- Espin, E. 2017. *The Suitability of the Project Implementation Profile to the Execution of Surface Mineral Exploitation Construction Projects in Southern Africa*. MSc dissertation. University of Cape Town.
- Finch, P. 2003. Applying the Slevin-Pinto project implementation profile to an information systems project. *Project Management Journal*. 34(3):32-39.
- Fortune, J. & White, D. 2006. Framing of project critical success factors by a systems model. *International Journal of Project Management*. 24(1):53-65.
- Gerber, J. 2018. R10bn budget slash for human settlements department, *News 24*, 10 May. Available: <https://www.news24.com/SouthAfrica/News/r10bn-budget-slash-for-human-settlements-department-20180510> [2019, May 22].
- Housing Development Agency. 2012. *Informal settlements status*. Research report, HDA, South Africa. Available: http://www.upgradingsupport.org/uploads/files/South_Africa.pdf
- Housing Development Agency. 2012. *Annual Report for 2011-2012*. Available: http://www.thehda.co.za/uploads/images/HDA_AR_lowres.pdf
- Huchzermeyer, M. *Cities with slums: from informal settlement eradication to a right to the city* (provisional title). [draft manuscript]. University of Cape Town Press, forthcoming.
- Huchzermeyer, M. 2004. *Unlawful Occupation Informal Settlements and Urban Policy in South Africa and Brazil*. Trenton, NJ: Africa World Press.
- Hyvari, I. 2006. Success of projects in different organizational conditions. *Project Management Journal*. 37(4):31.

- Kerzner, H.K. 2009. *Project Management: A Systems Approach to Planning, Scheduling, and Controlling*. New Jersey, US: Wiley.
- King, W.R. & Cleland, D.I. 1983. Life cycle management. In D.I. Cleland & W.R. King, Eds. *Project Management Handbook*. New York: Van Nostrand Reinhold. 209-221.
- Lim, C. & Mohamed, M.Z. 1999. Criteria of project success: an exploratory re-examination. *International Journal of Project Management*. 17(4):243-248.
- .
- National Department of Human Settlement. 2009. *Annual Report 2008-2009* Available: <http://www.housing.gov.za/Content/Documents/Annual%20Report%202008-2009/Housing.pdf>
- National Department of Human Settlement. 2008. Presentation on BNG to the Programme in Housing Policy Development and Management" P&DM. January 2008.
- Pinto, J.K. 1986. Project Implementation: A Determination of Its Critical Success Factors, Moderators and their Relative Importance Across Stages in the Project Life Cycle. Ph.D. Thesis. Unpublished, University of Pittsburgh, Pennsylvania. USA.
- Pinto, J.K. & Prescott, J.E. 1988. Variations in critical success factors over the stages in the project life cycle. *Journal of management*. 14(1):5-18.
- Pinto, J.K. & Prescott, J.E. 1990. Planning and tactical factors in the project implementation process. *Journal of Management Studies*. 27(3):305-327.
- Pinto, J.K. 1990. Project Implementation Profile: a tool to aid project tracking and control. *International Journal of Project Management*. 8(3):173-182.
- .
- Rigsby, L. 2005. *Action Research Presentation*. [online slide presentation]. George Mason University. Available: <https://gse.gmu.edu/assets/media/tr/ARRigsbyppt.htm>. [2019, June 09].
- Selva, J. 2017. September 19) Who is Abraham Maslow and What Are His Contributions to Psychology. Available: <https://positivepsychologyprogram.com>.
- 70 years to eradicate Cape Town housing backlog. 2014. *Cape Times*. 19 February. Available: <http://www.iolproperty.co.za/roller/news/> [2017, August 21].
- Slevin, D.P. & Pinto, J.K. 1987. Balancing strategy and tactics in project implementation. *Sloan Management Review*. 29(1):33-41.

- South Africa. 1996. *Constitution of the Republic of South Africa*. 10 December. Available: www.info.gov.za/documents/constitution/index.htm [2018, November 16].
- Statistics South Africa. 2018. *General Household Survey*. Pretoria, South Africa. Available: <http://www.statssa.gov.za/publications/P0318/P03182018.pdf> [2019, June 18].
- Surbi, S. 2016. *Difference Between Qualitative and Quantitative Research*. Available: <https://keydifferences.com/difference-between-qualitative-and-quantitative-research.html#KeyDifferences> [2019, June 09].
- Tan W.G., Cater-Steel, A & Toleman, M. 2009. Implementing IT Service Management: A case study focusing on critical success factors. *Journal of Computer Information Systems*. Winter, 2009.
- Thach, L 1995. Educational Technology, Vol. 35, No. 2 (March-April 1995), pp. 27-31: Educational Technology Publications, Inc
- Tishler, A., Dvir, D., Shenhar, A. & Lipovetsky, S. 1996. Identifying critical success factors in defense development projects: a multivariate analysis. *Technological Forecasting and Social Change*. 51(2):151-171.
- Tissington, K. & Royston, L. 2010. Making Up Lost Ground in South Africa's Informal Settlements. *Business Day* 17 November.
- Tissington, K. 2010. *A Review of Housing Policy and Development in South Africa since 1994: Towards an SER Matrix: Monitoring the Progressive Realisation of Socio-Economic Rights in South Africa*. [Paper prepared for the Studies in Poverty and Inequality Institute]. Socio-Economic Rights Institute (SERI), South Africa.
- Turner, A.G. 2003. Expert Group Meeting to Review the Draft Handbook on Designing of Household Sample Surveys. United Nations Secretariat: Statistics Division
- Turner, J.R. and Muller, R. 2005. The Project Manager's Leadership Style as a Success Factor on Projects: A Literature Review. *Project Management Journal*. 36(2):49-62.
- Wright, K.B. (2006) Researching Internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services. *Journal of Computer-Mediated Communication*,
- Yin, R.K. (2009) *Case Study Research Design and Methods*. In: 4th edn. (Thousand Oak, California: SAGE.
- Ziblim. A. 2013. *The Dynamics of Informal Settlements Upgrading in South Africa: Legislative and Policy Context, Problems, Tensions, and Contradictions*. Habitat for Humanity International Bratislava, Slovakia.

8 APPENDICES

8.1 Appendix A - Ethics Clearance

ACTIVITY | MESSAGES | CONTENT [Download](#) | [Remove](#)

New Message

3 months ago

From: rowen geswindt
To: Azher Shaboodien
Subject: RE: [UCT Ethics in Research] Project Implementation Profile Tool Applied to Upgrading Informal Settlements Programme Projects

[2018_Ethics_re-submission.pdf](#)

Dear Azher Shaboodien,

Thank you for your submission.





Upon review, your application has been accepted.

Please find signed ethics form attached.

All the best!
Regards

[Reply](#)

RE: [UCT Ethics in Research] Project Implementation Profile Tool Applied to Upgradin... Message 320 of 5665

 **From:** UCT Ethics in Research 
Sender: reply-to+81a4ea42-1d9c-4cd4-8977-a9a06a7e2f94@email.submittable.com 
To: afs@webmail.co.za 
Date: 2019-02-27 12:53

To protect your privacy, remote images are blocked in this message. [Display images](#)
Always show images from reply-to+81a4ea42-1d9c-4cd4-8977-a9a06a7e2f94@email.submittable.com

Dear Azher Shaboodien,

Thank you for your submission.

Upon review, your application has been accepted.

Please find signed ethics form attached.

All the best!
Regards

[Reply](#)

8.2 Appendix B – Survey

Azher Shaboodien

Sent: Friday, March 01, 2019 4:10 PM
To:
Subject: Research Question
Attachments: Survey_Questionnaire_2019_A.pdf; survey questionnaire detials.pdf

Good day,

I'm Azher Shaboodien and I am conducting research as part of my Master's Degree (Mphil Urban Design and Management). My research is related to the Project Implementation Planning (PIP) tool applied to Upgrading Informal Settlements Programme (UISP). The main objective of the research is to establish the top five critical success factor for UISP projects and to establish if the PIP tool was useful for the Project Manager managing UISP projects. You are invited to part take in this research survey and assist me with my research. Your participation is highly appreciated.

Please be advised that the information shared in this survey is completely anonymous. Your participation is voluntary and if you wish to withdraw at any time you will be able to do so at no detriment to you whatsoever.

Should you wish to find out more about this research then please do not hesitate to contact me (Azher.shaboodien@capetown.gov.za) and I will gladly share my findings with you. Also note that a PIP Tool briefing session will be held on request, please advise if you would like to attend the session.

Kind regards,
Azher Shaboodien

Factor 6 – TECHNICAL TASKS							
1. Specific project tasks are well managed	1	2	3	4	5	6	7
2. The project engineers and other technical people are competent	1	2	3	4	5	6	7
3. The technology that is being used to support the project works well	1	2	3	4	5	6	7
4. The appropriate technology (equipment, training programs, etc.) has been selected for project success	1	2	3	4	5	6	7
5. The people implementing this project understand it	1	2	3	4	5	6	7
<i>Factor 6 – technical tasks total</i>							
Factor 7 – CLIENT ACCEPTANCE							
1. There is adequate documentation of the project to permit easy use by the client (instructions, etc.)	1	2	3	4	5	6	7
2. Potential clients have been contacted about the usefulness of the project	1	2	3	4	5	6	7
3. An adequate presentation of the project has been developed for clients	1	2	3	4	5	6	7
4. Clients know who to contact when problems or questions arise	1	2	3	4	5	6	7
5. Adequate advanced preparation has been done to determine how best to 'sell' the project to clients	1	2	3	4	5	6	7
<i>Factor 7 – client acceptance total</i>							
Factor 8 – MONITORING AND FEEDBACK							
1. All important aspects of the project are monitored, including measures that will provide a complete picture of the project's progress (adherence to budget and schedule, manpower and equipment utilization, team morale, etc.)	1	2	3	4	5	6	7
2. Regular meetings to monitor project progress and improve the feedback to the project team are conducted	1	2	3	4	5	6	7
3. Actual progress is regularly compared with the project schedule	1	2	3	4	5	6	7
4. The results of the project reviews are regularly shared with all project personnel who have impact upon budget and schedule	1	2	3	4	5	6	7
5. When the budget or schedule requires revision, input is solicited from the project team	1	2	3	4	5	6	7
<i>Factor 8 – monitoring and feedback total</i>							
Factor 9 – COMMUNICATION							
1. The results (decisions mad, information received and needed, etc.) of planning meetings are published and distributed to applicable personnel	1	2	3	4	5	6	7
2. Individuals/groups supplying input have received feedback on the acceptance or rejection of their input	1	2	3	4	5	6	7
3. When the budget or schedule is revised, the changes <i>and</i> the reasons for the changes are communicated to all members of the project team	1	2	3	4	5	6	7
4. The reason for the changes to existing policies/procedures have been explained to members of the project team, other groups affected by the changes, and upper management	1	2	3	4	5	6	7
5. All groups affected by the project know how to make problems known to the project team	1	2	3	4	5	6	7
<i>Factors 9 – communication total</i>							
Factor 10 – TROUBLE-SHOOTING							
1. The project leader is not hesitant to enlist the aid of personnel not involved in the project in the event of problems	1	2	3	4	5	6	7
2. Brainstorming sessions are held to determine where problems are most likely to occur	1	2	3	4	5	6	7
3. In case of project difficulties, project team members known exactly where to go to for assistance	1	2	3	4	5	6	7
4. I am confident that problems that arise can be solved completely	1	2	3	4	5	6	7
5. Immediate action is taken when problems come to the project team's attention	1	2	3	4	5	6	7
<i>Factors 10 – trouble-shooting total</i>							
PROJECT PERFORMANCE							
1. This project has/will come in one schedule	1	2	3	4	5	6	7
2. This project has/will come in on budget	1	2	3	4	5	6	7
3. The project that has been developed works (or if still being developed, looks as if it will work)	1	2	3	4	5	6	7
4. The project will be/is used by its intended clients	1	2	3	4	5	6	7
5. This project has/will directly benefit the intended users: either through increasing efficiency or employee effectiveness	1	2	3	4	5	6	7
6. Given the problem for which it was developed, this project seems to do the best job of solving that problem, i.e. it was the best choice among the set of alternatives	1	2	3	4	5	6	7
7. Important clients, directly affected by this project, will make use of it	1	2	3	4	5	6	7
8. I am/was satisfied with the process by which this project is being/was completed	1	2	3	4	5	6	7
9. We are confident that nontechnical start-up problems will be minimal, because the project will be readily accepted by its intended users	1	2	3	4	5	6	7
10. Use of this project has/will directly lead to improve or more effective decision making or performance for the clients	1	2	3	4	5	6	7
11. This project will have a positive impact on those who make use of it	1	2	3	4	5	6	7
12. The results of this project represents a definite improvement in performance over the way clients used to perform these activities	1	2	3	4	5	6	7
13. Which three factors would you consider the most important for your UISP Projects							
<i>Project performance total</i>							

Additional PIP Questions									
1.	Did you find the use of PIP tool to be effective your UISP project?							YES	NO
2.	If NO, why?	Why:							
3.	Did you find the PIP's 10 CSF applicable to your UISP project?							YES	NO
4.	If NO, why?	Why:							
5.	As a Project Manager would you use the PIP on any other projects?							YES	NO
6.	If NO, why?	Why:							
Comments:									

8.4 Appendix D – Descriptions of Critical Success Factors and Question Grading

The Project Implementation Profile (PIP)

The Project Implementation Profile (PIP) was developed in 1986, it consists of a set of ten critical success factors (CSF) that were empirically derived across a set of projects. The PIP tool is a self-assessment methodology that asks questions around ten critical areas (empirically derived in Pinto's 1986 study) and deemed important in determining project success.

The ten critical success factors (CSF) around which a series of questions are:

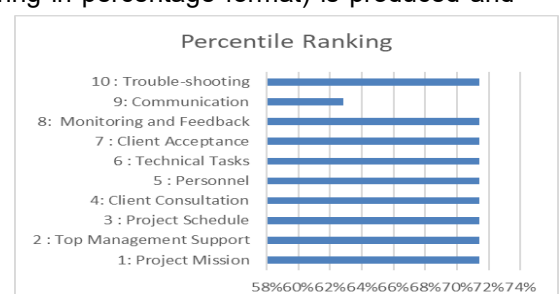
- **Project mission** - Initial clarity of goals and general direction
- **Top management support** - Willingness of top management to provide the necessary resources and authority/power for project success.
- **Project schedule/plans** - A detailed specification of the individual action steps required for project implementation.
- **Client consultation** - Communication, consultation and active listening to all impacted parties
- **Personnel** - Recruitment, selection and training of the necessary personnel for the project team.
- **Technical tasks** - Availability of the required technology and expertise to accomplish the specific technical action steps
- **Client acceptance** - The act of 'selling' the final project to its ultimate intended users
- **Monitoring and feedback** - Timely provision of an appropriate network and necessary data to all key actors in the project implementation.
- **Communication** - The provision of an appropriate network and necessary data to all key actors in project implementation.
- **Trouble-shooting** - Ability to handle unexpected crises and deviations from plan.

Grading/Scoring

Each of the ten factors listed has a set of five questions to be assessed on a scale ranging from 1 to 7, where 1 represents "strongly disagree", 4 represents "neutral" and 7 represents "strongly agree". The most significant contribution of the PIP tool is that it empirically derived ten success factors that are applicable in a number of sectors.

A project profile score diagram (a graph indicating the CSF scoring in percentage format) is produced and analysis.

Example of a project profile score diagram



8.5 Appendix E - Survey Response Data: Primary Research Findings

8.5.1 Primary Research: Master Data File

CSF	PM Scoring for Projects													Average score for the CSF (out of 35)	Average score for the CSF (%)
	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13		
1: Project Mission	29	30	30	30	26	30	26	35	33	32	30	25	33	29.92	85.49%
2 : Top Management Support	15	15	15	15	28	25	25	13	23	26	29	25	30	21.85	62.42%
3 : Project Schedule	29	30	30	30	30	20	20	9	27	24	27	25	20	24.69	70.55%
4: Client Consultation	31	30	30	30	29	30	25	30	33	24	30	25	25	28.62	81.76%
5 : Personnel	33	30	30	30	27	21	22	15	32	25	28	25	25	26.38	75.38%
6 : Technical Tasks	31	30	30	30	32	25	25	26	32	26	26	25	20	27.54	78.68%
7 : Client Acceptance	33	21	21	21	30	25	25	32	23	31	30	25	20	25.92	74.07%
8: Monitoring and Feedback	28	28	28	28	30	25	25	25	29	27	29	25	25	27.08	77.36%
9: Communication	20	21	25	25	28	25	25	25	30	26	26	22	21	24.54	70.11%
10 : Trouble-shooting	28	25	25	25	19	25	25	12	24	27	26	25	25	23.92	68.35%

Table 8.1: Primary data from survey

8.5.2 Primary Research Findings: Project Profile Score Diagrams for all UISP Projects

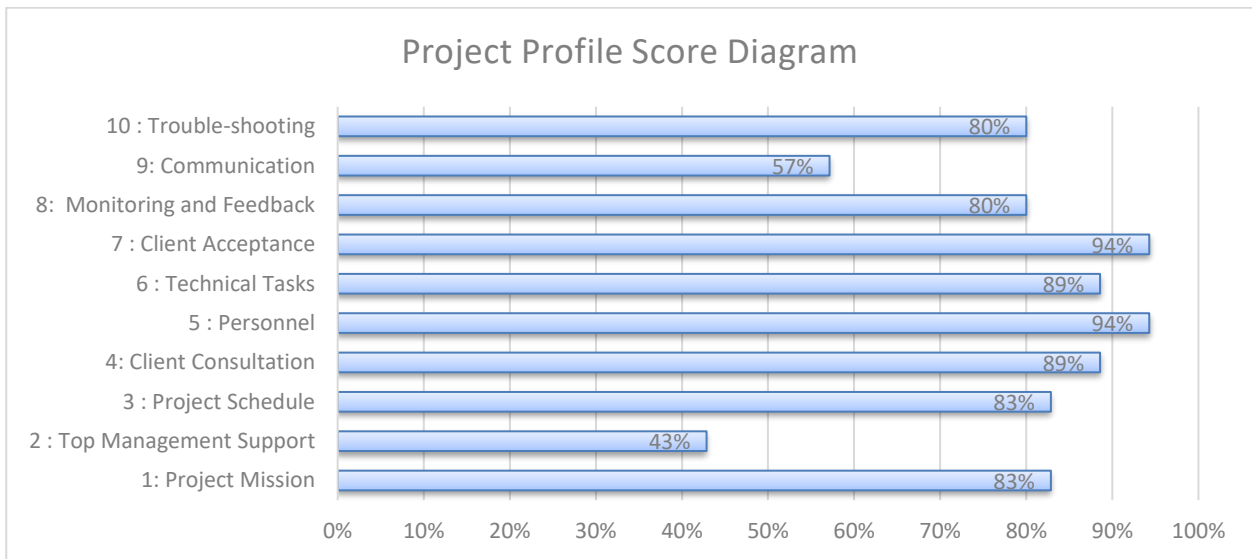


Figure 8.1: P1 Project Profile Score Diagram

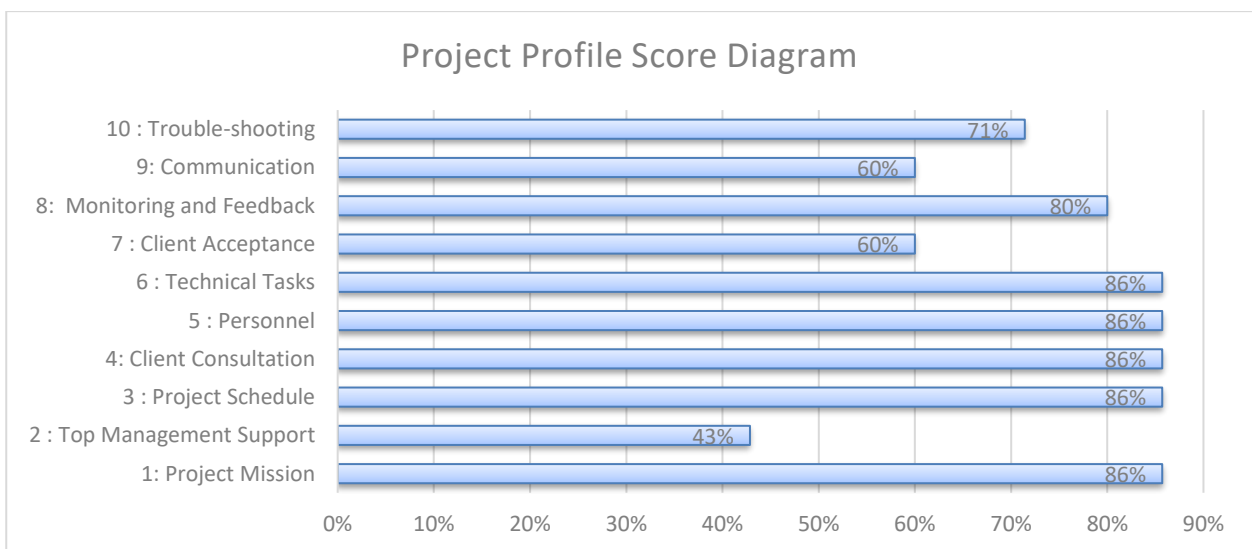


Figure 8.2: P2 Project Profile Score Diagram

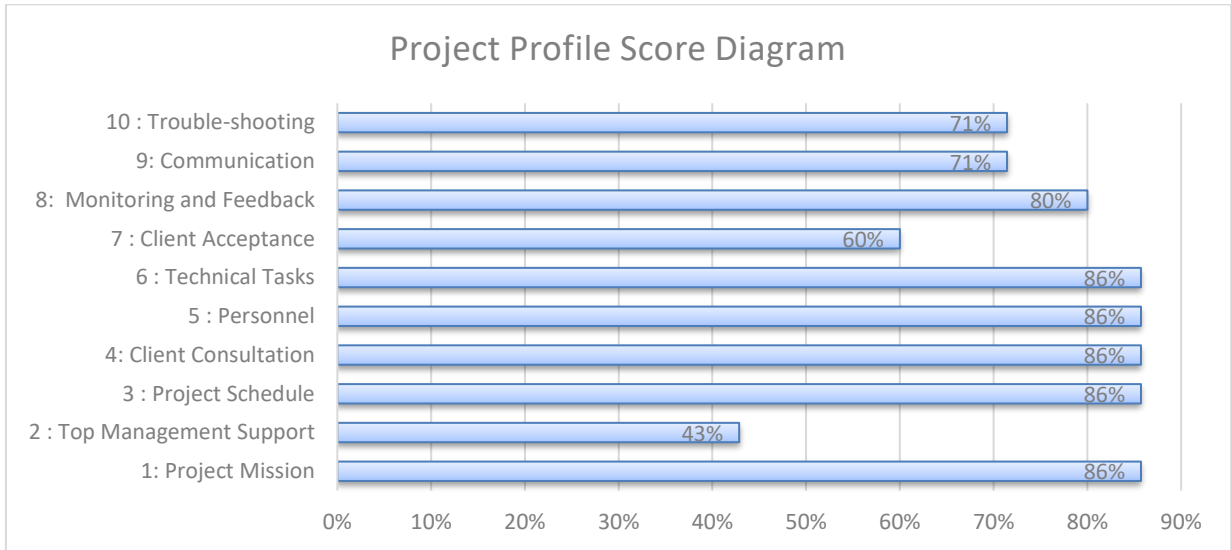


Figure 8.3: P3 Project Profile Score Diagram

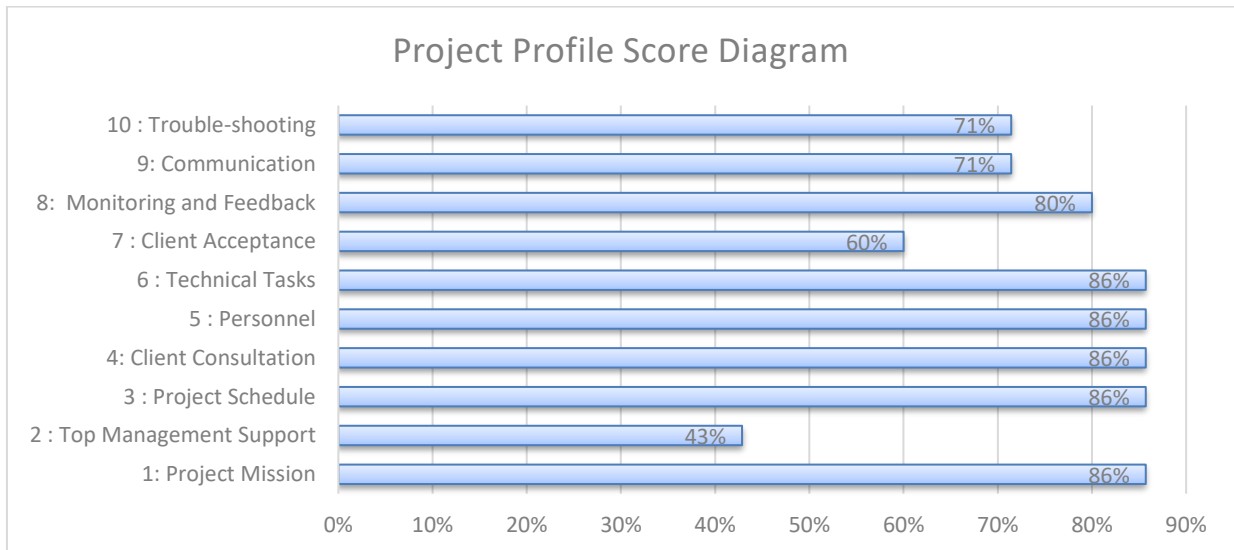


Figure 8.4: P4 Project Profile Score Diagram

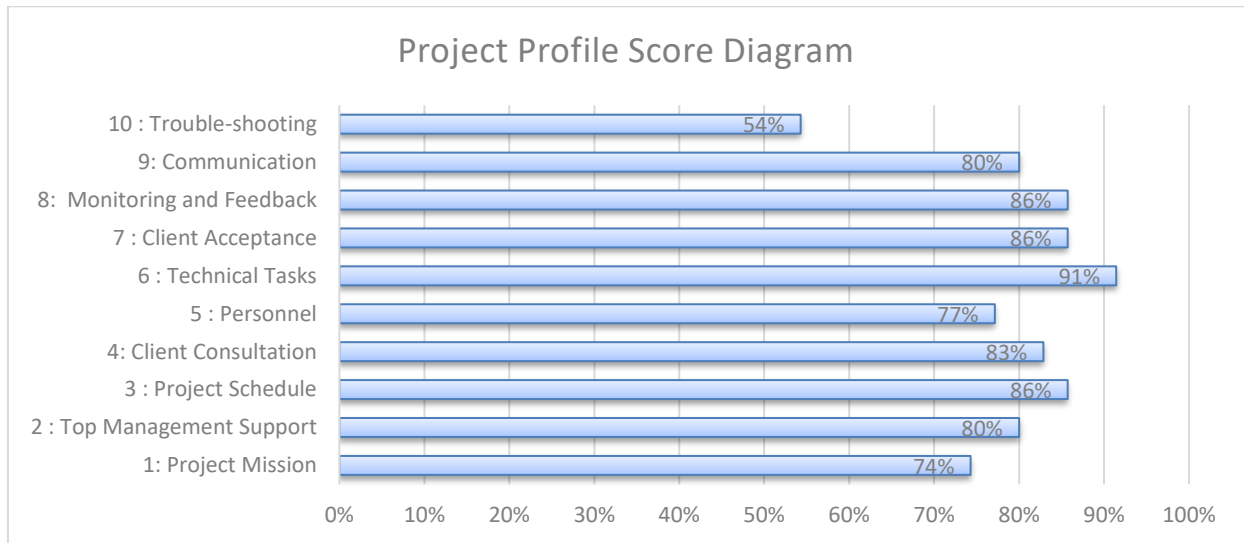


Figure 8.5: P5 Project Profile Score Diagram

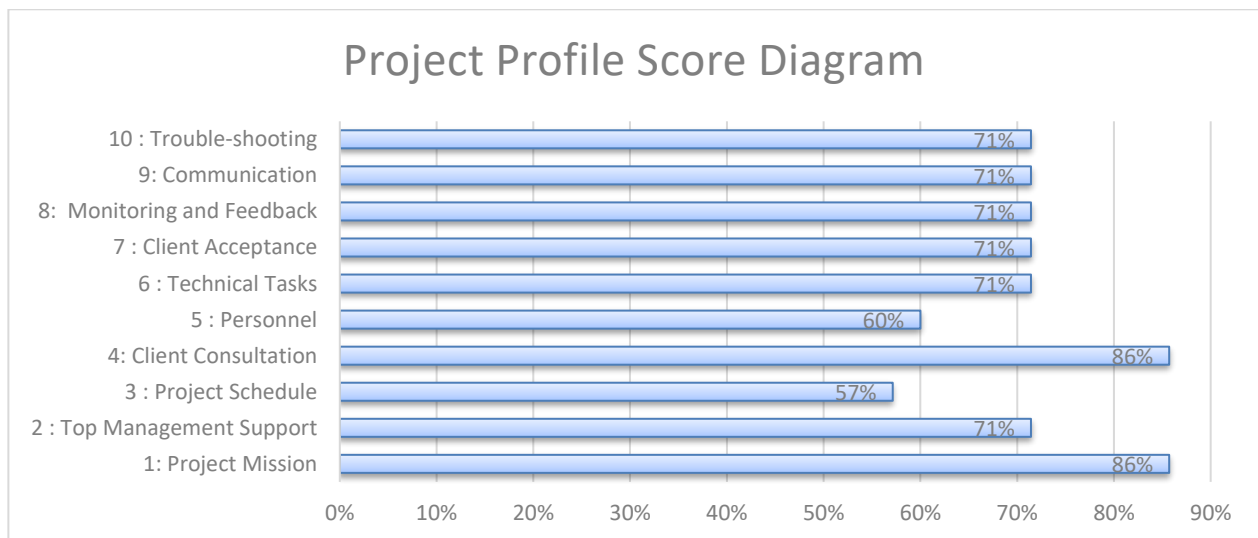


Figure 8.6: P6 Project Profile Score Diagram

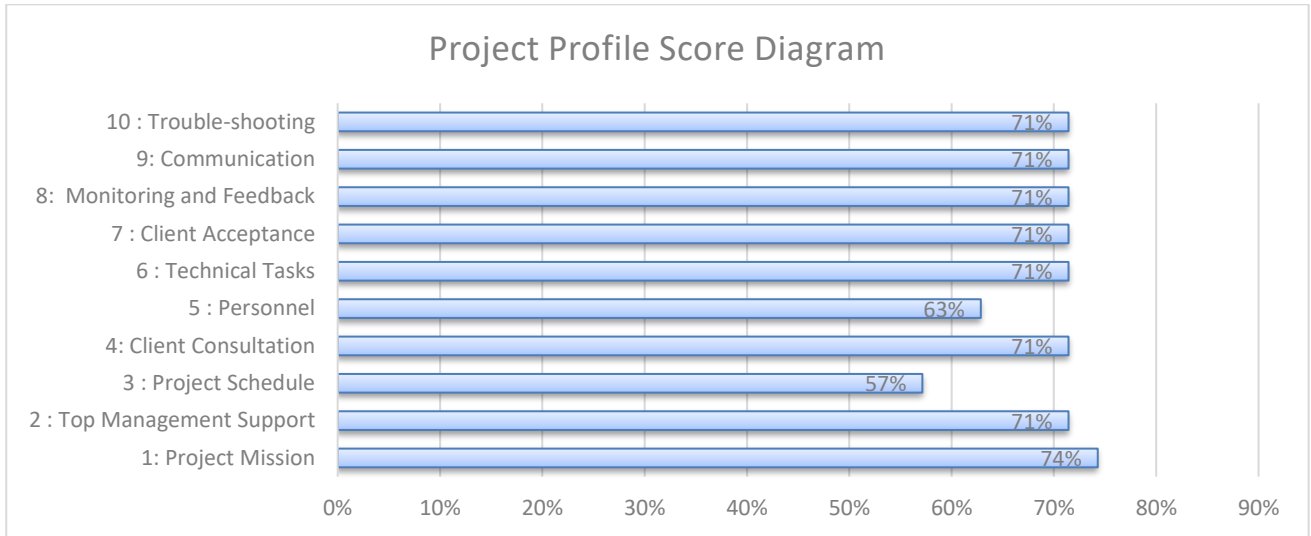


Figure 8.7: P7 Project Profile Score Diagram

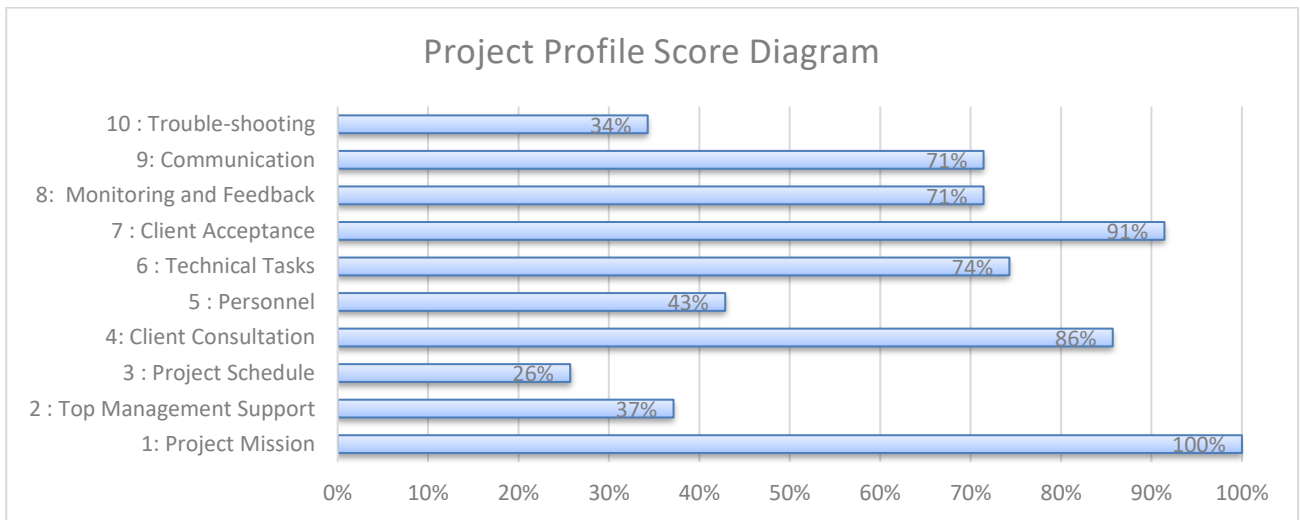


Figure 8.8: P8 Project Profile Score Diagram

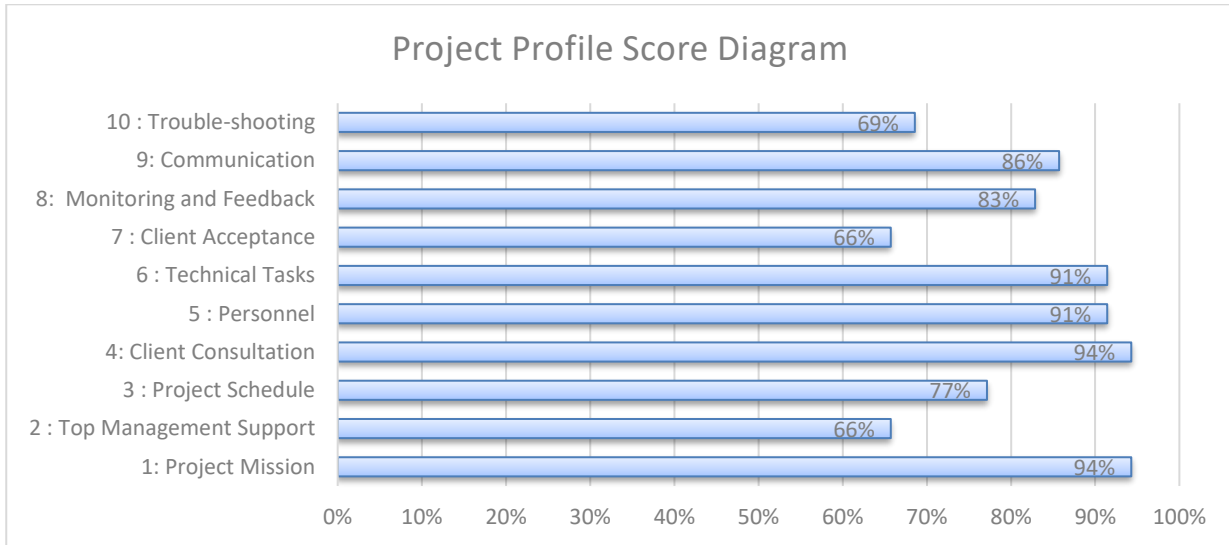


Figure 8.9: P9 Project Profile Score Diagram

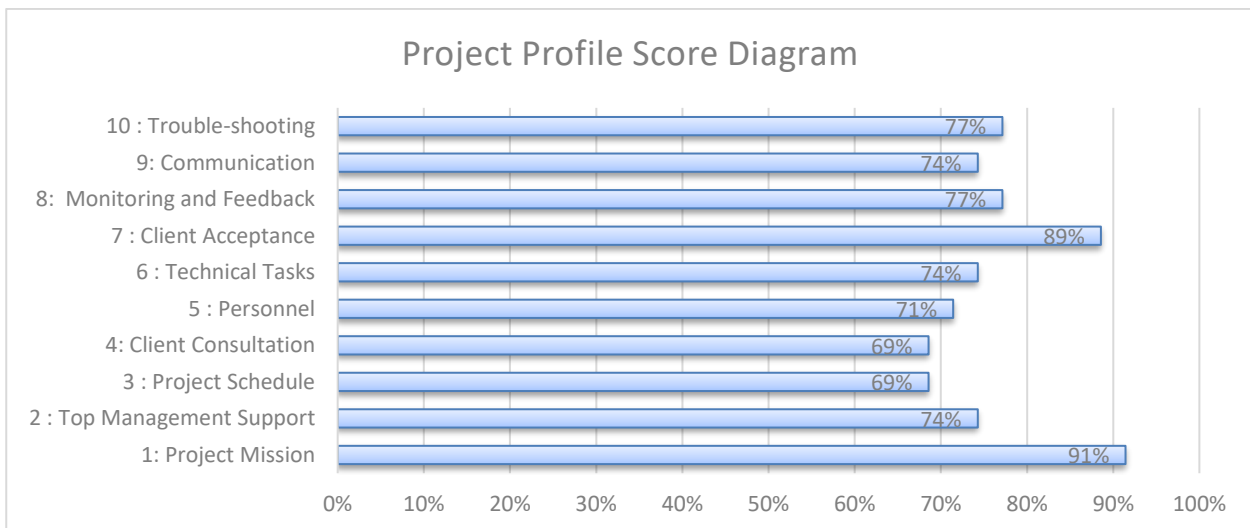


Figure 8.10: P10 Project Profile Score Diagram

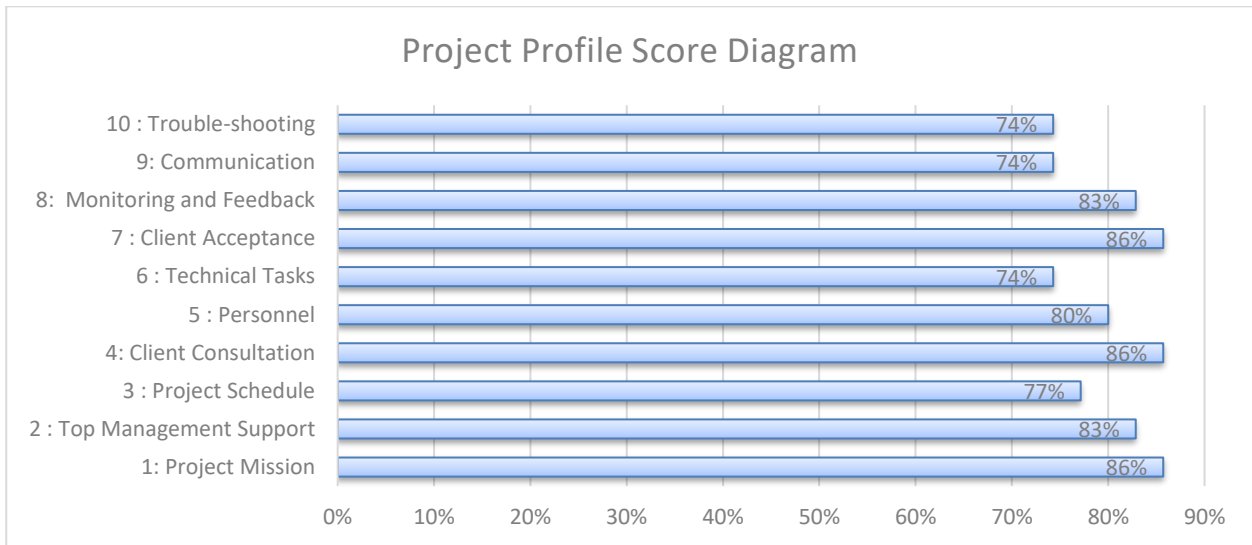


Figure 8.11: P11 Project Profile Score Diagram

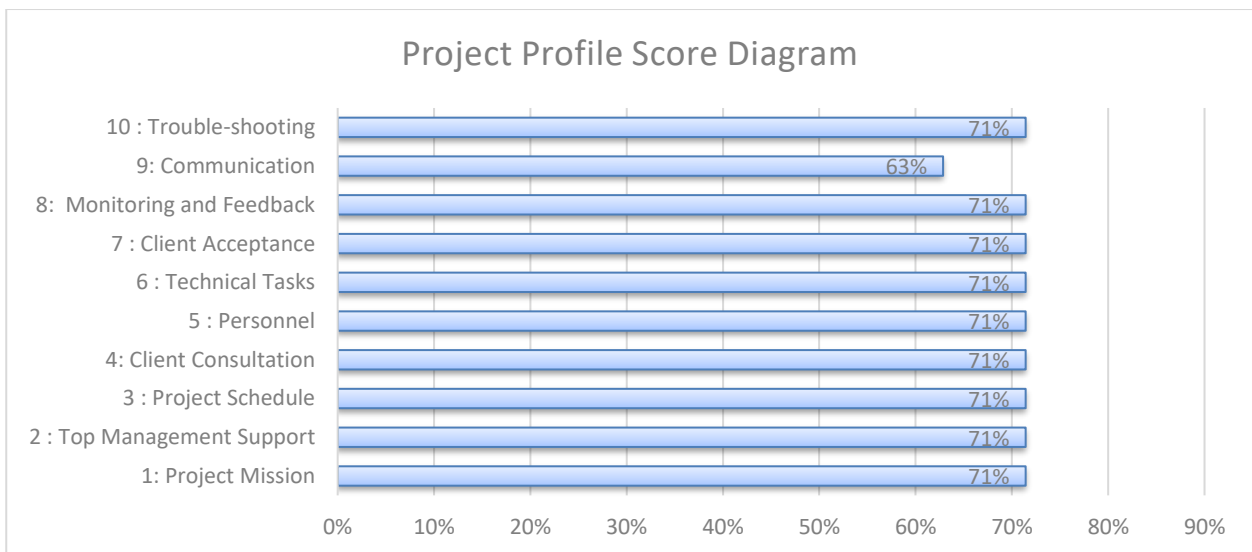


Figure 8.12: P12 Project Profile Score Diagram

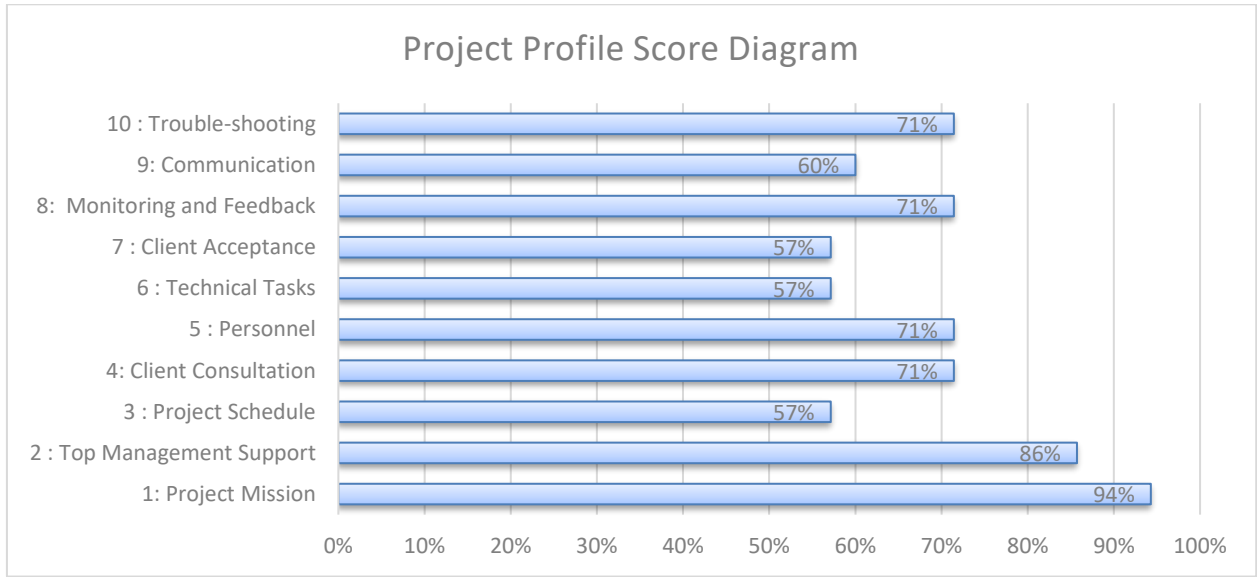


Figure 8.13: P13 Project Profile Score Diagram

8.6 Appendix F - Survey Response Data: Additional Research Findings

CSF	PM's preference for top CSF													Total
	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	
1: Project Mission		1	1	1				1						4.00
2 : Top Management Support	1	1	1	1	1	1	1	1		1	1	1	1	12.00
3 : Project Schedule	1					1	1							3.00
4: Client Consultation														0.00
5 : Personnel					1									1.00
6 : Technical Tasks									1					1.00
7 : Client Acceptance									1			1	1	3.00
8: Monitoring and Feedback						1								1.00
9: Communication	1	1	1	1	1		1	1	1	1	1	1	1	12.00
10 : Trouble-shooting										1	1			2.00