

**Relationships between ERP Leadership
Competences and Perceived Client Satisfaction
and Moderating Effect of Implementation
Context**

**HENLEY BUSINESS SCHOOL
THE UNIVERSITY OF READING**

**Thesis submitted in partial fulfilment of the degree of
Doctor of Business Administration**

by

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Declaration

I confirm that this is my own work and the use of all material from other sources has been properly and fully acknowledged.

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Dedication

I dedicate this to my long-suffering family, who have stood there waiting through the years. To my parents who set me on this path. My dad, mathematician Professor David I Adu, nicknamed the 'maths wizard' during his early days - who might have preferred for this to be a mathematics thesis with a mathematics doctorate at the end of it – I say there is still hope with the grand-kids. To my mum Agnes Adu, a woman with endless faith in me, who never relented in her mission of support for me. It is so easy to attribute this work to you both because you have both lifted me and willed me on to the finishing line with your weekly check-ups, encouraging words and your fervent prayers.

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Abstract

The current thesis focuses on Enterprise Resource Planning (ERP) system implementations, investigating the significance of ERP managers' leadership competences on perceived client satisfaction and how the ERP context moderates that relationship. It reviews the impact of contextual problems and the hurdles to be circumvented during the implementation and their influence on ERP leaders' ability to achieve perceived client satisfaction. In doing so, the current study attempts to remedy the dearth of literature considering context in relation to ERP leadership and client satisfaction; moreover, adding further support to the foundations of the Contingency Theory - applied in the ERP context - by proposing a model of ERP leadership competence-based theory of perceived client satisfaction.

As noted by Saxena and McDonagh (2019) user perception and user satisfaction are considered highly crucial for implementation success in both research literature (Chevers, 2018; Mekadmi and Louati, 2018) and by implementing organisations (Sumner, 2018). Likewise, a considerable amount of research has been conducted into critical success factors, or CSFs, for ERP implementations (e.g. Holland & Light, 1999; Sumner, 1999; Willcocks & Sykes, 2000; Ram & Corkindale, 2014; Costa, Ferreira & Aparicio, 2016; Vargas & Comuzzi, 2019). However, for the current research it has been identified that bringing context into the picture will help to focus such discussions and help converge findings to much more generalisable and useable outcomes and proposals.

The ERP implementation train, due to its heavy dependence on Business and Information Technology (IT) skills, would typically have onboard, a diverse multicultural people, a disparate set of processes and several unrelated traditional systems and technologies, all led and driven along the implementation journey by the manager, usually referred to as: project manager, program manager, implementation manager, project leader, and other possible names based on the role definitions set out for a particular implementation. The implementation would normally play out within the organisational dynamics of the day, referred to in the current work as the ERP implementation context.

The research employs a quantitative approach. An initial pilot study was conducted, using six semi-structured interviews with ERP program and project management practitioners in Sweden, Germany, Canada, United States and the United Kingdom. The six interviewees were all experienced program and project managers who have managed ERP implementations for several years. Each interview took roughly one hour. The aim of the study was to generate

insights from practitioners to be used in building preliminary constructs for the concepts in the research model, such as the ERP implementation context, managers' competences and client satisfaction.

Results from the pilot study were used as a basis for development of the latter questionnaire distributed to gather data on managers' leadership competences, ERP implementation context and perceived client satisfaction. In all, 83 responses were further analysed to test the hypotheses using quantitative analysis techniques including factor analysis and moderated hierarchical regression analysis. The results indicate that the competences: Emotional Intelligence, Leadership Performance, Follower Commitment, Team and Peer Cooperation and Project Management Knowledge are significant predictors of Perceived Client Satisfaction (PCSAT), with Follower Commitment as the strongest predictor of PCSAT. No significant effects were noted for Delivery Capabilities and Offshore Team Relations. The research also found that moderators: Resource Availability Problems, Cultural problems and External Partnership Problems showed highly significant impacts on the strength of the relationship between the independent variables and the dependent variable with Resource Availability problems showing significance across three of the moderated regression analyses carried out. However, cultural problems showed the highest singular significance as a moderator on the relationship between Follower commitment and Perceived Client Satisfaction.

The study adds further support to the foundations of Contingency theory by providing a Model of ERP Leadership-Competence-based Theory of Perceived Client Satisfaction. It is expected that further contributions may be found when harnessing the outcomes of the study to develop required leadership competences to positively affect and tackle problems arising from an ERP implementation context. Furthermore, as follower commitment is illuminated as a highly important antecedent to perceived client satisfaction, to use this information to both select implementation team members and to influence the commitment of the team positively.

Keywords: ERP implementation, ERP leadership, project management, emotional intelligence, EI, Enterprise Resource Planning, IT, organizational leadership, programme management, client satisfaction, information systems implementations and human resources.

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List of abbreviations (or symbols)

Abbreviation	Description
ERP	Enterprise Resource Planning
IT	Information Technology
IS	Information System
PCSAT	Perceived Client Satisfaction
EI	Emotional Intelligence
MELC	Managers' ERP Leadership Competences
ERPIC	ERP Implementation Context
LPERF	Leadership Performance
FCOM	Follower Commitment
TMPRCOOP	Team & Peer Cooperation
DELCAP	Delivery Capabilities
PMK	Project Management Knowledge
OSTMREL	Offshore Team Relations
OCPRB	Organizational Change Problems
EPPRB	External Partnership Problems
RAVPRB	Resource Availability Problems
CULTPRB	Cultural Problems
LDQ	Leadership Dimensions Questionnaire
EIQ	Emotional Intelligence Questionnaire
CSF	Critical Success Factor
SaaS	Software as a Service
PaaS	Platform as a Service
IaaS	Infrastructure as a Service
APM	Association for Project Management
IPMA	International Project Management Association

List of abbreviations

PMI	Project Management Institute
BPC	Business Process Change
MSCEIT	Mayer Salovey Caruso Emotional Intelligence Test
MRP	Material Requirement Planning
CMB	Common Method Bias
CMV	Common Method Variance

1 Introduction and Overview of Thesis

1.1 Purpose of the Research

According to Beheshti (2006), Enterprise Resource Planning (ERP) is a set of modules or business applications that link various organizational and business units. These systems tend to combine customer relationship management (CRM), inventory, finance, human resources (HR), manufacturing, and sales, into a single system using a common platform. Beheshti (2006) further explains that the number of modules implemented is dependent on the business needs.

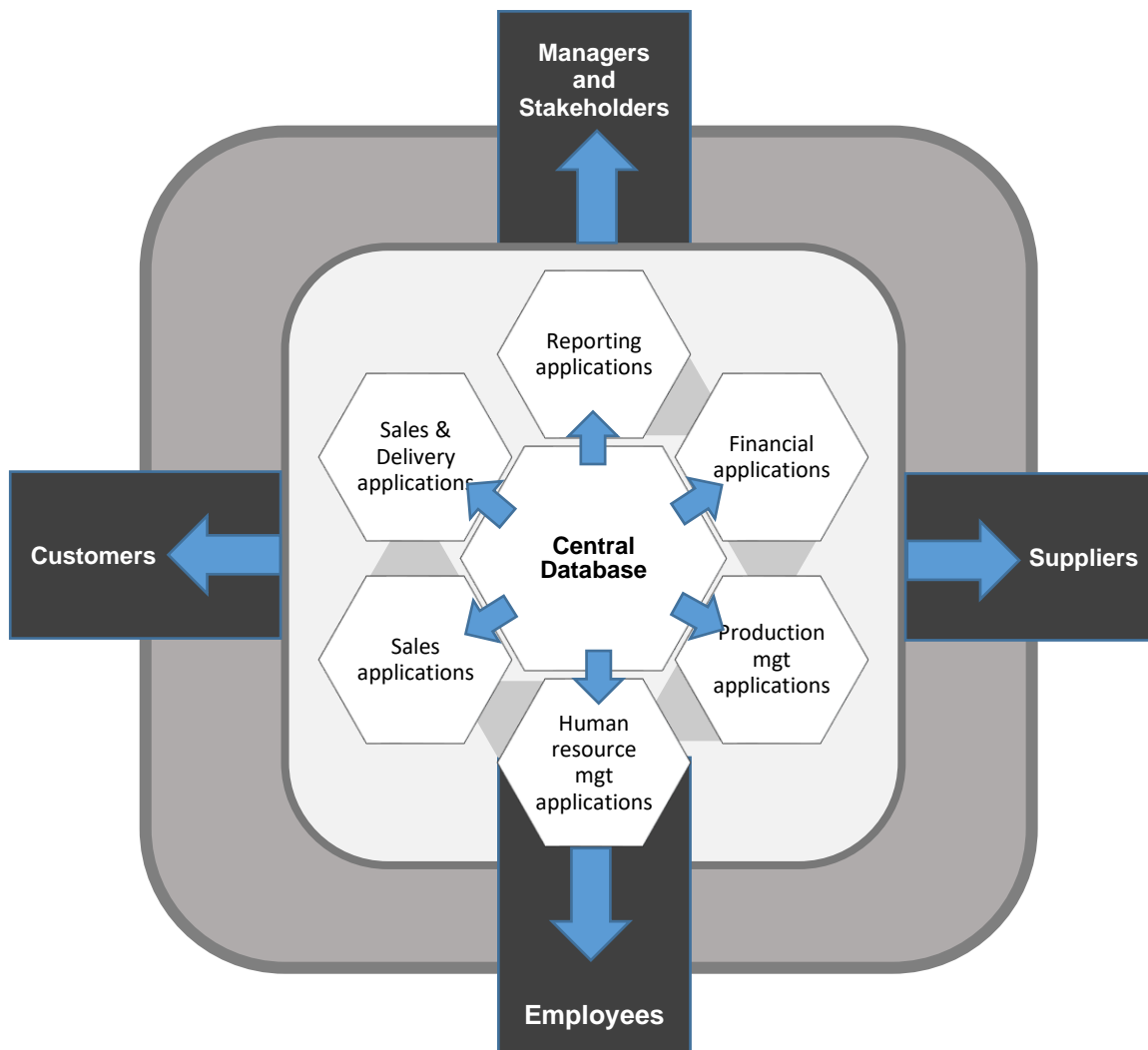


Figure 1-1: Anatomy of an Enterprise System (adapted from Davenport, 1998: p.124)

Enterprise Resource Planning (ERP) implementation has been widely documented as both problematic and likely to overrun time and budget (Ambrosio, 1997; Horwitt, 1998; Stedman, 1998a, 1998b; Martin, 1998). Montealegre and Keil (2000) documented the breakdown failure of an ERP implementation of the computerised baggage handling system at the Denver International Airport. They explained that the failure delayed the opening of the airport by 16 months and went over budget by about \$2 billion. This is a little representation of the impactful consequence of ERP implementation challenges and risks to an organisation's overall economic position and repute. With the level of investment that could be put into such implementations and the ensuing pressures thereof, the result has been that organisations have developed great interest in understanding how to get their implementations right.

Based on the current researcher's experience which may have some bias, the evidence and facts (not fiction) of failed ERP implementations through the years have inadvertently triggered what appears to be an ongoing invitation to all researchers in the area to continually bring to the table their proposals for a resolution of the problem. Accordingly, many researchers have risen up to the challenge; the result of which is very many disparate sets of works which have, and continue to, study and assess the somewhat phenomenon of the unsuccessful ERP implementation, using different lenses and observing from different angles; the outcome of which is still no single report which may be applied with full assurance of success to all contexts of ERP implementations. As is tradition for a doctoral research, the current work is a rigorous exercise to investigate, analyse and further understand ERP implementation issues from the lens of a perceived client satisfaction outcome. More specifically, the current research will analyse the capabilities of implementation managers from a competences perspective including emotional intelligence (EI) and other leadership competences, as independent variables, in relation to perceived client satisfaction; and further study the moderating role of the ERP implementation context on the aforementioned relationship. According to Ika (2009, p. 7) "the only thing that is certain in project management is that success is an ambiguous, inclusive, and a multidimensional concept whose definition is bound to a specific context". Jugdev and Müller (2005) also expressed that the project success notion is complicated and varying depending on people's perception, and is ambiguous and highly context dependent. These assertions highlight the key role of context in the generalisability of any study on the successful management of projects. It can be seen that the ambiguity surrounding the proper contextualising of projects in general, and specifically large implementations such as ERP, has been and continues to be a serious hurdle for researchers and project practitioners. The topic requires more extensive research to support organisations embarking on such mammoth tasks to improve the rates of success and in relation to client satisfaction.

Furthermore, it has been noted from studies in ERP critical success literature that most of the focus so far has been on project and implementation success, thereby inadvertently or otherwise, suggesting other client-centric dimensions have not been perceived to be as important. However, since resistance to change by employees lie “at the root of most ERP implementation challenges” (Salopek, 2001; p. 28), it can be said thus, that client and employee expectations and attitudes play an important role in ERP success (Sower, Motwani & Mirchandani, 2001) and therefore should be subsumed into the overall measures and addressed during the implementation. For example, understanding different stakeholders’ perceptions and ability to influence project outcomes was the theme of Kloppenborg, Stubblebine and Tesch’s (2007) research on sponsor behaviours. In their report they indicated the substantial differences between Executive Sponsors and Project Managers’ perceptions about expected levels of engagement from the Executive Sponsors. Closing this gap in understanding is paramount to understanding and perceiving correctly the client satisfaction phenomenon. The current study seeks to build upon studies in this area. Figure 1-1 presents the linkages between modules, also referred to as applications, which all collect relevant information from the different departments and sources and bring them all together in a central ERP database. The modules are linked and exchange information directly with each other as well as provide views of all departmental activity to managers and stakeholders (Kettunen & Simons 2001).

1.2 Academic Context of the Research

This research brings to bear theories and empirical research from a number of different fields including psychology, leadership, project and program management, organisational behaviour and may further touch upon other relevant fields as the research plays out. The key points found in each area are pulled as necessary through a rigorous and critical review of the different topics discussed within each field along the years in the literature. A brief introduction of key research topics is provided in the subsections that follow.

1.2.1 ERP Program / Project Management

Lycett, Rassau and Danson (2004) define program management as the “integration and management of a group of related projects with the intent of achieving benefits that would not be realised if they were managed independently.” Project management is the application of

knowledge, skills, tools, and techniques to project activities to meet the project requirements (PMI, 2017). Project management is accomplished through the appropriate application and integration of the project management processes identified for the project. Based on the current researcher's experience, due to the complex nature of ERP implementations and the depth of the wider business transformation which can accompany such implementations, ERP implementations tend to be referred to as either a Program or a Project. Thus, the management levels directly involved in the implementation may include: Program lead, program manager, project lead, project manager, program director, project director and other implementation specific roles created based upon context and client's organisational structure. Key literature areas relating to program and project management are discussed further in the literature review section in Chapter 3.

1.2.2 Managers' ERP Leadership Competences

For the purposes of this study, management and leadership are not intended to be discussed as two separate activities – in the typical sense - but together in the specific role of a manager leading the required business transformation activities on an ERP implementation. The role under review is that of a manager and their demonstration of relevant leadership and management competences in bringing an ERP implementation to fruition in a way that is perceived as satisfactory by the end-client, while also considering the contextual challenges to be tackled and overcome along the way.

One of the recurring themes in ERP literature is the role of the project leader (Parr and Shanks, 2000b; Estevez and Pastor, 2003). Though as noted by several papers, the project leader role itself is only a small element of the factors which determine project success, and while some have even argued that the role has been overrated (Parr et al., 1999), it is however, still, a role with the overall responsibility to drive and bring an ERP implementation through to completion. Several project management literatures express the leadership skills required by a project leader to guide an implementation team towards a common goal. Typical ERP implementation projects would have a project leader working in a matrix environment, where the project leader would usually not be the line manager of the individual members of the project team. Yet, to succeed, the project leader must win the trust and commitment of the team members – the followers. According to Whitten (2003), "projects fail because their leaders fail."

A critical review of studies in the topic area is carried out in the literature review chapter, with key highlights and outcomes pulled together to examine the research objectives as they relate to managers' ERP leadership competences, such as:

- Review of the interrelationship between managers' ERP leadership competences and perceived client satisfaction
- Review of the moderating effect of ERP context on the relationship between managers' ERP leadership competences and perceived client satisfaction

1.2.3 Perceived Client Satisfaction with ERP

Critical success factors (CSFs) have been defined as 'those few critical areas where things must go right for the business to flourish' (Rockhart, 1979). The concept has been subsequently applied to many aspects of information systems including project management and ERP implementation (Parr, Shanks and Darke, 1999; Holland, Light and Gibson, 1999). Project 'success' may be defined as completing the project in time and on budget (Markus and Tanis, 2000; Parr and Shanks, 2000b). This concept differs from others which view success in terms of factors such as contribution to company performance (Ross, 1998; Markus and Tanis, 1999) or acceptance by personnel and other change management expectations. Walker (2015, p. 311) emphasised client satisfaction in relation to understanding project success and stated that success of a project is based on "the difference between the client's expectation at the beginning of the project and his satisfaction at its completion".

A critical review of studies on the topic is carried out and key highlights and outcomes are pulled together to examine the following research objectives, in relation to perceived client satisfaction such as:

- Review of the interrelationship between managers' ERP leadership competences and perceived client satisfaction
- Review of the moderating effect of ERP context on the relationship between managers' ERP leadership competences and perceived client satisfaction

1.2.4 ERP Implementation Context

ERP implementations are not the typical IT implementation, as they tend to partially or fully pervade the overall operations of an organisation. In addition, from the researcher's own experience which may contain some bias, the typical setup for such implementations typically

include an outsourcing to a third-party consultancy, and/or relevant freelance practitioners experienced in the specific industry – usually with some development activity offshore. Offshore resourcing is the trend where companies look for cheaper offshore resource options to reduce their baseline costs (Chua and Pan, 2008).

Several researchers have identified the key role played by context in projects (Thamhain and Wilemon, 1977; Maylor, 2003; Crawford, 2005; Pellegrinelli et al., 2007; Ika, 2009; Shao, 2010; Van Scoter, 2011). Ika (2009) stated “the only thing that is certain in project management is that success is an ambiguous, inclusive, and multidimensional concept whose definition is bound to a specific context”. (p. 7). Likewise, Waterhouse (2010) posited that the key to properly managing this type of project is to understand the dynamics of its implementation and make sure that this implementation strategy reflects business transformation as opposed to only IT considerations. The topic area of ERP implementation context is further examined and findings elucidated in the literature review chapter.

1.3 Background to The Research Problem

There is a significant body of literature including books, national and international peer-reviewed journals and conference papers covering the multi-disciplinary area of the leadership of ERP implementations (Parr, Shanks and Darke, 1999; Holland, Light and Gibson, 1999; Shao, 2010). Despite a huge amount of research, the topic is still non-conclusive, thereby suggesting there is still more to be done to reduce the ambiguity on the matter and further provide clarity in the field.

Scholars have recommended follow-on researches in the area of moderating role of context on programs and projects, notably Shao (2010), who carried out a study on the moderating role of program context on the relationship between program managers’ competences and program success.

1.4 Research Question

The research question addressed within this dissertation is:

How does ERP implementation context moderate the relationship between Managers' ERP Leadership Competences and Perceived Client Satisfaction?

In addressing the question, the focus is on the following:

- i. the influences of managers' ERP leadership competences on perceived client satisfaction
- ii. how the ERP implementation context moderates the influence of managers' ERP leadership competences on perceived client satisfaction

1.5 Contributions of The Study

This study purports to make a contribution to fields such as organizational change, business change, organizational leadership, programme and project management, information systems implementations and human resources by examining how an ERP implementation context (ERPIC) moderates the relationship between Managers' ERP Leadership Competences (MELC) and perceived client satisfaction (PCSAT) on implementations across different ERP products and countries. The results of the current research are likely to be of primary significance to managers in an ERP implementation setting, and particularly managers who perceive client satisfaction to be the ultimate goal; although there are wider implications for managers of IT projects and programs with regard to the contextual factors that need to be addressed in such implementation contexts.

1.6 Thesis Structure

There are six chapters to the current thesis. Chapter 2 describes the literature review as a theoretical foundation to the current study and presents the research model. The research methodology is discussed in Chapter 3. Chapter 4 further presents the data analyses carried out. Chapter 5 presents the results of the research findings and discusses the hypotheses' results. Chapter 6 answers the research question guiding the current study, practical implications of the findings; and concludes the contributions of the study to knowledge and practice as well as addresses its limitations and offers recommendations for future research directions.

A critical review of literature on ERP implementation context is carried out in the next chapter (2) and key highlights, outcomes and gaps are pulled together to examine the research objective in relation to the moderating effect of ERP implementation context on the relationship between managers' ERP leadership competences and perceived client satisfaction.

2 Literature Review

This study makes a contribution to fields such as organizational change, business change, organizational leadership, programme and project management, information systems implementations and human resources by examining how an ERP implementation context (ERPIC) moderates the relationship between Managers' ERP Leadership Competences (MELC) and Perceived Client Satisfaction (PCSAT) on implementations across different ERP products and countries. The following literature review establishes the pertinent insights into the topic area as gained from several sources through a rigorous and critical review of the key literature identified to bolster the relevant points of discussion. For each of the arguments the rationale for the approach and key issues of the debate surrounding their development and use are discussed, based on their relevance to the research question being addressed. This Chapter is organised into three main sections. The first section sets the scene by examining the concepts associated with ERPIC, thereby providing an understanding of the research setting. The second section examines PCSAT while also considering other success measures researchers have employed in the literature. The third section explores MELC – reviewing literature and exploring the leadership competences required on ERP implementations; and the last section provides an overall summary.

The literature review follows a multi-disciplinary approach. Based on a combination of the research question and the gaps identified in the literature - keywords were derived and further used in the literature search which spanned published and unpublished materials across academic and practitioner journal articles, conference papers and academic textbooks. The keywords used for the literature search included: Enterprise Resource Planning Systems, ERP, SAP, Oracle, Cloud ERP, Emotional Intelligence, EI, Perceived Client Satisfaction, ERP and Perceived Client Satisfaction, Leadership, Programme management, Project management, ERP Project Management, ERP Implementation, Offshore Resources on ERP Implementation, Follower Commitment, Leadership Performance, ERP Culture. The literature utilised included peer reviewed academic papers - and due to the nature of the topic, which is very much practitioner-centric - practitioner materials. Moreover, potentially relevant journals were monitored until production of first draft of the current thesis in 2019.

In undertaking this research, it is understood that it is difficult to measure or reach consensus on what constitutes client satisfaction in general. However, through the literature review and points garnered from the studies of other researchers in the area variables are identified and

presented in the subsequent data analysis. It is also acknowledged that like some anglophone studies, the current literature review has focused only on literature available in English.

2.1 Introduction

The current research set out to gain an understanding of the relationship between Managers' ERP leadership competences and perceived client satisfaction and the moderating effect of context. It specifically reviews how context problems can be a complex hurdle and a hindrance to be circumvented during an ERP implementation and their effect managers' ability to achieve client satisfaction. As cited by Saxena & McDonagh (2019), user perception and user satisfaction (Chevers, 2018; Mekadmi and Louati, 2018) are deemed crucial for implementation success in both research literature and by the implementing organisations (Sumner, 2018).

A considerable amount of research has been conducted into critical success factors, or CSFs, for ERP implementations (e.g. Holland & Light, 1999; Sumner, 1999; Willcocks & Sykes, 2000; Ram & Corkindale 2014; Costa, Ferreira & Aparicio, 2016; Vargas & Comuzzi, 2019) and IT implementations in general (Reel, 1999; Marble, 2000; Shao, 2010). Such factors typically include top management support, sound planning, end user training, vendor relations, project champions, interdepartmental collaboration and communication and the like. The following sections will provide a review and critical analysis of studies in the relevant topics.

2.1.1 Program and Project Management

One accepted definition of program by academics and practitioners (Turner and Speiser, 1992; Reiss, 1996, 2003) was provided by Ferns (1991) who defined a program as "a group of projects that are managed in a coordinated way to gain benefits that would not be possible were the projects to be managed independently." Along the same lines Lycett, Rassau and Danson (2004) also define program management as the "integration and management of a group of related projects with the intent of achieving benefits that would not be realised if they were managed independently." Turner (2009a) asserted that the way to coordinate or integrate projects are referred to as programs or portfolios. Pellegrinelli (1997) asserted that program creates benefits through better organisation of the constituent projects and their underlying activities. Even though PMI (2017, p.14) provides support for the definitions provided, it also brings a slight nuance into its definition which explains the purpose of combining projects under

the banner of a program by defining program management as the application of knowledge, skills and principles to achieving the objectives and to obtain the benefits and control not available by managing program components individually. Hence, drawing attention to both - benefits to be achieved in so doing and providing the ability to control a pool of projects.

Crawford (2000) explained based on an in-depth review of literature, that the interest in the project manager role and aspects of competence in that role can be traced back to an article by Gaddis (1959) in the Harvard Business Review and another Harvard Business Review article by Lawrence and Lorsch (1967) on the 'New management job: the integrator'. Crawford attempted to approach the profiling of the competent project manager from a potentially more objective viewpoint, by gathering data on project management knowledge and practices, using established project management standards, and then relating this to separately derived ratings of perceived workplace performance. The analysis suggested there is little direct relationship between perceived workplace performance and performance against project management standards. Shown in Figure 2-1 is one of the most comprehensive project categorization systems was provided by Crawford, Hobbs & Turner (2005). They categorised projects using 14 attributes, and provided a further detailed categorisation system under each attribute. Two reasons were provided for why organisations need to categorise projects which are – firstly, to develop and assign appropriate competencies to undertake projects successfully (do them right); and secondly, to prioritize projects within an investment portfolio to maximize return on investment (do the right projects). Crawford et al. have however indicated that people using the map will need to use it as an aide-memoir and guide, and not as a definitive answer.

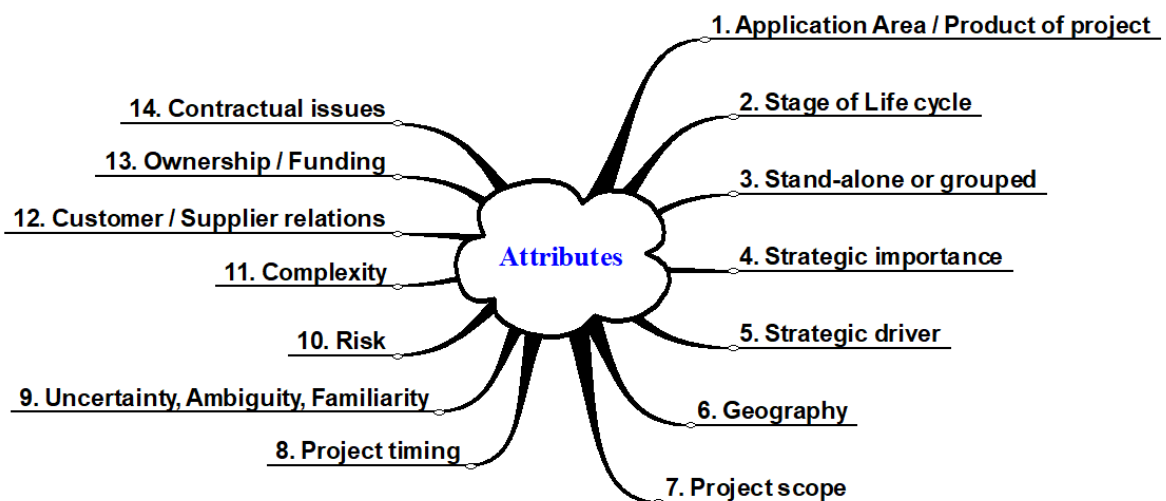


Figure 2-1: The map of attributes for building project categorization systems (from Crawford et al., 2005)

Project management is very much a leader intensive undertaking, as noted by Pinto et al., (1998). They asserted that for successful project leadership the efforts of the individuals involved must be negotiated to encourage them to engage in the numerous and diverse activities needed to promote project success.

PMI (2013) identified and described the link between project management and organisational governance. They explain that Projects (and programs) are undertaken to achieve strategic business outcomes, for which many organizations now adopt formal organizational governance processes and procedures. Organizational governance criteria can impose constraints on projects—particularly if the project delivers a service which will be subject to strict organizational governance. Because project success may be judged on the basis of how well the resultant product or service supports organizational governance, it is important for the project manager to be knowledgeable about corporate/organizational governance policies and procedures pertaining to the subject matter of the product or service. PMI (2013) identified and further described the relationship between Project Management and Organizational Strategy and explained that Organizational strategy should provide guidance and direction to project management—especially when one considers that projects exist to support organizational strategies. Often it is the project sponsor or the portfolio or program manager who identifies alignment or potential conflicts between organizational strategies and project goals and then communicates these to the project manager. If the goals of a project are in conflict with an established organizational strategy, it is incumbent upon the project manager to document and identify such conflicts as early as possible in the project. At times, the development of an organizational strategy could be the goal of a project rather than a guiding principle. In such a case, it is important for the project to specifically define what constitutes an appropriate organizational strategy that will sustain the organization.

Considering project performance in particular, Jiang & Klien et al. (2002) identified 10 ways to improve project performance which could be implemented by managers and project teams:

- 1) bypass an obstacle
- 2) cause people to stretch, not break
- 3) focus on the goal
- 4) follow a standardized process
- 5) learn from the past

- 6) maintaining ongoing communications
- 7) record the work being done
- 8) reuse previous work
- 9) seek buy-in from all involved
- 10) seek simplicity, not complexity, in goal and path

Though these improvement suggestions are directed at improving project performance, in the current researcher's view, a link may be drawn to client satisfaction since outcomes of these proposals may undoubtedly yield satisfied clients. The suggestion to follow a standardized process will bring about a good level of consistency in the mode of working during the implementation – however, the ability to adhere to this as well as the other suggestions would depend heavily on the context at play and the specific challenges to be circumvented.

Murray (2001) describes the nine factors for IT project success that he thinks can make or break IT projects:

- 1) appropriate senior management levels of commitment to the project
- 2) adequate project funding
- 3) a well-done set of project requirements and specifications
- 4) careful development of a comprehensive project plan that incorporates sufficient time and flexibility to anticipate and deal with unforeseen difficulties as they arise
- 5) an appropriate commitment of time and attention on the part of those outside the IT department who have requested the project, combined with a willingness to see it through to the end
- 6) candid, accurate reporting of the status of the project and of potential difficulties as they arise
- 7) a critical assessment of the risks inherent in the project, and potential harm associated with those risks, and the ability of the project team to manage those risks
- 8) the development of appropriate contingency plans that can be employed should the project run into problems
- 9) an objective assessment of the ability and willingness of the organization to stay the project course

Again, as with the previous list, in the current researcher's view a direct link may be inferred between these success factors and client satisfaction since outcomes of these proposals may undoubtedly yield satisfied clients. For instance, candid accurate reporting of the status of the project and of potential difficulties as they arise will set and align client expectations much early on and ensure late surprises are reduced.

2.1.1.1 Project Governance

According to PMI (2017), Project governance refers to the framework, functions, and processes that guide project management activities in order to create a unique product, service, or result to meet organizational, strategic, and operational goals. There is no one governance framework that is effective in all organizations. A governance framework should be tailored to the organizational culture, types of projects, and the needs of the organization in order to be effective.

The United Kingdom's Association for Project Management (APM) has a special interest group (SIG) looking at the governance of project management, they have specific focus on the overlap between the board and project management (Peng, Junwen & Huating, 2007). "Governance refers to the set of policies, regulations, functions, processes, procedures and responsibilities that define the establishment, management and control of projects, programmes and portfolios." APM Body of Knowledge (2019). APM Body of Knowledge (APMBoK) elucidated that the aims of good corporate governance are to ensure:

1. A clear link between corporate strategy and project objectives:
 - a. In the definition of the project
 - b. In the benefits and project governance roles
 - c. In portfolio and program management
2. Clear ownership and leadership from senior management
3. Engagement with stakeholders
4. Organizational capability
5. Understanding of and contact with the supply industry at a senior level
6. Evaluation of project proposals based on their value to the organization not capital cost
7. A focus on breaking down development and implementation into manageable structures

The APM further explain that poor governance results in:

- No link between corporate strategy and projects
- Lack of ownership of projects and their results
- Poor engagement with stakeholders
- Poor enterprise project management capability
- A lack of engagement with suppliers

- Poor evaluation of project proposals
- Lack of focus on breaking a project down into manageable steps

The elucidation of the good and poor approaches to governance above also provide some guidance as to what to do right as well as the pitfalls to avoid during the implementation process. PMI (2017) have suggested that the project manager should consider the varying levels of governance that may be required and within which the project will operate, as well as considering the culture of the organization.

2.1.1.2 Power and Influence

Leadership and management are ultimately about being able to get things done. Certain skills and qualities help the manager achieve the implementation goals and objectives. At the root of many of these skills and qualities is the ability to deal with politics. According to PMI (2017), politics involves influence, negotiation, autonomy, and power. Politics and its associated elements are not “good” or “bad,” “positive” or “negative” alone. The better the project manager understands how the organization works, the more likely he or she will be successful. PMI elucidated that the project manager observes and collects data about the project and organizational landscapes. The data then needs to be reviewed in the context of the project, the people involved, the organization, and the environment as a whole. This review yields the information and knowledge necessary for the project manager to plan and implement the most appropriate action. The project manager’s action is a result of selecting the right kind of power to influence and negotiate with others. Exercise of power also carries with it the responsibility of being sensitive to and respectful of other people. The project manager’s action results in the right people performing the activities necessary to fulfil the project’s objectives.

Yukl (2009) posited that effective managers influence subordinates to perform the work effectively, they influence peers to provide support and assistance, and they influence superiors to provide resources and approval of necessary changes. A successful leader would inspire and motivate the implementation contributors both internally and externally to bring their best to the implementation and empower them to make tough decisions for the success of the project. Umble, Haft, and Umble (2003) indicated successful implementations need strong leadership, heavy participation and support of top executives in the organization. Yukl listed several influencing tactics including the Coalition tactics - useful when attempting to gain support from senior management. He stated; coalitions are an indirect type of influence tactic wherein the agent gets assistance from other people to influence the target person. He gave examples of coalition partners as including peers, subordinates, superiors, or outsiders (e.g.

clients and suppliers). He also cited - trading of favours needed to accomplish task objectives to be a common form of influence among peers in organizations (Cohen and Bradford, 1989; Kaplan, 1984; Kotter, 1985).

2.2 Enterprise Resource Planning (ERP) Systems

2.2.1 Brief ERP History

Material Requirement Planning (MRP) Systems were developed for products planning in the 1970s followed by Manufacturing Resource Planning (MRP II) Systems developed in late 1980's to emphasis optimized manufacturing processes to form a character-based ERP (Gibson, Holland and Light, 1999). In 1990, based on MRP and MRP II, ERP systems were developed to integrate business processes such as manufacturing, distributions, accounting, finance, human resources, inventory management, and project management (Al-Mashari, Al-Mudimigh & Zairi, 2003). Keller (2001) explained that the main purpose was to fully integrate all the processes needed in an organization under a single umbrella of software applications.

In the early 1990s, MRP II was built as an improvement on MRP after adding the human resource planning module into the system (Kale, 2016). MRP II was later supplanted by ERP (Umble et al., 2003). In the late 1990's, Holland and Light defined ERP software as one which automated organizational activities throughout finance, human resource, manufacturing, sales, and supply chain to facilitate decision-making, cost management, supply and managerial control. In the early 2000's, the definition of ERP further evolved with defining ERP as a computer-based system which was designed to process organizational transactions, integrate real-time planning and response of customer inputs, and manage production (O'Leary, 2000). Additionally, Al-Mashari et al. (2003) carried out a study on ERP and further defined ERP software as a central database system using network communication protocols to exercise business enterprise information, providing a central application which is used enterprise-wide by end users' business-systems, organizational applications, and vendors.

Hernandez (2014) wrote that the term ERP was originated by the Gartner Group and posited that the system was meant to integrate processes of an entire organisation fundamentally under a single software application. The definition continued to evolve based on what ERP systems had to offer and how the system was used. For example, in the late 1990's, Holland and Light defined ERP software which automated organizational activities throughout finance, human resource, manufacturing, sales, and supply chain to facilitate decision-making, cost management, supply and managerial control.

In sum, an enterprise resource planning system provides a unified view of a company and enables its management team to be more effective and ultimately helping the business to be more efficient. A successful ERP system provides the opportunity to improve the business intelligence aspect of a company, reduce cost, streamline business processes and ultimately enhance inter-department collaboration (Davenport, 2000; Lengnick-Hall, et al., 2004).

2.2.2 ERP Systems

ERP is defined by Parr & Shanks (2000a p.1) as “comprehensive packaged software solutions which aim for total integration of all business processes and functions”. Beheshti (2006) provided a definition of ERP as a system that is designed to automate organizational processes, activities, transactions, response of customer inputs, and manage production in real-time, thereby providing a central application to be used enterprise-wide by end-users as well as vendor’s where integration has been provided. Leading ERP vendors include SAP, Oracle and Microsoft Dynamics (Elbahri, Al-Sanjary, Ali, Naif, Ibrahim & Mohammed, 2019). From the middle to end of the twentieth century, the ERP system has been defined by several researchers. According to Beheshti (2006), ERP is a set of modules or business applications that linked various organizational and business units. These systems tend to combine customer relationship management (CRM), inventory, finance, human resources (HR), manufacturing, and sales, into a single system using a common platform, such as SAP, Oracle, Peoplesoft and Microsoft. Beheshti (2006) further explains that the number of modules implemented is dependent on the business needs.

According to Holland and Light (1999, p.8) ERP systems are the most common IT strategy for all organizations. They explained that ERP software automates core corporate activities, such as manufacturing, human resource, finance, and supply chain management, by incorporating best practices to facilitate rapid decision-making, cost reductions, and greater managerial control. They further asserted that the mentioned factors make ERP software integration complex, because consensus is required from an entire enterprise to reengineer a core business process and take advantage of the software (Davenport, 1998). Davenport further elucidated that ERP system improves business performance because these types of solutions provide a complete integration of all the business processes in an organization.

Today Information technology (IT) is a well-known term across all industries. It reflects the loading and integration of identified sections of a company’s data, using relevant computer

hardware and software that provide useful functionality to be leveraged in improving business processes. An Enterprise Resource Planning System (ERP) implementation is more multifaceted than standard IT projects, chiefly because it tends to impact an entire organisation and its functional areas. It is built to encapsulate all of an organisation's relevant data and functionality onto a landscape, allowing the storage, cross-interrogation, retrieval and management reporting of data at the different levels of an organisation to aid in performing regular business activities. An Enterprise Resource Planning (ERP) implementation is a significant intervention in organizational life. Currently, it is one of the most challenging issues for practitioners and researchers in the IS field (Pozzebon, 2000). ERP systems have been found to have conceptual links with almost every area of information system (IS) research (Markus and Tanis, 1999). Thus, the divergent definitions and perspectives associated with the ERP-organization linkage depend on how IS researchers conceptualise and treat the linkage between IT/IS and organizations. For the purposes of the current research, the working definition of ERP is taken from Beheshti (2006), who describe ERP as a set of modules or business applications that link various organizational and business units - combining customer relationship management (CRM), inventory, finance, human resources (HR), manufacturing, and sales, into a single system using a common platform, such as SAP, Oracle, Peoplesoft and Microsoft.

2.2.3 ERP Implementations

The term implementation is used in various ways in the context of information systems.

Implementation

“is sometimes used to mean technical implementation, namely ensuring that system development is completed and that the system functions adequately in a technical sense. At other times it is used to refer to the human and social aspects of implementation, such as that the system is used frequently by organizational members or that it is considered valuable to them in their personal work activities or coordination with others” (Walsham, 1995a, p. 210).

In either case the implication is that the implementation is at some point completed (Sabherwal et al., 1995). ERP implementations are usually large, complex projects, lasting nine to eighteen months and involving large groups of people, including internal and external resources, working together under considerable time pressures.

ERP implementation can reap enormous benefits for successful companies—or it can be disastrous for organizations that fail to manage the implementation process. Dawson (2014b) posited that the purpose of organizations implementing an ERP system is to improve business performance, better integrate systems across multiple locations, and have secured information assurance. The usual expectation of the managers on such a project is that they deliver the finished system to time, cost and quality. Not surprisingly, many of these implementations turn out to be less successful than originally intended (Davenport, 1998; Avnet, 1999; Buckhout et al, 1999).

2.2.4 ERP Solutions and Trend

There has been much interest by both small and large corporations to understand the ERP market better. Jacobson, Shepherd, D'Aquila and Carter (2007) carried out market research for Allied Market Research (AMR – bought by Gartner Inc. in 2009) and explained that traditionally, the ERP market has been segmented by the size of customers the vendors targeted: large enterprise vendors, mid-market vendors, and small business vendors. It was thought that the same vendors and products couldn't serve multiple segments, but that notion has been disproved recently. Jacobson et al. argued that the traditional large enterprise vendors have started to attack the market perception that their products are too big and complex, and they're making inroads into the midmarket through rapidly growing reseller channels. The midmarket is one of the key areas where the larger enterprise vendors believe they have an opportunity to sustain or accelerate growth, even as ERP opportunities at the higher end of the market decline.

The large enterprise vendors such as SAP and Oracle have also come out with lower cost ERP solutions for small to medium size companies, representing an even bigger challenge for the mid enterprise vendors (Ray, 2011). SAP has brought out solution offerings such as "All in One" for the mid-segment of the market and "Business One" for the small market.

Furthermore, the recent advent of web and cloud-based software such as Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS) have reduced ERP system deployment cost and made ERP systems generally more affordable to small and medium sized enterprises. This has also directly triggered the entrance of cloud computing. Nakul (2012) described Cloud ERP as an approach to enterprise resource planning that use cloud computing platforms and services to make business process transformation more flexible. These technologies purport to offer low initial cost, low IT resources, low time

spent on implementation, thereby facilitating ERP system implementations, making them quicker and easier to implement. Furthermore, the rapid developments in technology and in particular mobile computing has enabled the advent of mobile ERP which makes all ERP functionalities available on various types of mobile phones and wireless devices. Elbahri, Al-Sanjary, Ali, Naif, Ibrahim & Mohammed (2019) provided a comparison of different cloud ERP systems, specifically focusing on the offerings by SAP, Oracle and Microsoft Dynamics. They posited that ERP systems are the backbone of many companies, allowing organisations to centrally collect business data from all departments into a single database – thereby allowing for both business and market related internal analysis and analytics, which in turn inform strategic decision making. Elbahri et al. (2019) noted that the growth of cloud computing has led to the emergence of cloud-based ERP – allowing the maintenance of the systems to be managed centrally by a provider instead of businesses hosting their own equipment – thereby saving on cost of ownership including maintenance of the equipment.

The shift of the ERP market from on-premise to cloud services has been reviewed by researchers (Snellman, 2017; Elbahri et al., 2019). Recently, Gartner (2018), a leading research and advisory company across industries and technologies observed that the market for ERP suites for product-centric enterprises is shifting from on-premises deployments to cloud services. They carried out a vendors' evaluation from 2017 to 2018, focusing on ERP systems that are offered in a cloud services application deployment, covering midsize enterprises across all geographies with annual revenue between approximately \$50 million and \$1 billion. In carrying out their research, Gartner (2018) expressed that they have used several sources of information with primary sources which included: discussions with over 600 end-user clients about their ERP application strategies in 2017 and 2018 - while also incorporating online survey responses from vendor-identified reference customers in May 2018. Based upon this research, the Magic Quadrant for Cloud ERP for product-centric midsize enterprises was published (Gartner, 2018). They stated that:

“ERP represents the single largest category of enterprise software spending, at \$37.3 billion in 2018.”

Gartner forecasts that this figure will grow at an annual rate of 6.8% through 2022 on a constant currency basis. Gartner's Magic Quadrant for Cloud ERP for Product-Centric Midsize Enterprises shows that Oracle, SAP and Microsoft Dynamics have been identified as having the highest ability to execute – with Oracle's ERP Cloud offering identified amongst the midsize enterprises as a leader. SAP's cloud offering (*Business ByDesign*) was identified as a niche player while Microsoft's Dynamics 365 was presented as visionary, Gartner (2018)

Regarding large product-centric enterprises (those with revenue of more than \$5 billion), Gartner noted that they have also begun to deploy operational cloud solutions. They defined product-centric enterprises as those that physically manufacture, sell and/or distribute products – typically either manufacturing companies or distribution companies. Gartner also provided a definition for Operational ERP functionality as: Supply-chain- and manufacturing-related functionality, such as demand management, inventory management, supply chain procurement, manufacturing control capabilities and distribution/logistics.

Gartner have further projected that by 2021, 70% of all new midmarket cloud ERP application projects for product-centric enterprises will be public cloud implementations.

In summary, ERP, through the years moved from traditional MRP to ERP and now cloud and mobile ERP systems. The ERP market is undergoing a generational technology shift, driven by the advent of cloud computing (Gartner, 2018). At the current point, with the rapid advancements happening in the area of technology, it is expected that the shape of ERP will continue to progress dynamically as it adapts to the very rapidly changing technological space.

2.2.5 ERP Benefits

Koch (1996) asserted ERP system software packages are highly integrated, complex systems for businesses, and thousands of businesses are running them successfully worldwide (Koch, 1996). IT has been identified by several researchers as an important area in which an organisation can create competitive advantages (Powell & Micallef, 1997; Igbaria et al., 1998; Shuit, 2004; Yang & Su, 2011). Organisations attempt to use IS projects as enablers to perform business activities for providing better products or services.

There have been many studies that have focused on reviewing the benefits of ERP. Gattiker and Goodhue (2000) identified the benefits of ERP and citing from them, those benefits can be clustered into four categories as follows:

1. Most companies implement an ERP system to fully integrate its business processes and provide a better flow of data and information across all the organization (Davenport, 1998). Similarly, Goodhue, Wybo, and Kirsch (1992) discuss that integration and standardization among all the areas in an organization improves the communications and help to better coordinate all the business units.

2. The standardisation and integration process across all the areas in an organization provides the mechanism to centralize all the administrative activities, providing the opportunity to eliminate labour and minimize costs (Davenport, 1998).
3. According to Ross (1998), the successful implementation of an ERP offers the ability to reduce hardware and software maintenance, and increase the capability to deploy new applications as well as newer functionality.
4. Lastly, a successful deployment of an ERP provides the ability to move the organisation away from antiquated legacy systems, inefficient business processes and eliminate compliance issues (Cooke & Peterson, 1998).

Other researchers who have reviewed the benefits of ERP include Yang & Su (2011) who conducted a study which showed the benefits of ERP systems on the organisation. They outlined the following benefits as they relate to the different levels:

Operational Benefits

- The operational benefits are those arising from automating cross functional processes
- The IT infrastructure benefit consists of the typical IT department benefits arising from reduction in cost of maintaining legacy systems.

Tactical Benefits

- The managerial category includes benefits that arise from the use of data to better plan and manage production, manpower, inventory and physical resources and from the monitoring and control of financial performance of products, customers, business lines and geographic area.

Strategic Benefits

- The strategic benefits category focuses on the benefits that arise from the system's ability to support business growth
- The organisational benefits category captures the benefits derived from facilitation business learning, empowerment of staff and higher employee morale and satisfaction.

An ERP system could potentially improve the mechanisms of how business is done by providing more accurate real time data and information throughout the organization's supply chain, in addition to enabling the enterprise to be more efficient and competitive (Lengnick-Hall, Lengnick-Hall, and Abdinnour-Helm, 2004).

Furthermore, several authors have discussed the positive impact of an ERP implementation across small, medium and large organisations. The following were identified:

- ERP system is used as a tool to gain a competitive edge (Ram et al., 2014)
- Cohesion of enterprise-wide information integration and control over all business processes in the entire organization (Addo-Tenkorang & Helo, 2011)
- Organisations use ERP systems to improve business performance, gain efficiency and profitability and/or replace legacy systems to achieve a competitive advantage over rivals (Amid et al., 2012; Sari et al., 2012)
- When an ERP system is successfully implemented, the implementing organization can expect to reduce cost, enhance inter-department process cohesion, and streamline business processes (Hernandez, 2014).

2.2.6 ERP Failures, Problems and other Challenges

An Enterprise Resource Planning (ERP) implementation is a significant process that fully pervades the life of an organization during and after its implementation. It has been reported as one of the most challenging issues for practitioners and researchers in the IS field (Pozzebon, 2000). These systems have been found to have conceptual links with almost every area of information system (IS) research (Markus and Tanis, 1999). Thus, the divergent definitions and perspectives associated with the ERP-organization linkage depend on how IS researchers conceptualize and treat the linkage between IT/IS and organizations. According to The Gartner Group, 70 percent of all ERP projects fail to be fully implemented, even after three years (Gillooly, 1998). Typically, there is no single culprit responsible for a “failed implementation”, and no individual reason to be credited for a successful one. Even the definitions of failure and success are grey areas, lending to very disparate interpretations.

From an extensive study of empirical research on the topic, Wittaker (1999) reported that less than fifty percent of large-scale IT projects achieve their projected results. According to Mearian and Songini (2002), one of the largest supermarket chains in Canada abandoned its two years enterprise resource planning (ERP) system implementation with very large losses. Along the same vein, Scott and Vessey (2002) reported that Foxmeyer Drug Company went bankrupt after spending \$65 million to implement an ERP system and were unable to deliver the desired results. The challenge of an ERP system implementation is that it might go beyond its allocated budget, scope, and time (Kerzner, 2002). The \$400 million ERP system upgrade

for Nike, Inc. that caused \$100 million in lost revenue, and a 20% stock drop in 2000, ended up in one of the worst ERP implementations in the retail industry (Koch, 2004). Other studies have provided further detail on the type of potential challenges to expect when implementing ERP, such as Ptak and Schragenheim (2005) who posited that 75% to 90% of ERP system implementations will not achieve the identified business results discussed during the planning phase of the project. These are bold claims which may be partly interpreted and linked to the scope creep phenomenon – the concept that the end product is somewhat modified based on what could be ‘fresh ideas’ continuously during the implementation journey – the result of which may, at times, be a product bearing little resemblance to what was originally signed off and agreed as the functionality and features required in the system. Farhoomand (2006) reported that, in the early 90s, Kmart Inc. made an attempt to implement an SAP ERP system, but eventually had to write off US\$130 million project as a result of planning issues that stalled, then finally halted the commencement of the project. Neufeld, Dong and Higgins (2007) reported that the failure rate of ERP implementations in retail organisations is rather high, and also a common outcome for many IT organisations.

Over the years, each of these types of failures have had different consequences on the implanting organisations and in some cases impacted the wider economy. Drawing on the different issues highlighted, the question of, what phase of the ERP implantation lifecycle did the possibility of a failure either begin to display tell-tale signs, or become evident, and what could have been done earlier. This implies that project leaders must strive to mitigate failure at all lifecycle phases during ERP implantation, also meaning that the success or failure did not simply happen at the end of a project but is a cumulative phase by phase aggregation of the performances at the different phases. Furthermore, perhaps there is argument to review success from a different lens that considers client satisfaction.

2.2.7 ERP Lifecycle Phases

ERP implementations, just like projects, are designed to be carried out in stages within a lifecycle. While vendors such as SAP and Oracle have provided their own suggestions based on what they refer to as best-practice, researchers have also conducted studies on ERP stages and put forward their own proposals. One such endeavour is found in the work of Ross and Vitale (2001) who posited that the stages of an ERP implementation can be regarded as a journey with five stages.

- i. Design (the company has to decide on two important design questions: process change and process standardization)

- ii. Implementation (the go-live, after which most companies experience a decline in their performance)
- iii. Stabilization (in this phase the company attempts to clean up its processes and data and adjust to the new system and organizational changes)
- iv. Continuous Improvement (adding new functionality and new modules or bolt-ons to the ERP system from third-party vendors)
- v. Transformation (the company may transform itself).

A further attempt to delineate ERP implementation in terms of stages Dantes and Hasibuan (2011) have identified five stages of an ERP system implementation, namely: project preparation, technology selection, project formulation, implementation, and deployment. They define project preparation as the state where goals and objectives, project time and budget, identification of organization maturity level, evaluation of IT investment, business process reengineering, and clear knowledge of existing technology and systems in the organization occurs. Technology selection is defined as the set of hardware, database, and software applications used to support the ERP system, along with a determined steering committee, consultants, methodology and strategy, and a project team. Project formalization is defined as the business blueprint which is used in the development and implementation in developing the system implementation plan, business, and functional requirements. Implementation and deployment are defined as the enterprise system customizations and configurations which make the system function in production. Deployment is defined as operating without issues and stabilizing the work environment for supporting users, and getting the results as intended without unexpected interruptions (Dantes and Hasibuan, 2011).

In their study, Esteves and Pastor (2001) analysed the relevance of critical success factors along SAP implementation phases. By applying a process quality management method and the grounded theory method, they developed a matrix of critical success factors versus Accelerated SAP (ASAP) processes; and further evaluated the relevance of critical success factors along the five phases of ASAP, specifically of those ones related with organizational perspective. They posited that there is practical evidence that CSFs do not have the same importance along the various phases of an SAP implementation project and attempted to develop a theoretical framework that describes the distribution and relevance of CSFs along the ASAP phases. They explained ASAP was advocated to enable new customers to utilize the experience and expertise gleaned from thousands of implementations worldwide, also known as 'best practice'. According to Esteves and Pastor, the accelerated SAP (ASAP)

implementation methodology is a structured implementation approach that provides ready defined roadmaps, and documentation for various stages of the implementation to aid managers in achieving an accelerated implementation. The key phases of the ASAP methodology, also known as the ASAP roadmap, are: project preparation, business blueprint, realization, final preparation, go live & support. They further described the relevant CSFs for each stage as follows:

- In phase 1 (Project Preparation), the most relevant CSFs are sustained management support, project champion role and formalised project plan/schedule. The outcome of this phase is the project charter document.
- In phase 2 (Business Blueprint), the most relevant CSFs are project champion role, effective organisational change management and user involvement. The outcome of this phase is the creation of the implementation Business Blueprint, which is a document describing the scope of work and the business' future state after the implementation is complete.
- In phase 3 (Realization), the most relevant CSFs are adequate software configuration, project champion role, and user involvement. In this phase the configuration of SAP system begins, that is why the adequate ERP configuration factor is so important as well as the involvement of users. They help in the system parameterization.
- In phase 4 (Final Preparation), the most relevant CSF is the project champion role.
- In phase 5 (Go Live & Support), the most relevant CSFs are project champion role, sustained management support and strong communication inwards and outwards.

From the literature, these studies (Ross and Vitale, 2001; Esteves and Pastor, 2001; Dantes and Hasibuan, 2011) all describe the phasing concept in ERP implementations and the very high efficacy it provides to the running of an ERP implementation project. Based on the current researcher's experience which may be limited, in reality and in relation to the specific challenges experienced during an implementation, a combination of these approaches would normally be in use. It tends to be that when there are serious challenges during a phase, a previous phase may need to be revisited and resolved.

Understanding of the implementation of ERP may be enhanced by a longitudinal study. Plant and Willcocks (2007) examined two longitudinal studies of international ERP implementations. Plant and Willcocks decided to observe the different stages of project development and identify the perceptions of the critical success factors at each stage. Their finding was that there was a shift in emphasis from stage to stage. They employed a case study approach to follow two companies over an 18-month period. They utilised the CSFs developed by Somers and Nelson

(2001) which they believed was a sound piece of research. The longitudinal examination of the two case studies identified the need for project team leaders to reinforce the need for careful planning regarding process change management aspects of the implementation at each stage.

Over the years, each of these types of failures has had different consequences, but in general, they are important indicators that project leaders must understand that not all stages of a project are to be handled the same way. Different types of problems must be expected and commensurate remedies identified and applied for mitigation at different stages of ERP implementation.

2.2.8 ERP Literature Knowledge Gaps

The complexities underlying ERP implementations provided in the literature have been reviewed in this section (i.e. 2.2) and the major challenges identified in literature have been drawn out. Several needs have been shown such as the need for a manager who can deliver the finished system to time, cost and quality (Davenport, 1998; Avnet, 1999; Buckhout et al, 1999). Furthermore, the manager needs to have the knowledge and skills to manage the implementation lifecycle phases, such as the five stages of ERP implementation (Ross and Vitale, 2001; Dantes and Hasibuan, 2011), implying that the usage of those knowledge and skills at each stage can further contribute to the final implementation outcome. Moreover, project leaders must strive to mitigate failure at all lifecycle phases during ERP implantation, also meaning that the success or failure would usually not simply happen at the end of a project but is an incremental / cumulative phase by phase aggregation of performance in the different phases. However, the direct linkage between the managers' leadership competences discussed in the current section and perceived client satisfaction specifically has not been identified in the literature – though user perception and user satisfaction have been highlighted and deemed to be crucial in relation to implementation success in the literature (Saxena & McDonagh, 2019; Sumner, 2018; Chevers, 2018; Mekadmi and Louati, 2018).

2.3 ERP Implementation Context

The contingency leadership theory is further discussed in section 2.3.6, however it is worth a quick mention under the current topic. The contingency leadership theory depends on two interacting factors, and for a leader to be successful in an environment, the leaders' behavior and the conditions must perfectly align with the situation and the environment (Fiedler and

Chemers, 1974). Along the same lines and in relation to project management, Crawford (2005) noted that an important issue in considering project management competence is the nature of projects and the context within which they are conducted and cited Einsiedel (1987) who contends that project management effectiveness “depends on a wide variety of factors, some of which have little or nothing to do with the managers’ personal ability or motivation”. Thamhain and Wilemon (1977) maintain that the environmental context of the project has to be examined before any conclusions can be drawn about project management effectiveness. Drawing on these, it appears then that even though several factors within an ERP implementation call upon the competence of the manager, several other factors also draw from the context within which the implementation operates, such as: organisational support, organisational structure, organisational stability as well as dynamics, and even country stability in some cases. All these imply there are always factors which are partially or fully out of the manager’s control to directly affect, but which nonetheless have an impact on the success or failure of their implementation. The importance of contextual factors has also been explored in several studies such as Pellegrinelli et al. (2007) who found that contextual factors in program management often draw much of program managers’ attention and efforts and cause them to make compromises and re-shape their programs. This was confirmed by Shao (2010), who showed that the relationship between program managers’ leadership competences and program success was moderated by the contextual factors in the program.

Other researchers have acknowledged the important dependency on factors outside of the project manager’s direct control, including Garcia-Sanchez and Perez-Bernal (2007) who explained the CSF categories on ERP Projects as Human factors, Organisational factors and Technological factors. Hyvari (2006) concluded that “there is not enough knowledge about the dependencies between organizational context and CSFs in project management” (p. 33).

At the time of writing, the topic of Brexit is affecting very many ERP implementations, due to the lack of a clear guidance and direction, which is impacting organisations’ financial commitment and investments. The effect is that managers are having to be more expedient with their budgeting and adapt their implementations accordingly. This further illustrates the type of expectations placed on the competent manager, requiring the understanding those factors within their control, as well as factors they do not control and how to influence individuals in the context who are better positioned to act on them.

The Project Management Institute (PMI) defines the project management body of knowledge (PMBOK) as a term that describes the knowledge within the profession of project management. The project management body of knowledge includes proven traditional practices that are widely applied as well as innovative practices that are emerging in the profession (PMI, 2017: p.1). PMI (2017) describes the role of the project manager as the person assigned by the performing organization to lead the team that is responsible for achieving the project objectives. It further explains that the role of a project manager is distinct from a functional manager or operations manager, as typically, the functional manager is focused on providing management oversight for a functional or a business unit, and operations managers are responsible for ensuring that business operations are efficient (p. 52). The project manager works closely and in collaboration with other roles, such as a business analyst, quality assurance manager, and subject matter experts to achieve the project objectives.

An ERP implementation is implemented by a project team. PMI (2013) explains that the project team comprises the project manager and the group of individuals who act together in performing the work of the project to achieve its objectives. Included are: individuals from different groups with specific subject matter knowledge or with a specific skill set to carry out the work of the project. The structure and characteristics of a project team can vary widely, but one constant is the project manager's role as the leader of the team, regardless of what authority the project manager may have over its members. Project teams include roles such as: Project management staff, Project staff, Support experts, User or Customer representatives, Sellers, Business partner members and Business partners. These roles are further described in Table 2-1

Table 2-1: Project Team Roles

Team Members	Role
Project management staff	The members of the team who perform project management activities such as scheduling, budgeting, reporting and control, communications, risk management and administrative support. This role may be performed or supported by a project management office (PMO).
Project staff	The members of the team who carry out the work of creating the project deliverables.
Supporting experts	Supporting experts perform activities required to develop or execute the project management plan. These can include such roles as contracting, financial management, logistics, legal, safety, engineering, test, or quality control. Depending on the size of the project and level of support required, supporting experts may be assigned to work full time or may just participate on the team when their particular skills are required.
User or Customer Representatives	Members of the organization who will accept the deliverables or products of the project may be assigned to act as representatives or liaisons to ensure proper coordination, advise on requirements, or validate the acceptability of the project's results.
Sellers	Sellers, also called vendors, suppliers, or contractors, are external companies that enter into a contractual agreement to provide components or services necessary for the project. The project team is often assigned the responsibility to oversee the performance and acceptance of sellers' deliverables or services. If the sellers bear a large share of the risk for delivering the project's results, they may play a significant role on the project team.
Business partner members	Members of business partners' organizations may be assigned as members of the project team to ensure proper coordination.
Business partners	Business partners are also external companies, but they have a special relationship with the enterprise, sometimes attained through a certification process. Business partners provide specialized expertise or fill a specified role such as installation, customization, training, or support.

Source: Adapted from PMI (2013, p.36)

Holland & Light (1999) developed a framework to help managers successfully plan and implement an ERP project, and in the process introduced a critical success factors model showing strategic and tactical factors. Holland & Light (1999) noted that approximately 90 percent of ERP implementation projects are either 'late or over budget'. This was supported by Martin (1998). They believed it may be due to poor cost and schedule estimations or changes in project scope rather than project management failure (Holland & Light, 1999). This implies that at a project manager's best, they can only succeed on ERP implementations 10

percent of the time and hence, the failure of a project is not necessarily the failure of a project leader.

Complexity in ERP has been noted by Holland & Light (1999) who further explained that the factors that make ERP implementation complex is consensus required from an entire enterprise to reengineer and integrate core corporate activities such as manufacturing, human resource, finance, and supply chain management, incorporating best practices to facilitate rapid decision-making, cost reductions and greater managerial control (Davenport, 1998). Holland & Light noted that ERP implementation involves a mix of business process change and software configuration to align the implemented software with the business processes (Holland & Light, 1999, p.31). Their critical success factors under the category 'strategic' include legacy systems, business vision, ERP strategy, top management support and project schedules and plans. The 'tactical' factors are; client consultation, personnel, business process change (BPC) and software configuration, client acceptance, monitoring feedback, communication and trouble-shooting. Holland & Light (1999) employed two case examples from a research sample of eight companies. They used case study analysis to highlight the critical impact of legacy systems upon the implementation process and the importance of selecting an appropriate strategy (p.31).

Parr and Shanks (2000b) presented a project phase model (PPM) of ERP implementation projects that was a synthesis of the different models they found available for ERP implementation. They employed two case studies of ERP implementation, one successful and the other unsuccessful, within the same organisation to analyse and report to draw out the critical success factors (CSFs) required within each of their identified project phases. Their aim was to analyse the differences between the two cases. The three project phases identified were planning, project and enhancement. These phases could be otherwise interpreted as pre-project, project and post-project phases. Parr and Shanks (2000b) identified that critical to a successful project are, the early appointment of an experienced 'champion' with clear responsibilities and the partitioning of a large implementation into several smaller implementations identified as 'vanilla' implementations. In ERP context, the term 'vanilla' is used to refer to the concept of using the functionality provided by the software provider (e.g. SAP CRM) without making much development changes to it. In this context by Parr and Shanks, the term 'vanilla' has been used inappropriately to refer to a 'smaller' implementation. This could be misleading to the reader.

From the current author's experience, which is limited and may contain some bias, having worked on several ERP implementations across industries and cultures, it may be said that the impact of context and its dynamics to a project is a crucial determinant of success or failure. Within the context are individuals and stakeholders whose expectations may be 'high' or 'low' depending on several factors including organisational stability, identified by Shao (2010) and culture.

The project phase model (PPM) was used by Parr and Shanks as a 'lens' for understanding ERP implementation projects by highlighting the differences between two cases within an organisation. They observed the organizational learning that occurred during the unsuccessful project and cited the early appointment of an experienced 'champion' with clearly defined responsibilities as a critical factor to the successful project. However, it may be said that the two cases being compared were unequally matched since the second project was also implemented within the same organisation.

Due to the challenges surrounding contextual issues on ERP implementations, some researchers have been critical of ERP. Skok and Doringer (2001, pg.5) illustrate that "ERP is designed by having in mind the universalism culture" with its focus on core competence, low cost strategies and mass production. Similarly, Allen and Kern (2001) criticize this universal business culture of the ERP system and consider it as an "ideology of the private sector."

To further provide a better understanding of ERP context, Van Scoter (2011) studied the impact of contextual factors on critical success factors on both Enterprise Resource Planning (ERP) and Electronic Health Record (EHR) implementations. She observed that CSFs have not typically included contextual details of the projects studied even though researchers have suggested that CSFs can be affected by contextual details. Her survey used included questions related to eight contextual variables for ERP projects and 11 contextual variables for EHR system projects. Data were collected on 17 ERP projects and 26 EHR system implementation projects in 43 different organizations. She brought together project characteristics and organizational factors to define contextual factors. Citing the contextual factors identified in previous studies, Table 2-2 was presented.

Table 2-2: Contextual factors identified in previous projects

Authors / Project Type	Organisation and Project Characteristics
Baccarini (1996) PM model	<ul style="list-style-type: none"> • Organizational (by differentiation and by interdependency) • Technological (by differentiation and by interdependency)
Balachandra & Friar (1997) New Product Development	<ul style="list-style-type: none"> • Level of technology (high or low) • Newness to the market (existing or new) • Innovation (radical or incremental) • These 3 dimensions form a cube with 8 levels
Williams (1999) PM model	<ul style="list-style-type: none"> • Structural uncertainty (by number of elements and by interdependency) • Uncertainty (in goals and in methods)
Shenhar et al. (2001) PM model	<ul style="list-style-type: none"> • Technological uncertainty (by 4 levels, low, medium, high and super) • System scope (by 3 levels, assembly, system and array)
Jaafari (2003) PM model	<ul style="list-style-type: none"> • Project complexity (either high or low) • Environmental complexity (either high or low) • These 2 factors form 4 levels: LL – Ad hoc model; LH – Bureaucratic model; HL – Normative model; HH – Creative-reflective model
Maylor (2003) from Maylor et al. (2008) PM model	<ul style="list-style-type: none"> • Organizational (people, depts., orgs, locations, nationalities, languages, time zones involved, level of organization buy-in and authority structure) • Technical complexity (tech novelty, of system, interface and uncertainty) • Resource complexity (scale of project/resources)
Xia and Lee (2004) IT/IS Projects	<ul style="list-style-type: none"> • Organizational/Technological • Structural/Dynamic • These factors form 4 levels: Structural_Org; Structural_IT; Dynamic_Org and Dynamic_IT
Shenhar et al. (2005) NASA projects	<ul style="list-style-type: none"> • Novelty (derivative, platform, and breakthrough) • Technology (low-tech, medium-tech, high-tech and super high-tech) • Complexity (assembly, system, array) • Pace (regular, fast/competitive, time-critical and blitz)
Vidal and Marle (2008) PM model	<ul style="list-style-type: none"> • Organizational complexity (by project system size and system variety, and interdependencies in system and elements of context) • Technological complexity (by project system size and system variety and interdependencies in system and elements of context)
Arranz and Arroyabe (2008) R&D Projects	<ul style="list-style-type: none"> • Process complexity • Structural complexity, and • Behavioural complexity

Source: adapted from Van Scoter (2011)

According to Ika (2009, p. 7) “the only thing that is certain in project management is that success is an ambiguous, inclusive, and multidimensional concept whose definition is bound to a specific context”. The subsections that follow elucidate on ERP context factors.

2.3.1 ERP Culture

Numerous studies have identified culture as an important factor in an ERP implementation, with several researchers demonstrating a strong association between organisational culture and successful ERP implementations (Krumbholz & Maiden, 2001). It has been suggested that organisations have failed during an ERP project because they have failed to understand the people and culture in the enterprise and not because they failed on the technological deliverables (Ragowsky & Somers, 2002). For instance, SAP is known for bringing its own culture to an implementation, and as such, it needs to be merged with the existing culture in the organization (Krumbholz & Maiden, 2001).

Likewise, Waterhouse (2010) explained that the key to properly managing this type of project is to understand the dynamics of its implementation and make sure that this implementation strategy reflects business transformation as opposed to only IT considerations. As Davis and Heineke (2005) identified, ERP implementation failures are often the result of lack of management support, improper training and poor communications, most of which are people and culture related problems.

Studies show that there is sufficient evidence to suggest the cultural bubble produced upon the implementation of ERP has generated more problems than the actual delivery of the ERP system and technology (Davenport, 1998; Hsiuju & Chwen, 2004). Correspondingly, Davis and Heineke (2005) asserted that an enterprise resource system implementation typically fails for several reasons including, the inability to understand the people and cultural issues, as manifested by top management’s lack of support and commitment.

An ERP implementation goes beyond the deployment of a new technology, it often results in an incredible change in the organization’s business processes and it requires the embracement of a complete cultural change (Gale, 2002). However, it must be noted that several authors have unfortunately, also suffused the concept with their own interpretation, inevitably leading to criticisms from other researchers (Walsham, 2002).

Molla, Loukis and Licker (2005) posited that two main sets of cultures can be identified in any ERP implementation which they referred to as, the *ERP institution culture* and the *ERP implementing organization culture*. The former is described as a culture embedded in the ERP software reflecting the views of the ERP developers, vendors and consultants; while the latter is a culture reflecting the views of the implementing organization's project team, managers and users. They explained that lack of congruency can lead to cultural mismatch and contributes to ERP *process and outcome failure*, pointing out the conflicts that may arise between these two cultures. They described that, the environment in which an ERP system is developed, selected, implemented and used constitutes an ecosystem including several stakeholders from the developers of the system, the vendors, the consultants, the project team and the ultimate users; and further highlighted that each one of the participants or citizens espouses a certain cultural assumption towards the ERP implementation process. Molla et al (2005) pointed out that Skok and Doring (2001, p. 5) stated that "ERP is designed by having in mind the "universalism culture" with its focus on core competence, low cost strategies and mass production; and that Allen and Kern (2001) furthermore, criticised this universal business culture of the ERP system and consider it as an "ideology of the private sector."

These connections bring together the importance of the linkages and the usefulness of this understanding when managing a complex delivery such as an ERP implementation. Walsham (1995b) identified the manager's role in all the interconnected activities involved in an implementation, and that the manager needs political and personal skills, the ability both to use political tactics and to be considered an insider. Willcock and Mark (1989) also identified the importance of the system manager establishing political and cultural support through identifying and responding to stakeholders' objectives, especially those of users.

Kirkpatrick (2009) explained that leaders who communicate a vision in multicultural settings, be they in a multinational firm or an organization with a diverse workforce, need to consider that the values contained in the vision statement may not be as appealing or easy to discern to people from a different cultural background. They suggested that in such instances, the leader must take steps to communicate an inclusive vision and allow followers time to clarify their personal values and realign them with the vision. Joseph, Ang, Chang & Slaughter (2010) states that companies exploring human resources from offshore, outsource, onsite, or in-house must acquire excellent skillsets in addition to technical skills.

The review so far has highlighted the impact of culture within ERP context as an area of possible issues. Hence, the point will be further addressed along with others in the discussion chapter – based on the outcome of the data analysis.

2.3.2 Resource Availability

According to PMI (2017) Resource requirements identify the types and quantities of resources required for each work package or activity in a work package and can be aggregated to determine the estimated resources for each work package and the project as a whole. Researchers, Larson and Gobeli (1989) looked at the impact of contextual factors on development projects in research and on the significance of project management structure on project success. The five contextual factors investigated by Larson and Gobeli (1989) were complexity, technological novelty, clarity of project objectives, project priority and resource availability. Respondents to their study were asked to rank CSFs (top management support, client consultation, preliminary estimates, the availability of resources, project management performance and other project specific factors). The ranking of CSFs was compared against industry type, organization type, size of firm and against success factors (cost, time, quality and customer satisfaction). For all project sizes availability of resources was the most important CSF. This further highlights the magnitude of the resource availability element in the success of projects across industries.

Other researchers have studied context in project management, Maylor et al. (2008) for instance identified contextual factors such as: Organizational factors, Technical complexity and Resource complexity. Along the same vein, Studer (2005) suggested that four factors associated with the organization were critical for Enterprise Human Resource (EHR) system implementation success. The factors were management support, financial resource availability, implementation climate, and implementation policies and practices. Whilst this also highlights the high importance of resource availability, it also indicates the broadness of the term as it may be said to apply to virtually any needs during an implementation. Thus, the approach to handling such resource needs would be to categorise all such needs in a way that appropriate plans of action can be drawn against the different buckets of resources and tracked throughout the implementation.

2.3.3 External Partnerships

External Partnership refers to contribution from different external business partners who are nevertheless crucial to a successful delivery of an implementation. These mainly pertain to vendors and suppliers of technical, infrastructure or resource contributions as well as employed consultancies and their resources. Researchers have identified the challenges which may come about through such channels of support and contribution and have recommended a good communication channel with the software vendor and the consulting company providing the implementation support of the ERP project (Bingi, Sharma, & Godla, 1999). External support itself has been identified as a necessary evil due to the technological complexity of ERP implementations is very high, requiring a wide spread of heterogenous and diverse technological expertise (Costin, 2019). Researchers have posited that majority of the literature focus on the customer and largely neglects the vendor and other organizations (Koch, 2007; Pekkola et al., 2013). It has been further noted that vendors, external consultants, and third parties such as database vendors and business partners contribute immensely to the implementation of ERP systems (Dittrich, 2014; Dittrich, Vaucouleur, & Giff, 2009). Furthermore, these external contributors also tend to cross national boundaries as ERP vendors tend to outsource parts of the projects to low-cost offshore locations (Levina & Vaast, 2008). Aloini et al. (2007) suggested that suitable vendors must be carefully identified as contributors to an implementation. Studies have demonstrated issues which may arise from such external partners like unstable or underperforming ERP vendor, lack of vendor support, and vendor lock-in which can all hinder development (Aloini et al., 2007; Shaul & Tauber, 2013). Some of the more technical issues noted by researchers have included inappropriate IT infrastructure and complications in integrating ERP systems with legacy systems (Leyh & Sander, 2015; Shaul & Tauber, 2013). Others include poor data-quality management which may hinder ERP systems' development (Momoh et al., 2010). It has been suggested that the implementation group and specifically implementation managers must establish and maintain good partnerships with external organizations (Saade & Nijher, 2016; Shaul & Tauber, 2013).

It can be seen that external partnerships though crucial in many cases to a successful implementation, also pose an impending and ongoing management overhead of sorts. Researchers have recommended a good communication channel with the software vendor and the consulting company providing the implementation support of the ERP project (Bingi, Sharma, & Godla, 1999).

2.3.4 Organisational Change

The implementation of an ERP system is often accompanied with a change of organisational structure, culture and business processes in order to enhance efficiency and to adapt processes to a certain extent to the selected ERP package (Umble et al., 2003). It has been posited that these changes in business processes affect the daily work, roles and responsibilities of employees which can cause uncertainty that fosters resistance to change and to accept the new system (Somers & Nelson, 2004; Reitsma & Hilletoft, 2018). A “strong preference for stability and continuity” noted by Brooks and Bate (1994, p.181) might indeed be in human nature – for better or for worse. Spencer-Matthews (2001, p. 52) described organisational change as “the negotiation or the renegotiation of shared meaning about what is to be valued, believed in and aimed for”. It is cultural change, the institutionalisation of the idea of change, shaping of the organisational culture and changing people’s attitudes (Newton, 2003; Spencer-Matthews, 2001; Martin et al., 2001; Austin et al., 1997). Since resistance to change by end-users lie “at the root of most ERP implementation challenges” (Salopek, 2001; p. 28), employee expectations and attitudes play an important role in ERP success (Sower et al., 2001).

Further, Markus and Pfeffer (1983) asserted system managers have to address the structural features of the organization, involving power distribution and culture, and employ process strategies such as participative design. Since the implementation changes the way of working in an organisation, the organisational culture is affected as well (Zhang et al., 2003). To what extent this applies depends on the match between the ERP package and how the organisation works as well as how well this is embedded in and supported by the system (Zhang et al., 2003). ERP implementation failures are often the result of lack of management support, improper training and poor communications, most of which are people and culture related problems (Davis & Heineke, 2005). It can be seen the potential and ongoing challenges organisational change can pose during implementation and how it must be continuously tackled on the road to a successful implementation – in this case client satisfaction.

2.3.5 ERP Context as a Moderator

Whilst several studies have identified context in relation to Project success and critical success factors (Thamhain and Wilemon, 1977; Maylor, 2003; Crawford, 2005; Pellegrinelli et al., 2007; Ika, 2009; Shao, 2010; Van Scoter, 2011), much fewer have addressed ERP context in relation to perceived client satisfaction. Van Scoter (2011) studied the impact of contextual factors on

critical success factors on both Enterprise Resource Planning (ERP) and Electronic Health Record (EHR) implementations, because she observed that CSFs have not typically included contextual details of the projects studied. Other researchers have studied context, for instance in relation to Project management model by Maylor (2003) from Maylor et al. (2008) who identified contextual factors such as: Organizational factors, Technical complexity and Resource complexity. Further Xia and Lee (2004) identified contextual factors in relation to IT/IS Projects such as: Organizational/Technological factors, Structural/Dynamic factors. Thamhain and Wilemon (1977) maintain that the environmental context of the project has to be examined before any conclusions can be drawn about project management effectiveness. Drawing on these, it appears then that even though several factors within an ERP implementation call upon the competence of the manager, several other factors also draw from the context within which the implementation operates, such as: organisational support, organisational structure, organisational stability as well as dynamics, and even country stability in some cases. All these imply there are always factors which are partially or fully out of the manager's control to directly affect, but which nonetheless have an impact on the success or failure of their implementation.

The influence of moderators has been documented by several authors. Pallant (2011) expressed that moderators influence the effect of the other independent variables. She stated that "Some of the most interesting research occurs when a researcher stumbles across (or systematically investigates) moderator variables that help to explain why some researchers obtain statistically significant results while others do not." (p. 311). Pallant further suggested to consider and include moderator variables in research design, where appropriate. In the current study, the suggestion will allow the broadening of analysis to see whether ERP context is acting as a moderator variable in influencing the effectiveness of the managers' competences to affect client satisfaction.

2.3.6 Contingency Theory in ERP Implementation Leadership

Contingency theory was developed by Fred E. Fiedler (1967) who asserted that no one leadership style fits all situations (Fiedler, 1974; Ayman, Chemers, & Fiedler, 1995). Fiedler and Chemers (1974) asserted that the contingency leadership theory depends on two interacting factors, and for a leader to be successful in an environment, the leaders' behavior and the conditions must perfectly align with the situation and the environment. The fundamental claim of the contingency theory is that there is no best way to organize an organisation / corporation, to lead a company, or to make best decisions; and that the optimal

course of action is contingent upon the internal and external situation of that organisation. As asserted by Fiedler, what makes an effective leader depends on the situation (Fiedler, 1964; House, 1971). Fiedler's model does have some weaknesses. For example, some leaders may be more effective in certain situations than others. The theory holds that the effectiveness of a task group or of an organization depends on two main factors: the personality of the leader and the degree to which the situation gives the leader power, control, and influence over the situation or, conversely, the degree to which the situation confronts the leader with uncertainty, Fiedler (1958). Thus, the central theme of contingency theory is that context and condition – including organization's culture, environment, technology and size of task - can be key deciders of outcome regardless of how well a process is organised for success (Galbraith, 1973; Drazin & Van de Ven, 1985). Lawrence and Lorsh (1969) in their study indicated that organizations' internal systems, structures and processes should be consistent with the demands of the external environment. The work of Woodward (1965) highlighted the importance of conformance of structures and human relationships to their technological situations for organisational success – marking the beginning of a situational approach to organization and management.

From these definitions, it can be seen that Contingency theory provides the appropriate theoretical stance for the present study. Hence, it is possible to extract three important constructs upon which the contingency theory is broadly based and correlate them with constructs in the current study. These are: - Leadership, Situation and Desired outcome – and they correlate well with the constructs identified in the current study. Based on this, the current study may be said to fit into the Contingency theory domain. Furthermore, in relation to the Leadership and Situation constructs Dulewicz & Higgs (2003b) asserted that different leadership profiles are appropriate in different circumstances.

Fiedler (1964) put forward the contingency model of leadership effectiveness and emphasised the importance of situations on leadership effectiveness. The model suggested that the favourability of a situation determines the effectiveness of a task-oriented leader. Fiedler made a distinction between task-oriented and human relations-oriented leaders; and that the latter are most effective in moderately favourable and moderately unfavourable situations, while the former are most effective in either very favourable or very unfavourable situations. This highlights the highly pertinent impact of situation on the performance of leaders.

However, it must be noted that Contingency theory is not without its critics who have stressed the lack of clarity in its definitions. Schoonhoven (1981) suggested it is important to clarify what

is meant by context when applying contingency theory - whether it refers to task or environment. Many studies have investigated how projects are contingent on their particular context to achieve performance goals. This is the interaction approach of contingency theory as put forward by Turner and Müller (2006) in their research on investigating how project manager's leadership style are contingent on different project types to achieve project success. In the current study, context is used to refer to the ERP implementation environment with specific emphasis on the problems to be tackled on course to achieving a perceived client satisfaction. It may be said that this description fits the contingency theory and the leadership competency school. Attempt will be made to provide further support to the contingency theory based on the outcome of the current research. In relation to the earlier description and upon a further unbundling of the contingency theory into - Leadership, Situation and Desired outcome, the Leadership element in the current study could be represented by ERP Leadership competences, the Situation would be the ERP context while the Desired outcome sought could be represented by Perceived client satisfaction. This topic is later revisited in the results chapter.

2.3.7 ERP Context Knowledge Gaps

The literature review in this section (i.e. 2.3) in relation to ERP Context has provided a critical analysis on the topic, drawing upon a wide range of studies and pulling together the key findings, including its dynamics and the high complexities inherent within the ERP implementation context. From the literature research provided on this topic, the structural foundations of ERP context (Van Scoter, 2011) and the influence they have on project outcomes indicate that ERP context problems may serve as a moderator by weakening the relationship between Managers' leadership competences and ERP Implementation outcomes such as perceived client satisfaction. Thus, a knowledge gap may be noted in terms of how ERP context can impact the relationship between ERP Managers' competences AND Perceived Client Satisfaction.

2.4 Managers' ERP Leadership Competences

On managers' ERP leadership competences, Kræmmergaard and Rose (2002) distinguished between knowledge and skills - explaining that Knowledge is information stored and interpreted in the human mind and cited (Weick, 1979). Kræmmergaard and Rose (2002) described Skills as based on knowledge obtained through experiences. However, they indicated that the definitions fail to take into account which actions these skills and knowledge makes possible.

According to Dreier (2000), Competence is the ability to transform knowledge and skills into practice in a qualified way. ERP competence, then, involves three elements: knowledge, skill, and the ability to refine them in practice (Kræmmergaard and Rose, 2002). Kræmmergaard and Rose (2002) categorized the leadership competences for an ERP implementation journey into 3 groups:

- a) Business competences
- b) Technical competences
- c) Personal managerial competences

PMI (2017) noted that some projects may be referred to as complex and difficult to manage. ERP may be said to fall into this bracket of projects. They outlined antecedents to complexity within a project as – an organisation's system behaviour, human behaviour and the uncertainty at work in the organisation or its environment. The Project Manager Competency Development (PMCD) Framework (PMI, 2016) outlines the key dimensions of project management competency and identifies those competencies most likely to impact project management performance; regardless of project nature, type, size or complexity. Project manager competency consists of three separate dimensions:

- a) Knowledge – What a project manager knows about the application of processes, tools and techniques in project activities.
- b) Performance – How a project manager applies project management knowledge to meet project requirements
- c) Personal – How a project manager behaves when performing activities in a project environment

The International Project Management Association (IPMA) promotes a competence-based approach to project management, and define competence as “the demonstrated ability to apply

knowledge and/or skills, and where relevant, demonstrable personal attributes” and have listed 3 competence areas (IPMA, 2015):

- a) People Competences - Personal and interpersonal competences
- b) Practice Competences – methods, tools and techniques used in projects
- c) Perspective Competences – interaction with the environment and project strategy and governance

IPMA competences are described in the International Competence Baseline (ICB). The ICB 4.0 considers three different competence areas: People. Perspective and Practice. (ICB, 2015).

- a) People: the interpersonal competences.
- b) Perspective: the interaction with the permanent organization and society
- c) Practice: the technical management competences.

The international standard ISO 21500 (International Organization for Standardization, 2012) adopts a process-based approach, not a competence-based one. The Standard integrates ideas from different sources and project management bodies of knowledge, as PMBOK, ICB, PRINCE2, ISO 10006 or ISO 31000 (Stellingwerf and Zandhuis 2013).

A common theme across the competence areas outlined by the different sources provided and which may also be linked to ERP leadership is the Personal/People competence. This is the area in which personal attributes such as Emotional Intelligence (EI) may be said to lie. PMI (2017) have also provided a further definition for the Personality element of the manager’s competence as - the individual differences in characteristic patterns of thinking, feeling, and behaving. Personality characteristics or traits include but are not limited to:

- a) Authentic (e.g., accepts others for what and who they are, show open concern);
- b) Courteous (e.g., ability to apply appropriate behavior and etiquette);
- c) Creative (e.g., ability to think abstractly, to see things differently, to innovate);
- d) Cultural (e.g., measure of sensitivity to other cultures including values, norms, and beliefs);
- e) Emotional (e.g., ability to perceive emotions and the information they present and to manage them; measure of interpersonal skills);
- f) Intellectual (e.g., measure of human intelligence over multiple aptitudes);
- g) Managerial (e.g., measure of management practice and potential);

- h) Political (e.g., measure of political intelligence and making things happen);
- i) Service-oriented (e.g., evidence of willingness to serve other people);
- j) Social (e.g., ability to understand and manage people); and
- k) Systemic (e.g., drive to understand and build systems).

PMI explained that an effective project manager will require some level of ability with each of these characteristics in order to be successful, noting that each project, organization and situation requires that the project manager emphasize different aspects of personality.

Mitra (2011) posited that ERP leadership is about monitoring, controlling and identifying issues proactively even before they occur, and then finding the way to mitigate such issues or providing an answer to resolve them and move the project forward as planned. Furthermore, although both effective managerial and leadership skills are thought to be requisite for a successful ERP implementation (Mitra, 2011), there is little empirical evidence to support this claim, and little research on the specific leadership skills that are associated with effective ERP deployment.

Project Management Competences in the New Technological Era

The current pace of technological advancement has inevitably impacted several areas. To this, Pajares, Poza, Villafanez and Lopez-Parades (2017) provided a review of what they called “the fourth technological revolution” and argued that the projects are complex in nature and thus classical approaches might be unsuitable for managing them. They identified that the technological revolution is being propelled by the development of cyber-physical systems and technologies like Internet of Things, Big Data, Cloud Computing, 3D Printing, and other new technologies. They cited Schwab (2016) who stated, “We are at the beginning of a revolution that is fundamentally changing the way we live, work, and relate to one another” (Schwab, 2016). To this, they asserted that the classical approach to project management fails whenever the project complexity increases and further suggested the managerial implications and the new skills they have to display in a context of innovation and competitive pressure.

Pajares et al. (2017) provided support for the competence approach and posited that the approach is especially relevant for projects in the new technological era because of the dimension of complexity and uncertainty inherent in such projects. Other researchers have also provided support for the competence approach and some have drawn linkages between

project success and the personality and project manager's competences (Crawford, Hobbs & Turner, 2005; Crawford, 2007; Shao, 2010; Bakhsheshi & Nejad, 2011). Pajares et al. (2017) asserted that a high level of complexity in a project must be balanced by a high level of competence in a project manager; indicating that those competences to be exhibited include those relating to the characteristics of the individuals in the new project teams. They posited that the new innovative environments will require displaying new business-oriented competences; and indicated that the project manager needs to move away from focusing on the traditional "iron triangle" to thinking in terms like inter alia economic value, strategic value, and the urgency to issue a new product. Pajares et al. (2017) also further identified that project managers will have to learn to work in distributed networks and specifically indicated that competences like trust and collaboration are essential.

As already indicated, one of the common themes - personal and behavioural competences - runs through the ERP leadership competences literature presented, while other literature has further highlighted and drawn linkages from such competences to Emotional Intelligence (Miners, Cote & Lievens, 2017; Geoghegan and Dulewicz, 2008). The subsections that follow elucidate on ERP leadership competences identified.

2.4.1 Emotional Intelligence (EI)

EI was introduced about 30 years ago (Salovey & Mayer, 1990), and was further made popular some years later (Goleman, 1995). EI captured people's imaginations at the time due to the appeal of the argument brought forward - as an important determinant of success (Miners, Cote & Lievens, 2017). Miners et al (2017) in their review, noted that some studies found that EI predicts important outcomes such as interpersonal relationships (Lopes, Salovey, Cote & Beers, 2005). According to Boyatzis, Goleman & Rhee (2000), EI is observed "when a person demonstrates the competencies that constitute self-awareness, self-management, social awareness and social skills at appropriate times and ways in sufficient frequency to be affective in the situation".

- ▶ Goleman, Boyatzis & Mckee (2009) noted that "Effective leaders' prime good feelings in those they lead". Moreover, that all eyes turn to leaders for emotional guidance, during a crisis.
- ▶ According to Goleman et al (2009), leaders set the emotional standard for a team, and when people feel good, they work at their best.

- ▶ The leader's tone of communications, facial expression, gestures, and other physical communications are present in all relationship activities (Goleman, 1985).
- ▶ One of the most powerful techniques in leadership is the ability to create positive motivation and resonance (Goleman, Boyatzis et al. 2004) with the leader's goals.
- ▶ From a leadership perspective, this opens the opportunity for a project leader to maximize productivity by using positive emotional contagion to motivate productivity (Flamholtz 1974; Goleman, Boyatzis et al. 2004).

Miners et al. (2017) assessed the validity of emotional intelligence measures, describing an approach that enables a more complete evaluation of emotional intelligence measures. They argued that evidence based on the response process has been overlooked by researchers, and further proposed that the evidence can be obtained through (a) a definition of ability, (b) a description of the mental process that operates when a person uses the ability, (c) the development of a theory of response behaviour that links variation in the construct with variation on the responses to the item of measure, and (d) a test of the theory of response behaviour through one or more strategies they described which include – measurement of variation, moderation of process and evaluation of alternatives. However, they also acknowledged the difficulty to identify the mechanism(s) that link variation in some of the specific competences that underlie the branches of EI to the responses on a focal measure – in relation to which they expressed support for the approach described by Bornstein (2011), because the approach does not require the measurement of mental processes.

Several researchers have also considered leadership style in relation to emotional intelligence such as Weinberger (2003) who examined the relationship between emotional intelligence, leadership style and perceived effective leadership. She perceived Leadership as a key element in driving and managing what was termed the “permanent white waters” of modern life (Vaill, 1996). “White waters” was used to refer to the continuous environment of turmoil and rapid change. According to Weinberg (2003), great leaders are able to move people, ignite their passion and inspire the best in people. Two surveys were used. She reported 138 managers responded to the emotional intelligence instrument, the Mayer Salovey Caruso Emotional Intelligence Test (MSCEIT) (Mayer, Salovey & Caruso, 2002), while 791 employees completed the leadership styles survey, the MLQ5x (Bass & Avolio, 2000) on their manager.

Mayer and Caruso (2000) discussed how business leaders can enhance their understanding of the role and impact of emotional intelligence (EI). According to Mayer et al., ‘...the bottom line is that the manager who can think about emotions accurately and clearly may often be better able to anticipate, cope with, and effectively manage change.’ They put forward the Mayer-Salovey Four-Branch model of emotional intelligence which examines four branches of competences related to EI. The first two branches, Perception, and Facilitation, are termed "experiential EI," because they relate most closely to feelings. They involve, first, the capacity to perceive emotions in others accurately, and, second, the ability to use emotions to enhance one’s thought. The third and fourth areas of EI skills are termed "strategic EI" because they pertain to calculating and planning with information about emotions. The third area, Understanding Emotions, involves knowing how emotions change, in and of themselves, as well as how they will change people and their behaviours over time. The fourth area, Emotional Management, focuses on how to integrate logic and emotion for effective decision-making. These four skill areas are related to one another, but they are functionally distinct as well. Mayer and Caruso concluded that the ability to address such concerns is one of the essentials of effective leadership. They also illustrate how the manager who can think accurately and clearly about emotions, may often be in a better position to anticipate, cope with, and effectively manage change.

EI is an individual difference construct that is a key to effective leadership (e.g. Goleman, 1995; Goleman et al., 2013). Emotionally intelligent leaders can also use their EI to monitor and control their emotions and manage others’ and own emotions to achieve desirable outcomes (Mayer, Caruso & Salovey, 2016). Miao, Humphrey & Qian (2018) noted that since emotionally intelligent leaders can accurately interpret their followers’ feelings and have reasonably good understanding of the causes and meanings of their emotions, they are able to cultivate effective social exchanges and intimate relationship building with their followers to enable them to project their values and vision onto their followers. The understanding of the characteristics and effect of EI by managers and leaders may enhance its use and consequently its effect. Miao et al. (2018) asserted that emotionally intelligent individuals can use their EI to decipher the emotional requirements of a situation, empathize with others, and modulate their emotional displays to meet others’ expectations; moreover, Miao et al. (2018) posited that emotionally savvy leaders are more likely to have higher perceived authenticity in the eyes of their followers because they can use their EI to apply effective emotional labour strategies, such as genuine emotional labour or deep acting, to gain favourable impression from their followers, citing (Gardner, Fischer & Hunt, 2009).

2.4.1.1 The Link between EI and Leadership

A large body of research has been devoted to understanding the influence of EI on management and leadership in several areas including; the Royal Navy (Young & Dulewicz, 2007), Police (Hawkins & Dulewicz, 2007), and in project management (Geoghegan & Dulewicz, 2008). It has been noted that Leaders influence the performance of their team (Pirola-Merlo, Härtel, Mann & Hirst., 2002). Leaders are expected to communicate a vision to their subordinates and ensure the outcome produced according to the vision (Alon & Higgins, 2005). Higgins (2002) found that EI plays a significant role in effective change leadership and Goleman et al. (2002) found evidence of an increase in change tolerance after development of EI skills.

Since Goleman (1995) popularized the concept of EI, there has been no shortage of studies investigating the relationship between EI and positive outcomes and research into the relationship between EI and leadership outcomes has seen similar, if not more, levels of interest in recent years. Some have found positive associations for EI with school and work performance outcomes (Van Rooy & Viswesvaran, 2004) as well as mental and physical health (Schutte, Malouff, Thorsteinsson, Bhullar & Rooke, 2007). Accordingly, there has been a somewhat justified widespread scepticism against certain claims in relation to the link between EI and leadership outcomes (Antonakis, Ashkanasy & Dasborough, 2009; Landy, 2005; Locke, 2005). In fact, Lindebaum (2009) refers to the debate between the proponents and critics of EI as one that “thrives on hyperbolic claims on one hand, and empirical evidence to the contrary on the other” (p. 227). Furthermore, in a book on emotional intelligence and leadership, Goleman, Boyatzis & McKee (2002) claim that: “Emotional Intelligence is twice as important as IQ and technical skills [. . .] The higher up the organisation you go, the more important emotional intelligence becomes.”

Harms and Crede (2010) noted that research into the relationship between emotional intelligence (EI) and transformational leadership is filled with bold claims regarding the relationship between these constructs. Moreover, that even experts of note in the field of EI (Goleman, Boyatzis & McKee, 2002) argue that elements of EI such as empathy, self-confidence, and self-awareness are the core underpinnings of visionary or transformational leadership. Some have claimed that “for those in leadership positions, emotional intelligence skills account for close to 90 percent of what distinguishes outstanding leaders from those judged as average” (Kemper, 1999, p. 16). Others have noted the disappointing results of intelligence and personality models in the prediction of exceptional leadership and have argued

that EI may represent an elusive “X” factor for predicting transformational leadership (Brown & Moshavi, 2005). As indicated, there have been much support for EI, including discussions provided in section 2.4.1.2. - rebutting EI criticisms (Dulewicz & Higgs, 2009).

2.4.1.2 EI Criticisms

The field of study of EI has its critics with a key criticism being that there is no agreed definition of EI (Locke, 2005). Along the same vein, Mayer and Caruso (2000) noted that regrettably, almost any claim can be made about EI if the term is not clearly defined, since almost any research can be said to pertain to it. And that unfortunately, many irresponsible claims have been made about the topic regarding the size of the EI effect (e.g., "twice as important as IQ") and the areas of the EI effect (e.g., "virtually any area of life"). Their position was that EI is an important capability, but one that coexists with other important strengths and weaknesses, and affecting some areas more than others.

Harms and Crede (2010) noted that, while considerable efforts have been made to create psychometrically valid measures of EI, there is still no single universally accepted measure of EI, and further explained that a number of criticisms have been made concerning the psychometric properties of the present scales available in relation to their convergent, discriminant, and predictive validity. They cited Brackett and Mayer (2003) who compared a number of different EI inventories and found little convergence across EI measures. Harms and Crede then asserted that it is this reason that some researchers have questioned whether or not different measures of EI assess the same construct at all (Matthews, Zeidner & Roberts, 2002). Some in fact believe that nothing incremental is being added to the established measures of personality and cognitive intelligence in predicting work outcomes, Antonakis (2004).

In addressing the criticisms raised, it may be that certain researchers were so eager to promote the concept of EI, that they were blinded to other relevant competences in operation in a context. The current researcher agrees that EI is in fact one out of several types of intelligences and should be treated as such - and that EI itself cannot stand in isolation but must, in most cases, be considered in combination with other relevant skills and abilities required to perform and achieve the task at hand in an organisational setting.

2.4.1.3 Rebutting EI Criticisms

In answer to the EI critics and to address some of the criticisms raised Dulewicz & Higgs (2009) set out to refute three common myths of the Emotional Intelligence. They explained there appeared from the literature to be a fierce debate about what constitutes the domain of EI; terminology used to describe the construct; methods used to measure it; and the theoretical framing of the construct (e.g. Locke, 2005). They identified three common myths about Emotional Intelligence perpetuated by Occupational/Organisational Psychologists around the world in articles, books and at international conferences such as:

1. There are no clear, defined EI constructs (e.g. Locke, 2005)
2. There is no evidence of validity of EI in a work setting. (e.g. Robertson & Smith, 2001)
3. EI questionnaires does not add any variance to that produced by the Big 5 Personality Factors (e.g. Thornton, 2006)

In refuting *myth 1*, using the EIQ, the authors explained the seven elements of the EIQ are indeed clearly defined in behavioural terms; that titles and short definitions are provided, and clear and detailed definitions provided in the EIQ user manual (Dulewicz & Higgs, 2000b) and in various papers.

In refuting *myth 2*, the authors demonstrated content validity by citing the approach to the design of EIQ which was from an extensive survey of the literature on nine leading EI authorities at the time (Dulewicz & Higgs, 2000a) by identifying common elements across their work, as shown in Table 2-3 – thereby providing evidence of content validity within a work setting as some of the studies were carried out within work organisations.

Table 2-3: Elements of EIQ covered by EI Experts in 1998

EI Element	Goleman	Gardner & Hatch	Salovey & Mayer	Steiner	Cooper & Sawaf	Bar-On
Self-Aware	✕	✕	✕	✕	✕	✕
Resilience	✕	✕	✕	✕	✕	✕
Motivation	✕		✕		✕	✕
Sensitivity	✕	✕	✕	✕	✕	✕
Influence	✕	✕				✕
Intuitiveness	✕	✕				
Conscientious	✕				✕	

Source: Dulewicz & Higgs (2007)

The authors also provided details demonstrating concurrent validity in studies within the private sector, citing their previous study of Team Leaders in a pharmaceutical company (Dulewicz & Higgs 2000c) which provided an opportunity to investigate the validity of the EIQ since measures of current performance were available. The results provided clear evidence for the concurrent validity of the original self-assessed EIQ-M. Total EIQ score was highly significantly related to performance measures. Furthermore, all Elements apart from Sensitivity were significantly related to performance. In particular, Motivation and Influence were highly related. The study included the 360⁰ version of EIQ-M, using assessments by the boss. The results provide further support, with aggregated scores being significantly correlated with performance; with the total EQ score highly significantly related to performance measure. On the specific elements, six of the seven were significantly related to performance (Sensitivity was again the exception).

The authors further provided details of concurrent validity studies in the public sector, citing a study of Royal Navy Officers which explored the relationship between Emotional Intelligence, Leadership and Job Performance of 261 Officers and Ratings within the Royal Navy using the formal Appraisal System (Dulewicz, Young & Dulewicz, 2005). EIQ scores were correlated with organisational performance measures. Results show that six of the EIQ dimensions were all related to overall performance, the only exception being Intuitiveness. In the same vein, a study on Police Officers in the Scottish Police using organisational appraisal data and the 360⁰ EIQ (Hawkins & Dulewicz, 2007) included findings on the relationship between performance as a leader and EI. Data were gathered from bosses, peers and followers as well as from officers themselves. Annual appraisal performance data were also obtained where available. Results provide support for the proposition that there is a positive relationship between EQ and performance as a leader in policing, using both 360⁰ overall ratings of leadership performance and job appraisals. The most supportive findings come from the 360⁰ performance ratings, with six of the seven elements being highly significant. Again, Intuitiveness was the only exception, with all four correlations being negative.

In refuting *myth 3*, the authors cited the Royal Navy Study (Dulewicz, Young & Dulewicz, 2005) and the Hierarchical Regression conducted on the data, using the Big 5 personality scores from the Occupational Personality Questionnaire (Saville, Holdsworth, Nyefield, Cramp & Mabey, 1993). The EIQ Elements were the Independent Variables and formal Appraised Performance the Dependent Variable. Results support the hypothesis that Emotional Intelligence Factors do add statistically significant variance to that produced by the Big 5 personality factors alone.

2.4.2 Leadership Performance

Several studies have focused on leadership performance in the area of ERP projects. One of such is Waterhouse (2010) who asserted these successful ERP implementations are the result of a well-planned strategy, a great team, a highly efficient technical manager and an effective leader who is able to articulate and communicate the overall strategy throughout the entire organization. Others who have studied the topic include Soja (2006) who examined leadership issues in the context of ERP implementations. Soja discussed how leadership issues are present in success factor models, and further investigated how ERP leadership occurred in business practice. The paper studied the practitioners' opinions about the importance of leadership factors and examined the influence of these factors on implementation success. The analysis considers three different perspectives: enterprise size, implementation scope and implementation duration. The results demonstrate the greater role of leadership for projects conducted in large enterprises. Leadership is a complex phenomenon involving a leader, followers, and the situation (Hollander, 1978).

Geoghegan and Dulewicz (2008) explored the relationship between a project manager's leadership competencies and project success. They employed quantitative methods using the leadership dimensions questionnaire (LDQ), an instrument which has been deployed in a variety of public and commercial organizations, and the Project Success Questionnaire (PSQ) to gather data from 52 project managers and project sponsors from a financial services company in the UK. The sample comprised project managers with sufficient project leadership experience. Eight separate leadership dimensions were found to be statistically significantly related to performance and a link was further highlighted between managerial competencies and project success.

2.4.2.1 Leadership Competences of ERP Managers

Much of the focus of leadership discussions have been on the determinants of leadership effectiveness (Yukl, 1998). Crawford (2005) noted that an important issue in considering project management competence is the nature of projects and the context within which they are conducted and cited Einsiedel (1987) who contends that project management effectiveness "depends on a wide variety of factors, some of which have little or nothing to do with the managers' personal ability or motivation". Likewise, Thamhain and Wilemon (1977) maintain that the environmental context of the project has to be examined before any

conclusions can be drawn about project management effectiveness. The current work focuses on ERP leadership and implementation management.

In order to attempt to understand the full extent of the competences required of managers leading ERP implementations viz. the impact of stage dynamics along the different stages of implementation, some studies have conducted a longitudinal study. Kræmmergaard and Rose (2002) examined the managerial competences required on an ERP journey. They specifically investigated the managerial competences required for the complex interactions required to successfully integrate an Enterprise Resource Planning system into an organisation. They employed a five year longitudinal study of a Danish production company implementing SAP R/3, watching the, as it were, 'rise and fall of the ERP project managers.' They concluded that different stages of the ERP journey required different competences from the managers, highlighting that a manager with a certain competence mix might successfully oversee part of the ERP journey, but a different blend of competences was required to manage other parts. Kræmmergaard and Rose further distinguished between knowledge and skills and cited Weick (1979), who asserted that knowledge is information stored and interpreted in the human mind and skills are based on knowledge obtained through experiences. The lack in these definitions is that they fail to take into account which actions these skills and knowledge make possible.

For years, since the arrival of the first computer, IT managers have struggled with implementation, usually associated with a multitude of problems (Ptak and Noel, 1998). Research has shown that implementation is an intensively political process as well as a technical one (Keen, 1981). Markus and Pfeffer (1983) posited that system managers have to address the structural features of the organization involving power distribution and culture, and employ process strategies such as participative design.

In relation to the specific skills required of a manager to lead large projects such as ERP, several researchers have offered their proposals on the matter. According to Willcock and Mark (1989), it is essential for the implementation manager to establish political and cultural support by identifying and responding to stakeholder objectives in the organization, particularly those of users (Willcock and Mark, 1989). Moreover, Walsham (1995b) argues that the manager has a role in all the interconnected activities involved within the implementation, and that the manager needs political and personal skills, the ability, both to use political tactics and to be considered an insider. The importance of experience has been included in the arguments by Bancroft (1996) who expressed that the manager should preferably be experienced in ERP implementation, and business and managerial skills. However, of note, is the suggestion

regarding ‘authority’ by Keen (1981) who asserts ERP managers must be given authority and resources for negotiation. In support of the suggestion, from the current researcher’s experience which may be biased, appropriate authority must be given to implementation leaders in order to both, be fully responsible for the delivery approach and to minimise the need for too many escalations during an implementation.

Managers’ Leadership and Management Competences

Leadership has been described as, a process which is similar to management in many ways, and that it comprises influence and working with people, which are two key factors relating the two (Northouse, 2007). According to Northouse, in general, many of the functions of management are activities that are consistent with the definition of leadership and that another major factor that relates leadership and management is effective goal accomplishment. However, the two are also different as, whereas the study of leadership can be traced back to Aristotle, management emerged around the turn of the 20th century with the advent of the industrialised society. Management was created as a way to reduce chaos in organisations and to make them more effective and efficient (Northouse, 2007). Functions of management and leadership identified by Kotter (1999) are outlined in Table 2-4.

Table 2-4: Functions of Management and Leadership

MANAGEMENT Produces Order & Consistency	LEADERSHIP Produces Change & Movement
Planning and Budgeting <ul style="list-style-type: none"> • Establish agendas • Set timetables • Allocate resources 	Establishing Direction <ul style="list-style-type: none"> • Create a vision • Clarify big picture • Set strategies
Organising and Staffing <ul style="list-style-type: none"> • Provide structure • Make job placements • Establish rules and procedures 	Aligning People <ul style="list-style-type: none"> • Communicate goals • Seek commitment • Build teams and coalitions
Controlling and Problem Solving <ul style="list-style-type: none"> • Develop incentives • Generate creative solutions • Take corrective action 	Motivating and Inspiring <ul style="list-style-type: none"> • Inspire and energise • Empower subordinates • Satisfy Unmet needs

SOURCE: Adapted from *A force for Change: How Leadership Differs from Management* (p. 3-8), by J. P. Kotter, 1990, New York: Free Press

For the purposes of the current study, management and leadership are not intended to be discussed as two separate activities but together in the specific role of a manager leading an ERP implementation. The role under review is of a manager and their display of relevant leadership competences to bring an ERP implementation to fruition in a way that is perceived as satisfactory to the end-client. This has been identified as requiring a cross-functionality of both good managerial as well as leadership attributes.

2.4.2.2 Key Criticisms of ERP Leadership

Many of the papers in this area have considered the performance of a project leader and failed to discuss what this performance can account for in the grand scheme of an IT project. Holland & Light (1999) noted that approximately 90 percent of ERP implementation projects are either late or over-budget. This was supported by Martin (1998). They believed it may be due to poor cost and schedule estimations or changes in project scope rather than project management failure (Holland & Light, 1999). This implies that, at a project manager's best, they can only succeed on ERP implementations 10 percent of the time. Hence, from the current researcher's perspective, it appears that further work is required to really consider the ways the project leader competences may be enhanced to either increase the numbers of successful projects on the one hand, or to be able to incorporate an exit strategy that will save the organisation wasted time and resources much early on.

2.4.3 Follower Commitment

Kelley (1988) states, "... preoccupation with leadership keeps us from considering the nature and the importance of the follower" (p. 144). Uhl-Bien, Riggio, Lowe, and Carsten (2014) asserted that study into followers as a key component of leadership process are few. Nevertheless, it is still a generally understood concept that followership is highly essential to the performance of a leader. In fact, Kelley (1992) posited that followers are partners as well as a significant component driving the leadership process. Shamir et al. (2007) have pointed out that while some studies examine followers in the leadership process, most studies only focus on how followers contribute to leader success. Followership is the study of how followers view and enact following behaviors in relation to leaders (Riggio et al., 2008; Uhl-Bien et al., 2014). Kelley (1992), Boccialetti (1995), Chaleff (2009), and Kellerman (2008) have all attempted to put a stronger emphasis on the follower beyond the simple idea or expected role of blindly following as the subordinate.

A follower may be defined as a team or organisational member that interacts and reports to the authority of another member who is designated as a leader (Chaleff, 2009; Kellerman, 2008; Kelley, 1988, 1992). Followership is the characteristics, behaviours, and relational processes between followers and leaders as well as individuals responding to a leader's influence (Uhl-Bien et al., 2014). Shamir et al. (2007) have pointed out that while some studies examine followers in the leadership process, most studies only focus on how followers contribute to leader success. Kelley (1992) stated that leaders only contribute about 20% of the productive outcome of any organization. Leaders are directly responsible for a significant portion of organizational success, but the majority rests with those outside the authority of the formal leaders.

From a critical review of several studies addressing the topic of follower commitment (Riggio et al., 2008; Uhl-Bien et al., 2014; Popper, 2011; Riggio et al., 2008; Boccialetti, 1995; Kelley, 1988, 1992), it would appear there is still a lot of work to be done to fully understand the qualities and characteristics of followers that lead to leadership success apart from the fact that their commitment can yield such success. Kelley (1992) developed a framework which was used to categorise followers into various types based on organizational engagement and critical thinking practices of followers, which would lead to follower commitment. The approach was to assign a typology to followers and used both qualitative and quantitative data.

Follower satisfaction with leaders and Follower commitment to the organisation were the two employee outcomes examined by Saltz (2004) within the relationship of leader-follower personality similarities and dissimilarities. The study ignored the possibility of personality differences that affect positive employee outcomes. Drawing upon similarity attraction theory (Byrne, 1971) and implicit leadership theory (e.g., Lord, 1985), Saltz carried out tests in relation to the relationship of leader-follower personality fit with follower outcomes using three dimensions (extraversion, conscientiousness, and emotional stability) from the five-factor model of personality (Goldberg, 1992). A sample of 778 leader-follower dyads was employed and polynomial regression analyses (Edwards, 1993) was carried out in order to overcome some of the difficulties associated with traditional ways of assessing fit, such as difference scores. Results revealed that leader-follower personality fit was not significantly related to follower satisfaction with the leader nor to follower commitment to the organization. In other words, neither leader-follower personality similarity nor dissimilarity for any of the three dimensions (extraversion, conscientiousness, emotional stability) was significantly related to follower commitment to the organization. Tests on the personality dimensions found that

follower extraversion and emotional stability were significantly related to follower satisfaction with the leader and that follower extraversion, conscientiousness, and emotional stability were significantly related to follower commitment to the organization. Further, when all five personality dimensions were included in a simultaneous regression, a significant relationship was obtained only for follower emotional stability with follower satisfaction with the leader and for follower conscientiousness and agreeableness with follower commitment to the organization. The study, however, lacked a consistency in the findings against other studies (Deluga, 1998; Bauer and Green, 1996; Strauss and colleagues, 2001), which suggests that there may be more than leader-follower personality supplementary fit that is associated with follower outcomes.

The understanding that followers influence each other to create a network of complex human relationships has been studied by several psychologists. It is perceived that each person subtly influences one another in such group dynamics (Côté, Lopes, Salovey, & Miners, 2010; Hogg et al., 2006; Smith & Comer, 1994). Moreover, the strength of these types of groups has been demonstrated to function without leaders. In these circumstances those follower relationships have been shown to have the capacity to bring about organisational change (Toor & Ofori, 2008; Lichtenstein & Plowman, 2009; Kickul & Neuman, 2000). However, it has been shown that when followers feel like they are contributing to key decisions and their proposals and suggestions are being considered to create change, everyone, including the organization, benefits (Kohles, Bligh, and Carsten, 2012; Peterson, Walumbwa, Avolio & Hannah, 2012).

An advantage of follower commitment was identified by Moore (1965) who posited that committed employees require less supervision, perform better than non-committed employees, and behave more predictably in a crisis and in situations requiring individual decision making. This claim was supported by the findings of Mowday, Porter and Dubin (1974), who also indicated that highly committed employees perform better than less committed employees. When applied to an ERP implementation, the so-called followers in the current context would usually be contract workers who would have been assigned to the implementation for a fixed time period, it could be said that the type of commitment discussed above would be directed at the implementation and its goals rather than the implementing organisation's goals. Hence, it would be the task of the leader in such a context to ensure communication of both the organisational goals and ERP implementation goals, albeit it is arguable the individuals' main focus would still be ERP implementation goals – and that would be understandable.

The follower commitment theory was examined by Burrs (2005) who asserted that leaders with high levels of emotional competence are able to increase follower commitment - by examining the relationship between the mid-level leader's emotional competence and follower commitment. Correlation testing of the data indicated a strong relationship between the mid-level leader's emotional competence and follower commitment. Results of the research suggest the need for a new paradigm shift.

The failure of many leaders to create relationships that allow followers to express themselves limits the followers' ability to perform (Schein, 1992). This failure limits the ability of leaders to implement change programs, as many followers have lost their motivation, enthusiasm, and energy for work (Maslach & Leiter, 1997). Maslach and Leiter (1997) suggested, in a continuously adapting work environment, followers want to expend their energies by participating more fully in the organization's success. In essence, leaders must be able to release the motivational energy that ignites the imagination of their followers to get passionate about and committed to work (Goleman, 1995).

Gregersen, Morrison, and Black (1998) suggested a genuine emotional connection would lead to willingness on the part of followers to do their best work and make whatever sacrifices were required to support the leader's vision. This includes, "*giving the leader the benefit of the doubt on difficult matters*" (p. 24), thus releasing motivational energy. When the leader emotionally connects with followers, they are more adept in securing support during negative events. "*In essence . . . leaders need to have the ability to inspire and arouse their followers emotionally. Followers, thus inspired, become committed to the leader's vision and, ultimately, to the organization*" (Humphreys et al., 2003, p. 193). A number of studies have concentrated on project teams and the role of followers in relation to how project success may be addressed from the people perspective and have concluded that an important way to motivate people is through more effective communication (Toney & Powers, 1997 and Larkin & Larkin, 1996). It can be seen the plethora of studies that have attempted to further understand the followership phenomenon. However, it appears also that it would be beneficial to dissect the phenomenon further by applying it to the context of ERP implementation and further relating it to perceived client satisfaction.

2.4.4 Team and Peer Cooperation

A number of studies have indicated the importance of managers establishing and maintaining high-quality relationships with both their direct reports and peers (Kotter, 1985; Tushman and Katz, 1980; Druskat and Wheeler, 2003; Ibarra and Hunter, 2007). It was noted that the quality of these interpersonal relationships affects a manager's ability to obtain necessary concurrence, supports, and timely information from the wider implementation team. Other research on cross-functional teams also shows that the extent to which managers are able to accurately diagnose and influence the broader environment directly affects their performance (Davis et al., 2012; Druskat and Wheeler, 2003; Marrone et al., 2007; Meier and O'Toole, 2001; McGuire and Silvia, 2010; Ancona and Caldwell, 1992).

Moreover, extensive work has been carried out by many researchers around the topic of influence. One of such is Yukl (2009) who posited that effective managers influence subordinates to perform the work effectively, they influence peers to provide support and assistance, and they influence superiors to provide resources and approval of necessary changes. A successful leader, would inspire and motivate the implementation contributors both internally and externally to bring their best to the implementation as well as empower them to make tough decisions for the success of the project. Hassan, Prussia, Mahsud & Yukl (2018) posited that several survey studies have examined how networking is related to effective leadership and/or workgroup performance. Along the same lines, Kim and Yukl (1995) found that leader networking, as reported by leaders and by their subordinates, was significantly related to ratings of managerial effectiveness by peers and superiors.

Cooperation and communication have been discussed together in some literature as they related to a project team as well as with key individuals and peers across departments; and have been highlighted to be of high importance and a tool to minimize resistance (Loonam et al., 2018; Saade & Nijher, 2016; Ram et al., 2013). Additionally, the important need for team and peer cooperation has been highlighted under the Behavioural competences identified in the International Competence Baseline (ICB, 2015). This deals with personal relationships between individuals and groups managed in the projects. Further, communication and cooperation have been identified as key CSF from literature (Saade & Nijher, 2016; Ram et al., 2013). Although there is shortage of literature specifically focused on the direct impact of team and peer cooperation on perceived client satisfaction on an ERP implementation, from the current researcher's view, when applying the discussion provided in this section it could be deduced that the concept of team and peer cooperation and the competence to positively

influence and use that collective in a targeted way during ERP implementation could be said to be highly relevant and impactful to a perceived client satisfaction outcome. Thus, it could be surmised that that collaboration, rather than competition, is not a nice-to-have but rather a necessary strategy

2.4.5 Delivery Capabilities

Atkinson (1999) proposed two stages of 'delivery' and post-delivery' measurement of project success and divided the later one into 'the system' component that includes stakeholders' benefits, and 'benefits' that covers impact on client and business. Thus, it may be that the expected impact on client satisfaction would be experienced rather at a post-delivery stage. Furthermore, as previously discussed, the influence of a manager's delivery capability along the time continuum at different phases of ERP implementation can in turn impact client satisfaction within those phases albeit not necessarily of equal impact across the whole implementation.

The need for highly-capable implementation manager(s) with the relevant delivery capabilities, experience and responsibility to drive an implementation and to adapt activities and plans to unforeseen events throughout the project has been highlighted in literature (Reitsma & Hilletoft, 2018). A manager with a vision who has capabilities to define a clear and measurable objective of the ERP implementation and to provide a reasonable justification of the implementation to all members of the organisation was highlighted by Saade & Nijher (2016). Ozorhon and Cinar (2015) investigated the critical success factors of ERP system implementation with in the construction industry and found, inter alia, the delivery capabilities of the leader to be an important CSF. To what extent a manager's delivery capabilities impacts the implementation outcome has been identified to depend on the match between the ERP package and how the organisation works as well as how well this is embedded in and supported by the system (Zhang et al., 2003).

Moreover, other literature have identified and highlighted competent ERP managers' delivery capability as well as collaboration between ERP practitioners and developers as important aspects of ERP leadership, to alleviate the problems encountered during implementation process, and can enhance implementation success (Ali & Miller, 2017; Markus, Axline, Petrie & Tanis, 2000). Although there is shortage of literature focused specifically on the impact of managers' delivery capabilities on perceived client satisfaction on an ERP implementation, from the current researcher's view, when applying the discussion provided in this section it

could be deduced that the delivery capabilities is an important competence relevant and impactful to a perceived client satisfaction outcome.

2.4.6 Project Management Knowledge

In highlighting the significance of project management knowledge, Murray (2001) describes the nine factors for IT project success that he thinks can make or break IT projects and suggested the manager must carry out a critical assessment of the risks inherent in the project, and potential harm associated with those risks, and the ability of the project team to manage those risks. He further suggested to develop appropriate contingency plans that can be employed should the project run into the identified problems.

As posited by Reitsma & Hilletoft (2018), project management knowledge relates to the basic and fundamental management activities such as defining clear goals and objectives, coordinating and controlling the project and its progress, allocating and organising human resources as well as establishing a resource and project plan and the usage of appropriate tools and techniques to carry out necessary tasks during implementation. It includes management of the traditional time, costs, quality, risks, benefits and resources (Loonam et al., 2018). Thus, it may be said that the manager would hold the vision and define a clear and measurable objective of the ERP implementation and further provide on an ongoing basis - a reasonable justification of its implementation to all members of the organisation (Saade & Nijher, 2016). Thus, it may be implied that project management knowledge would be a core competence of ERP leaders and has been identified as an important Critical Success Factor (CSF) in the literature (Loonam et al., 2016; Reitsma & Hilletoft, 2018).

Furthermore, ERP project management knowledge was identified as the major key success factor of ERP implementation in other literature (Ali & Miller, 2017; Tarhini, Ammar, Tarhini & Masa, 2015). It would appear, from the current researcher's perspective which may have some bias, that even though the focus of the current work is on perceived client satisfaction as a success measure, the wider success measures discussed do have some indirect linkage to client satisfaction – as those studies encompass client satisfaction measures within the success measures. For instance, it has been indicated that success factors of ERP implementation enhance employee satisfaction – for instance - Kanellou and Spathis (2013)'s study derived user satisfaction as a success measure on an ERP implementation – thereby showing such a linkage between implementation success and client satisfaction.

2.4.7 Offshore Team Relations

Offshore resourcing is the trend where companies look for cheaper offshore resource options to reduce their baseline costs (Chua and Pan, 2008). Additionally, it has been noted that the technological complexity of ERP implementations is very high, requiring a wide spread of heterogenous and diverse technological expertise. Costin (2019) posited that ERP implementations have in the last two decades used development resources from offshore countries - outside the country of implementation. According to Costin (2019) this was done due to increasing pressure to reduce implementation costs. He noted that, in fact, some companies delay their implementations due to the high cost of implementation as offered by consultancies and that the technical development aspects requiring programmers was found to cost lower per day offshore than it would have otherwise cost locally to the implementation.

Kirkpatrick (2009) explained that leaders who communicate a vision in multicultural settings, be they in a multinational firm or an organization with a diverse workforce, need to consider that the values contained in the vision statement may not be as appealing or easy to discern to people from a different cultural background. They suggested that in such instances, the leader must take steps to communicate an inclusive vision and allow followers time to clarify their personal values and realign them with the vision. Joseph, Ang, Chang & Slaughter (2010) states that companies exploring human resources from offshore, outsource, onsite, or in-house must acquire excellent skillsets in addition to technical skills. The ideal project team has been identified in the literature as diverse in terms of skilled people with different knowledge backgrounds and experiences that are consulted internally as well as externally (Nah & Delgado, 2006). However, it has also been identified that the use of offshore resources can also be fettered with issues. Costin (2019) highlighted the recurring issues of cost saving over quality which is known to accompany such decisions to use offshore resources and listed difficulties such as:

- i. communication difficulties (language was an extremely difficult barrier) – the major risk encountered;
- ii. cultural difficulties - the way of thinking is very different from how the Romanian functional consultants think;
- iii. the delivered product always left room for comments and adjustments (reports, forms, applications, etc.);
- iv. the Quality Assurance (QA) performed for each delivery highlighted incorrect coding

From the current researcher's standpoint, the involvement of offshore would appear a necessary evil, to be properly considered and managed in a way that realises the values of the approach whilst also anticipating and mitigating any issues arising from this inclusion along the implementation process. Ali & Miller (2017) posited ongoing ERP implementation progress report needs to be provided to all levels and functions of the organisation.

2.5 Perceived Client Satisfaction

Walker (2015, p. 311) emphasised client satisfaction in relation to understanding project success and stated that success of a project is based on "the difference between the client's expectation at the beginning of the project and his satisfaction at its completion".

Another definition of client satisfaction may be:

"affective attitude towards a specific computer application by someone who interacts with the application directly" (Doll and Torkzadeh, 1988; p. 261).

Many papers have examined the topic of client satisfaction and project success (Gantley, 2007, Chien & Tsaur, 2007; Gorla, Somers & Wong, 2010; Rajan & Baral, 2015; Al-jabri, 2015; Hardaway, Harryvan, Wang & Goodson, 2016; Wimmer & Hall, 2016). From this researcher's critical review of the literature, the area still remains non-conclusive for many different reasons, such as many writers failing to properly contextualise their work; the result of which are many generic sets of suggestions which usually could not be applied to any project in its entirety. This is partly due to the fact that every project is set in a different time horizon comprising all the activities being played out within that particular horizon, both internally and externally to the organisation. Consequently, projects which are run at different points in time will effectively require a different set of competences from all participants. Nevertheless, there is still an unquestionable need to understand the phenomenon of project success and in particular client satisfaction, due to the large sums spent on such implementations by organisations and the reported high numbers of failed projects. This has driven the continued proliferations of papers seeking to answer the ever-elusive question of what those project success factors should be. It may be that the simple answer is, 'it all depends on the context'. However, it is highly doubtful this simple answer would pass scientific rigour without further elucidation.

Baker, Murphy and Fisher (1988, p. 902) asserted that project success is a matter of perception and that a project may be perceived as an 'overall success' if:

'...the project meets the technical performance specifications and/or mission to be performed, and if there is a high level of satisfaction concerning the project outcome among key people on the project team, and key users or clientele of the project effort'

(p. 902)

In their statement, Baker et al. (1988) provided a definition for project success which highlighted satisfaction as an important outcome, and a key determinant when judging a project to be an 'overall success'. From this assertion, it can be said that the satisfaction phenomenon appears to be key to a true overall success. Others have represented the phenomenon in a much broader way. Tuman (1986) stated that project success is: "having everything turn out as hoped ...". (p. 94)

Oliver, Rust and Varki (1997) asserted that the concept of satisfaction includes both cognitive and affective components, and customer satisfaction is both an emotional state and a judgement arising out of the experience of a product or service. The origins of user satisfaction research can be traced back to the 80s, where studies were synthesised into three perspectives by Kim (1989, p.2-3). The three are user satisfaction in terms of:

- attitudes (Lucas, 1973; Bailey and Pearson, 1983; Miller and Doyle, 1987) and
- information quality (Gallagher, 1974; King and Epstein, 1983; Jenkins and Ricketts, 1985) and
- organisational effectiveness (Schultz and Slevin, 1975; Sanders, 1984)

These terms indicate and allude to the behavioural and personal factors previously discussed whilst also pointing out the significance of communication and quality communication for that matter.

Fisher (2011) carried out a combination of a literature reviews, interviews and focus groups, and identified a list of people skills perceived to be the most important for project managers. These include: 1) managing emotions, 2) building trust, 3) communication, 4) motivating others, 5) influencing others, 6) cultural awareness, 7) leading, and 8) team building. It may be perceived from this list that there is linkage between a project manager's mastery of project management tools and techniques, as well as business and general management aptitude, and interpersonal skills.

Judgment and opinions are bases for subjective measures of success as identified by Chan et al. (2004). These measures could comprise a number of elements including client or stakeholder satisfaction, functionality and quality. Project management literature to date has provided no consensus on a definition of project success or a means of assessing it (Ika, 2009); different stakeholders have different perceptions of what success means (Davis, 2017) and, as a result, success is often contested and controversial (McLeod et al. 2012).

Other papers have focused specifically on user satisfaction - and not the wider topic of client satisfaction. User satisfaction focuses on the acceptance, adoption and satisfaction by the users of the implemented ERP system. Costa, Ferreira, Bento & Aparicio (2016) for instance attempted to find the key determinants that contribute to user satisfaction and adoption of ERP implementations. Their outcome showed that top management support, training, and system quality are important constructs to be used in assessing adoption and user satisfaction. Moreover, that system quality in particular has a significant influence on the behavioural intention to use; as well as effect overall user satisfaction with the implemented system. Other studies have also identified the positive impact of management support in guiding and achieving perceived user satisfaction (Nwankpa & Roumani, 2014; Rajan & Baral, 2015). Rajan & Baral (2015) showed that management support is vital and forms user's perceptions of the usefulness of the system, which can in turn yield user satisfaction. In the present study, whilst user satisfaction is not the overall outcome sought, it still forms part of the basis for the desired outcome of perceived client satisfaction.

Some of the criticisms during the years have been expressed in terms of the lack of considerable improvement on the definition of project success (Chan et al. 2004). Müller and Jugdev (2012) also pointed out the lack of a well-established stream. Gunathilaka, et al. (2013) expressed that setting suitable criteria for assessing project success remain unresolved (Cooke-Davis 2002; Ika 2009). Likewise, Padalkar and Gopinath (2016), more recently suggested that research on project success and performance still has an unfinished nature. This is supported by Atkinson (1999) who proposed two stages of 'delivery' and post-delivery' measurement of project success and divided the later one into 'the system' component that includes stakeholders' benefits, and 'benefits' that covers impact on client and business. Thus, it may be that the tangible expected impact on client satisfaction would be experienced rather at a post-delivery stage.

In an attempt to address what they perceived was a lack of sufficient and thorough assessment of ERP success, DeLone and McLean (1992) conducted a comprehensive literature review

into Information Systems (IS) and produced a citing of some 180 articles. They proposed that the success of an IS implementation should be assessed with six factors notably including: User satisfaction, a measurement of users' response to IS implementation output and Individual impact, which measured how users' decision making was impacted by the performance of the Implementation effectiveness. In relation to this study, the point on user impact may be seen to be related. DeLone and McLean (1992) stated that user satisfaction represented a high degree of face validity, indicating how well the system was accepted by its end users and that the rest of five factors (system quality, information quality, use, individual impact, and organizational impact) were either conceptually weak or empirically difficult to be quantified.

Costa, Ferreira, Bento & Aparicio (2016) noted that one of the most commonly mentioned ERP implementation success factors is top management support. Top management should allocate sufficient resources to support the objectives of ERP implementation. An ERP implementation steering committee should be set up to communicate the scope and objectives of the project, to engage the ERP project team, and to monitor the ERP implementation progression (Ali & Miller, 2017). Along the same lines Umble, Haft, and Umble (2003) indicated successful implementations need strong leadership, heavy participation and support of top executives in the organization.

2.5.1 Project Success Concepts

Crawford (2000) expressed that the considerable literature addressing project success falls into three categories – those that primarily examine the criteria by which project success is judged; those primarily examining the factors which contribute to the achievement of success and those that confuse the two. Further, it has been noted by several scholars the multidimensionality of the phenomenon of success (Petter, DeLone and McLean, 2013; Zerbino, et al., 2017). De Wit (1988) set out to answer the question of whether success can be measured and to discuss the purpose that measurement would serve. In his paper, he explained that in any discussion, it is essential to make a distinction between what is project success against what is project management effort. He asserted that, while, good project management can contribute towards project success, it is unlikely to be able to prevent failure (p. 164). He further explained that the most appropriate criteria for success are the project objectives and that the degree to which the objectives have been met determines success or failure. Drawing upon the 'iron triangle', De Wit (1988) expressed the limitation and restrictions faced when judging success on cost, time and quality/performance alone. He stated:

“when measuring project success, one must consider the objectives of all stakeholders throughout the project life cycle and at all levels in the management hierarchy. Therefore, to believe that, with such a multitude of objectives, one can objectively measure the success of a project is somewhat an illusion.” (De Wit, 1988)

De Wit observed that measuring success is a complex exercise and that an initiative is hardly ever considered a total success or failure for all stakeholders during all phases in the project life cycle and appreciated the difficulty and challenge in defining success due to the number of stakeholders involved, who also have their own objectives, leading to several different angles of perception of success. However, client satisfaction was highlighted as a key factor affecting project and process success.

“... Awareness of the critical success factors that influence the project implementation and project outcomes might significantly improve the chances of the overall project success and decrease the risks of failures” (De Wit, 1988).

De Wit (1988) made a distinction between project success and project management success. He pointed out that, for the success of the project, the key is to achieve all the goals of the project, and for project management success, it is reflected in terms of cost, quality and schedule. Cooke-Davis (2002) also supports that project success is different from project management, and that evaluation of project success should be verified through measurement against project goals at project level, while, project management success criteria is traditional performance, as relates to the iron triangle construct of time, cost, quality.

As stated by Low and Quek (2006), neither a standard definition for project success nor an accepted methodology for measuring success exists. They concluded that project success can be achieved by good performance of project managers. The definition of project success they employed during their studies was “completion of a project within acceptable time, cost and quality and achieving client’s satisfaction” (Low and Quek 2006, p. 26). Along the same vein, Markus and Tannis (2000) stated that a successful outcome in ERP implementations represents a multidimensional, dynamic and relative concept. Hence, no one measure of ERP success is sufficient for all the concerns that an organization might have about the ERP experience. Shenhar & Dvir (2007) developed a multidimensional framework for the assessment of project success, which contains five dimensions outlined the Figure 2-2.

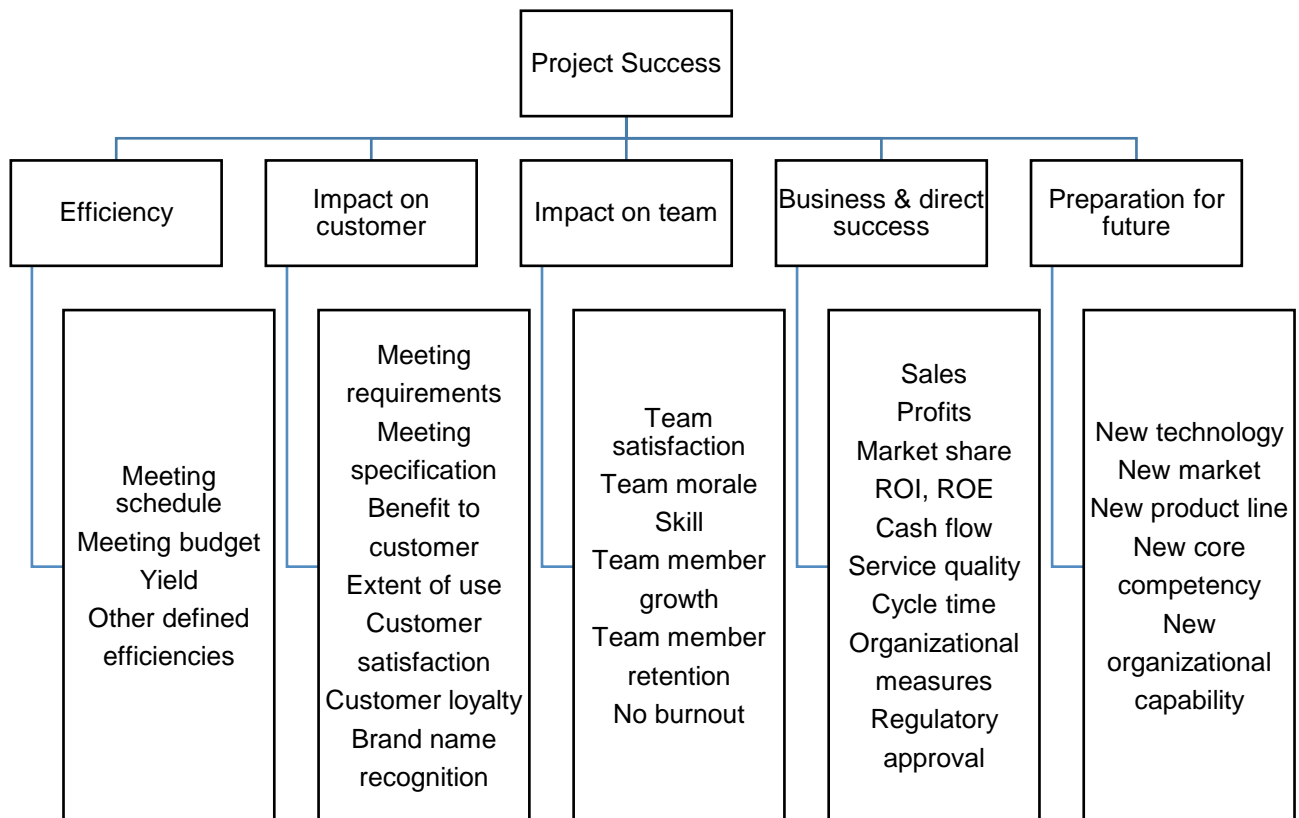


Figure 2-2: Project success criteria (Shenhar, et al., 2007)

The framework by Shenhar et al. (2007) presents five measures to assess project success in both the short and the long term, which are: project efficiency, impact on the customer, impact on the team, business and direct success and preparation for the future (Figure 2-2). Despite providing what appears to be an exhaustive set of measures, it must be noted that the authors further suggested that it may be necessary to define additional success criteria specific to the context of a project. This further emphasizes the high importance of continuing to analyse and understand the topic of 'context' to help arrive at a point where there could be a more generalised framework. They provided an example where Food and Drug Administration (FDA) drug approval would count as an important success criterion for projects in the pharmaceutical industry.

Most of the studies in the ERP critical success literature focus on either project success or correspondence success (Robey et al., 2002), and neglect the other dimensions that focus on the end-users. Since resistance to change by end-users lie "at the root of most ERP

implementation challenges” (Salopek, 2001; p. 28), employee expectations and attitudes play an important role in ERP success (Sower et al., 2001). Likewise, many authors have identified differences in understanding regarding success criteria and success factors (Fortune and White, 2006; Kog and Loh, 2012; Chou et al., 2013; Mir and Pinnington, 2014), the first relate to the particular items of technology that are skilfully built out and delivered to agreed scope in a quantifiable way while the latter may be said to cover the influencing and less tangible items of the implementation which also need to be successful, and should be addressed alongside the former during an implementation.

Belassi and Tukel (1996) carried out a review of literature on project success and grouped the success factors listed in the literature and further described the impact of the factors on project performance. The four groupings are:

- Factors related to the project
- Factors related to the project managers and the team members
- Factors related to the organization
- Factors related to the external environment.

One of the key outcomes of their research is that, when time is considered in the measure of project success, then a project manager’s skills and communication between the team members become more critical. This implies that there is in fact a build-up of criticality along the time continuum of a project, and certain activity such as team and manager skills and communication gain higher visibility and become of greater importance toward the ramp-up to the final delivery milestone.

Aladwani (2002) identified effectiveness and efficiency – called task outcomes – and identified satisfaction – called psychological outcomes – as IS project performance criteria. When considered in relation to a manager within an ERP implementation context, this may be interpreted as the need for an effective manager with the competences to complete the implementation efficiently and to the satisfaction of the key individuals on the client side.

In the 80s, user satisfaction research studies were synthesised into three perspectives by Kim (1989, p.2-3). The three are user satisfaction in terms of:

- attitudes (Lucas, 1973; Bailey and Pearson, 1983; Miller and Doyle, 1987)
- information quality (Gallagher, 1974; King and Epstein, 1983; Jenkins and Ricketts, 1985) and
- organisational effectiveness (Schultz and Slevin, 1975; Sanders, 1984)

2.5.1.1 Stakeholders

There are a wide variety of stakeholders to a project, all with differing objectives. The commitment of these stakeholders to the project needs managing. Understanding different stakeholders' perceptions and ability to influence project outcomes was the theme of Kloppenborg, Stubblebine, and Tesch's (2007) research on sponsor behaviours. In their report they indicated the substantial differences between Executive Sponsors and Project Managers' perceptions about expected levels of engagement from the Executive Sponsors. Closing this gap in understanding is paramount to understanding and perceiving correctly the client satisfaction phenomenon (Kerzner, 2001; 2013). Morris (2009) stated regarding projects that they "*often have a lot of interested parties, several of them carry contradictory objectives*" (p.141). Their correct management must be routed to delivering satisfaction to customers/sponsors (Morris, 2009; Morris, 2013).

PMI (2013) offers the following classification models for stakeholder identification and analysis:

1. Power/interest grid – where stakeholders are classified based on their level of authority versus their concern regarding project outcomes;
2. Power/influence grid - where stakeholders are classified based on their level of authority versus their active involvement regarding project outcomes;
3. to effect changes to the project's planning or execution; and
4. Saliency model – where stakeholders are classified as per Mitchell et al.'s (1997) framework based on power, urgency and legitimacy.

Chung and Crawford (2016) noted that although analytic approaches are commonly useful for categorizing stakeholder identification and engagement, they have an inherent limitation in that they do not account for the role of social networks which may be said to be visceral to the particular development, facilitate and influence human interaction and behaviour. They cited the saliency model postulated by Mitchell, Agle & Wood (1997) – that while it was increasingly popular, it has been criticized for often prioritizing high level or top-ranked stakeholders – often with more power in the organisational sense – that it resulted in under-representation of lower-ranked stakeholder groups. The assertion was being made as such under-represented groups could indeed have greater influences on outcomes. According to Turner (2009a), "in order for a project to be successful, you must agree the success criteria with all the key stakeholders before you start.... To meet this condition, you must make an attempt to identify who most of the key stakeholders are." (p. 47)

Table 2-5 shows the primary stakeholder interested in each of the success criteria. Turner suggested that managers should work on achieving a negotiated compromise, in order to achieve an overall balance which meets the needs of everybody. The table also shows that the final assessment is made at different times.

Table 2-5: Project Success Criteria

Measure of success	Stakeholder	Timescale
The project increases the stakeholder value of the parent organisation	Shareholders	End plus years
The project generates a profit	Board	End plus years
The project provides the desired performance improvement	Sponsor	End plus years
The new asset works as expected	Owner	End plus months
The new asset produces a product or provides a service that consumers want to buy	Consumers	End plus months
The new asset is easy to operate	Users	End plus months
The project is finished to time, budget and to desired quality	All	End
The project team had a satisfactory experience working on the project and it met their needs	Project team	End
The contractors made a profit	Contractors	End

Source: Turner (2009a, p. 50)

Turner (2009a) has provided several suggestions in relation to stakeholder management strategy of which the following were extracted:

- Recognize that extreme change can lead to significant emotional responses which must be managed carefully.
- Turner further provided the stakeholder management process as shown in Figure 2-3, listing a seven-step process for stakeholder management:
 1. Identify interested parties.
 2. Identify possible success criteria.
 3. Identify stakeholders and their interests

4. Develop a stakeholder persuasion strategy.
5. Monitor their response.
6. Monitor the impact of the environment.
7. Make changes to the strategy if necessary.

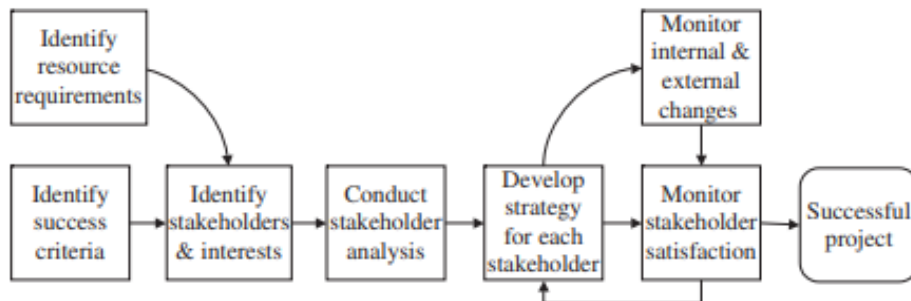


Figure 2-3: Stakeholder management process (source: Turner (2009a, p.77))

PMI (2017) have provided a slightly different take on the project stakeholder management process which contains a shorter list of steps than Turner (2009a) has proposed in Figure 2-3. Recognising the crucial impact of stakeholders seen as the people, groups, organisations that could impact or be impacted by a project, PMI suggested to develop appropriate strategies for effectively engaging such stakeholders in project decisions and executions. The processes proposed are as follows:

1. Identify Stakeholders
2. Plan Stakeholder Engagement
3. Manage Stakeholder Engagement
4. Monitor Stakeholder Engagement

Figure 2-4 provides an overview of the stakeholder management process. PMI (2017) noted that whilst the processes have been presented as discrete processes with defined interfaces, in practice, there are overlaps and interactions between the processes.

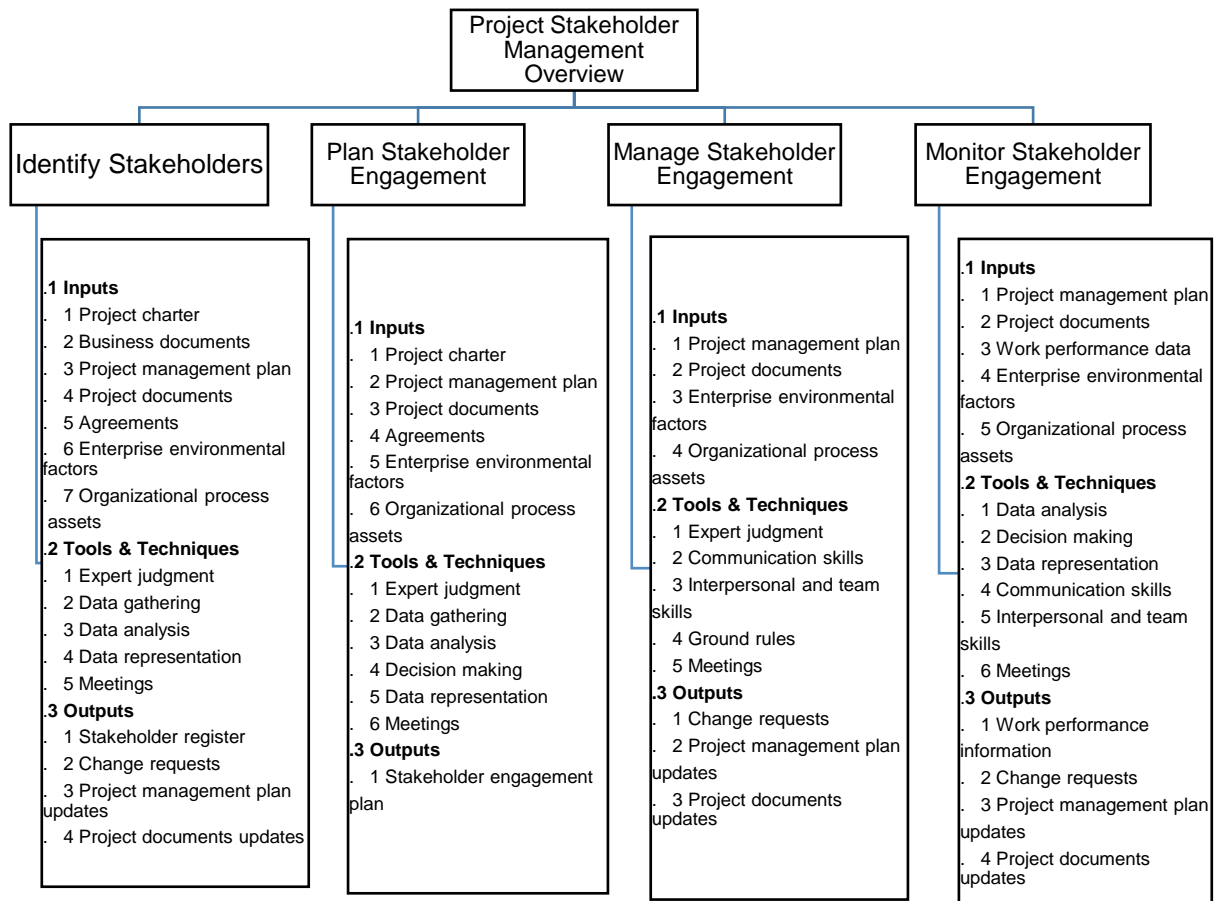


Figure 2-4: Project Stakeholder Management Overview (PMI, 2017)

At a high-level it would appear the suggestions and steps proposed by Turner and that by PMI are very similar. However, PMI also proposed an extension to the traditional definition, a broader definition of stakeholders to include groups such as regulators, lobby groups, environmentalists, financial organisations, the media, and those who believe they are stakeholders. Furthermore, PMI have provided additional trends and emerging practices for stakeholder management which include but are not limited to:

- Identifying all stakeholders, not just a limited set;
- Ensuring that all team members are involved in stakeholder engagement activities;
- Reviewing the stakeholder community regularly, often in parallel with reviews of individual project risks;
- Consulting with stakeholders who are most affected by the work or outcomes of the project through the concept of co-creation. Co-creation places greater emphasis on including affected stakeholders in the team as partners; and
- Capturing the value of effective stakeholder engagement, both positive and negative. Positive value can be based on the consideration of benefits derived from higher levels of

active support from stakeholders, particularly powerful stakeholders. Negative value can be derived by measuring the true costs of not engaging stakeholders effectively, leading to product recalls or loss of organizational or project reputation.

Other project management standards have also provided some guidance on the identification of stakeholders – as elucidated thus:

- Whilst PRINCE2 has not dedicated a separate topic to stakeholders, it is covered under the topic of organisation. The stakeholder management steps proposed are:
 - Identify stakeholders
 - Produce and analyze stakeholder profiles
 - Define stakeholder strategy
 - Plan their involvement
 - Involve the stakeholders
 - Measure the effectiveness
- The International Organization for Standardization (2012) ISO 21500 deals with the topic in the subject group of stakeholders and provided 2 steps for the stakeholder management process as:
 - Identify stakeholders
 - Manage stakeholders

In sum, the main themes coming out of the literature review in relation to client satisfaction as an outcome of ERP implementation is that this desired outcome may be achieved using a combination of both addressing the traditional iron triangle expectations and addressing key stakeholder expectations. Furthermore, after a review of many perspectives on the project success phenomenon and the different proposals and assertions brought forward, it would appear that the bottom line comes to whether all owners of the systems, including users, sponsors, and other impacted parties feel satisfied with the implementation; it may be therein lies the real success. Specifically, it includes ability of the manager and all contributors, followers, peers, other internal or external partners to carry out all agreed features and functions as agreed and specified to budget, and schedule; and to expected satisfaction levels of the client. Key themes coming out of the literature research can be categorised into:

- Perceived managers' effectiveness
- Client acceptance and satisfaction

These themes for perceived client satisfaction are unbundled into four constructs capturing the satisfaction of key stakeholders as well as the effectiveness of the managers at different stages of the implementation lifecycle:

- Senior Management Satisfaction
- User Impact & Satisfaction
- Implementation & Delivery Effectiveness
- Preparation & Planning Effectiveness

2.6 Summary of the Literature Review

This section brings together a summary of the literature review outcomes. The literature review has provided a background for exploring whether the relationship between managers' ERP leadership competences and perceived client satisfaction is moderated by the ERP implementation context. The literature review has drawn upon a wide range of studies and pulled together the key findings identified in the literature. It has been demonstrated that this is an area with extensive studies, with many suggestions as to what makes clients satisfied with an implementation as well as studies that expound the dynamics of an ERP implementation context. One antecedent to the question being addressed in the current work relates to the definition provided by Baker et al (1988), where they asserted that project success is a matter of perception and that a project may be perceived as an 'overall success' if:

'...the project meets the technical performance specifications and/or mission to be performed, and if there is a high level of satisfaction concerning the project outcome among key people on the project team, and key users or clientele of the project effort' (p. 902)

This assertion invites researchers to test for, inter alia, client satisfaction as a measure of "overall project success". However, other studies were found which have focused on user satisfaction (such as Costa et al. (2016)) but not the wider client satisfaction,

It has been noted from studies in ERP critical success literature that most of the focus so far has been on project and implementation success, thereby inadvertently or otherwise, suggesting other dimensions such as client related ones are not as important. Since resistance to change by employees lie "at the root of most ERP implementation challenges" (Salopek, 2001; p. 28), it can be said that client and employee expectations and attitudes play an important role in ERP success (Sower et al., 2001) and therefore should be subsumed into the

overall measures of success and addressed during the implementation. Closing this gap in understanding is paramount to understanding and perceiving correctly the client satisfaction phenomenon.

The literature review has also shown the multidimensionality of the phenomena of success (Petter, DeLone and McLean, 2013; Zerbino, et al., 2017). Different stakeholders have different perceptions of what success means (Davis, 2017) and, as a result, success is often contested and controversial (McLeod et al. 2012). With this highlighting of stakeholders as key determiners of success in its different dimensions, a review of stakeholder literature was further carried out, showing proposals from the literature on their management in relation to engaging and obtaining their support along the implementation journey (Turner, 2009b; PMI, 2017). This in turn emphasised the key competences required of a manager to manage the pertinent stakeholder interactions. Literature reviewed looked at the competences required of ERP project managers and Information Systems managers in general in order to be successful on implementations and several assertions were extracted, for example, Kræmmergaard and Rose (2002) listed Business, Technical and Personal competences. Other similar proposals comprised: Knowledge, Performance, Personal (PMI, 2017); People, Practice, Perspective (IPMA, 2015) and People, Perspective, Practice (ICB, 2015). A common theme across the proposals was identified as the personal competences.

In sum, the literature review establishes the pertinent insights into the topic areas derived from the research question – which were in turn gained from several sources through a rigorous and critical review of key literature identified. Moreover, it attempts to further enlighten the contingency theory by contributing a new ERP adoption and satisfaction model. Contingency theory provides the appropriate theoretical stance for the present study. Hence, this study also attempts to add further support to the foundations of the Contingency theory by providing the Model of ERP Leadership-Competence-based Theory of Perceived Client satisfaction.

2.6.1 Knowledge Gaps from the Literature Review

Based on the critical review of the literature carried out and the needs identified, as well as the follow-on questions raised, the following knowledge gaps are identified:

1) Perceived Client Satisfaction

From the extensive literature and critical review carried out in this chapter, it was identified that there is still a gap in literature in relation to studying the relationship

between managers' leadership competences and perceived client satisfaction on an ERP implementation. Furthermore, the literature searches did not identify any studies focused on researching how an ERP context moderates the relationship between such competences and perceived client satisfaction on an ERP implementation. As already discussed, even though Costa et al., (2016) reviewed satisfaction, their focus was on user satisfaction with the adoption of ERP implementations - and not the broader client satisfaction.

2) ERP Implementation Context

Whilst several studies have identified context in relation to Project success and critical success factors (Thamhain and Wilemon, 1977; Maylor, 2003; Crawford, 2005; Pellegrinelli et al., 2007; Ika, 2009; Shao, 2010; Van Scoter, 2011), much fewer have addressed ERP context in relation to perceived client satisfaction. Hence, no constructs and measurements were identified for the concept of perceived client satisfaction in relation to an ERP implementation; even though there does exist several works that have also studied the moderating effect of context. Such include Shao (2010) who conducted research to investigate the relationship between program managers' leadership competences and program success, and the role of context on the relationship. Van Scoter (2011) studied the impact of contextual factors on the critical success factors during Enterprise system implementation projects. However, her focus was on CSFs and not client satisfaction.

3) Relationship between Managers' ERP leadership competences, client satisfaction and ERP context

Much research has been carried out attempting to draw out the relationships between managers' leadership competences in relation to program as well as project success. For instance, Geoghegan and Dulewicz (2008) tested the relationship between project managers' leadership competences and project success, Crawford (2000) explored the relationship between assessment of project management competence and perception of performance in the workplace; However, these studies were not focused on ERP implementations. Haq (2016) studied impact of ERP leaders' EI competences on ERP success; however, context was not studied.

Thus, as already elucidated in the literature review, the angle of perceived client satisfaction has been argued to be a relevant yardstick to measure project success and in so doing, the understanding of both the competences of the ERP leader and the moderating effect of

contextual factors have also been argued to be important contributors to literature in the area. Accordingly, the current study purports to close the identified gaps in the literature.

2.6.2 Hypotheses

Based upon the gaps that have been identified in the previous sub-sections of this chapter, the following 2 main hypotheses are derived and proposed at this stage:

- H1 There is a positive relationship between Managers' ERP leadership competences AND Perceived Client Satisfaction
- H2 ERP implementation context moderates the positive relationship between Managers' ERP leadership competences AND Perceived Client Satisfaction

The research hypotheses and the preliminary research model proposed is further developed as data on ERP implementation context and perceived client satisfaction are analysed in the following Chapters. The refined hypotheses are then provided afterwards during the development of the study in the Methodology and Analyses Chapters.

2.6.3 Initial Research Model

The initial working research model for the current study is illustrated in Figure 2-5, only based on the literature review at this stage - and shows that the relationship between Managers' ERP Leadership Competences and Perceived Client Satisfaction is fully moderated by the ERP Implementation Context.

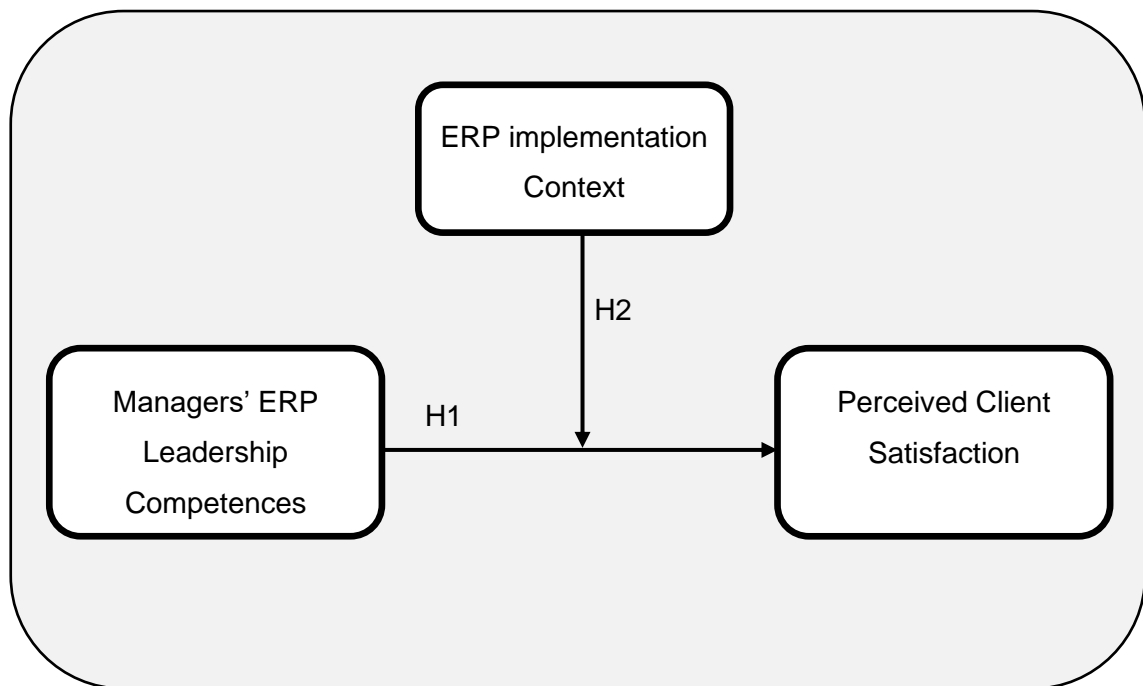


Figure 2-5: Moderation of the relationship between managers' ERP leadership competences and perceived client satisfaction by the ERP implementation context

The next chapter (chapter 3) goes on to document the research methodology employed in the current study, starting with the basis and rationale for the methodology and approach adopted and providing details of the approach to the analyses which is described in chapter 4.

3 Research Methodology

3.1 Introduction

The purpose of this chapter is to present the research methodology and related issues, and report on the pilot study and the main research. This chapter begins by providing the rationale for the chosen research paradigm and research design. The research methodology adopted is to conduct an empirical research using a positivist (quantitative) approach. The methodological considerations and research philosophy are discussed, after which the pilot study is reported. Thereafter, the main research is described. A summary of the chapter is provided in the last section.

3.2 Selecting a Research Paradigm

A number of researchers (e.g. Cresswell, 1994; Easterby-Smith et al., 1994; and Remenyi et al., 1998) have all noted that the selection of a research paradigm, the philosophy and methodology adopted for the research, must follow the selection of a topic, taking into consideration pertinent resource availability and skills of the researcher, including their worldview – which also play important roles in the choice. The research methods employed along with the analysis techniques adopted are determined by the researcher's underlying philosophical view of the reality under investigation. Easterby-Smith, Thorpe & Jackson (2008) asserted that philosophical knowledge supports a researcher in clarifying which research designs would work for a particular study and may even help the researcher create designs outside their own experience.

Typically, the key methodological alternatives are presented as a distinction between the two main types of research which are qualitative and quantitative. However, it was asserted by Bergman (2010) that qualitative and quantitative analysis techniques do not necessitate a particular view of reality, privilege a specific research theme and method, or necessarily determine the truth outcome of data or relationship between the researcher and the subject. As noted by Alversson & Skoldberg (2009), it is ontology and epistemology rather than methods which are the determinants of good social science. Bergman (2010) defined a research paradigm as "... an organizing framework that contains the concepts, theories, assumptions, beliefs, values, and principles that inform a discipline on how to interpret the subject matter of concern". The ontological perspective of the paradigm inspects the nature of

the subject of interest. The epistemological stance seeks to clarify the approach to unravelling the knowledge held in the subject of interest.

3.2.1 Ontology and Epistemology

The present study adopts a realist ontology and a positivism epistemology. The realist seeks a deep knowledge and understanding of a social situation. It argues against single concentration on observed events and requires an understanding of the deeper structures and mechanisms that often belie the surface event level observation. While discussing the polarity between hard and soft approaches in Information Systems (IS), Fitzgerald and Howcroft (1998) presented positivism as having a foundational element of a realist ontology. They made a case for employing a traditional view of realism within the IS arena, as it reflects the historical focus of its use alongside positivist epistemologies and quantitative, confirmatory and laboratory-focused methodologies. A modern realist approach addresses the positivist leanings emphasised by Fitzgerald and Howcroft (1998) and founded on the writings of the social sciences philosopher Bhaskar (1978, 1979). Burrell and Morgan (1979) define positivism as an epistemology “which seeks to explain and predict what happens in the social world by searching for regularities and causal relationships between its constituent elements”. Kolakowski (1972) states that positivism embraces a four-point doctrine, namely:

- 1) the rule of phenomenalism - which asserts that there is only experience; all abstractions be they 'matter' or 'spirit' have to be rejected;
- 2) the rule of nominalism – which asserts that words, generalizations, abstractions, etc. are linguistic phenomena and do not give new insight into the world;
- 3) the separation of facts from values; and
- 4) the unity of the scientific method.

Hirschheim (1985) asserted that the position adopted by the positivist is that of realism. He explained that realism postulates that the universe is comprised of objectively given, immutable objects and structures, and that they exist as empirical entities on their own, independent from the observer's appreciation of them. The alternative ontology is that of relativism. It holds that realism is a subjective construction of the mind. What is subjectively experienced as an objective reality exists only in the observer's mind.

3.3 Methodological Considerations

This research is positivist in nature and thus aims to find conclusions obtained through objective measures, as opposed to 'being inferred subjectively through sensation, reflection or intuition' (Easterby-Smith et al., 2009: p. 57).

The purists assert that qualitative and quantitative methods are based on certain paradigms that make different assumptions about the social world, about how science should be conducted, and what constitutes legitimate problems, solutions, and criteria of "proof" (Kuhn, 1970). It appears these differences have been addressed extensively in several articles, and there is considerable agreement or consensus regarding what they are (Guba, 1978). Four differences are most relevant for their analysis:

- 1) Assumption about the world – Quantitative research is based on positivist philosophy which assumes that there are social facts with an objective reality apart from the beliefs of individuals. Qualitative research is rooted in a phenomenological paradigm which holds that reality is socially constructed through individual or collective definitions of the situation (Taylor & Brogdan, 1984).
- 2) Purpose – Quantitative research seeks to explain the causes of changes in social facts, primarily through objective measurement and quantitative analysis. Qualitative research is more concerned with understanding the social phenomenon from the actors' perspectives through participation in the life of those actors (Taylor & Brogdan, 1984).
- 3) Approach – The quantitative researcher typically employs experimental or correlational designs to reduce error, bias, and other noise that keeps one from clearly perceiving social facts. The typical qualitative study is ethnography which helps the reader understand the definitions of the situation of those studied (Cronbach, 1975)
- 4) Researcher role – The ideal quantitative researcher is detached to avoid bias. The qualitative researcher becomes "immersed" in the phenomenon of interest. (Taylor & Brogdan, 1984).

A pilot study was conducted to garner insight from practitioners and those insights were used in building the questionnaire for the follow-on quantitative study; specifically, the aspects of the questionnaire that measure managers' ERP leadership competences, perceived client satisfaction and ERP implementation context. Amalgamated with this questionnaire is the Emotional Intelligence Questionnaire (EIQ), a part of a tried and tested instrument, the Leadership Dimensions Questionnaire (LDQ), to measure managers' EI elements. Although, the LDQ has two additional dimensions, MQ and IQ, these dimensions were not used in the current study. As described in section 3.6.5.7, the dimensions were removed from the questionnaire in order to reduce the number of questions in the questionnaire and hence gain more respondents – to meet sample size requirements.

3.4 Pilot Study

Whilst the LDQ had been identified for use to measure managers' EI, the criterion variable, client satisfaction and the moderator variable, ERP implementation context, have not been defined well enough in the literature to fit the present study. Consequently, in order to provide an instrument for collecting quantitative data which could be used to test the research model, it was necessary to conduct a qualitative study which would then generate insights on the variables to be analysed from ground-up, to be used in developing the preliminary constructs and measurement scales. The pilot also provided a feasibility check for the research and the responses from practitioners showed there is substantial interest in the area. Furthermore, it provided an opportunity to glean from practitioners, their own perception on ERP implementation leadership.

As the current work is a quantitative study the pilot was carried out as a pre-cursor to the design of the quantitative questionnaire. The purpose of the pilot was to generate insights from ERP implementation practitioners in order to build preliminary constructs for the concepts in the research model, such as the ERP implementation context within which the manager operates and competences required from a manager in order to be perceived as effective. Secondly, it was to test the draft research proposal in terms of its scope, approach and design as well as obtain some initial feedback on interest in this area.

3.4.1 Instrument Design and Development

As there were no 'proven' instruments to assess the variables of ERP implementation context, perceived client satisfaction and ERP leadership competences, this pilot was necessary to develop the constructs required. Five different sets of questions were addressed in the semi-structured interviews, as shown in the interview protocol (Appendix C). These questions are an adaptation of questions used by Shao (2010). However, as those questions were designed to measure program context and program success, it was necessary to adapt them to measure ERP implementation context and, perceived client satisfaction. The five sets of questions addressed:

1. The nature of the companies and the nature of the ERP implementation the interviewees last led.
2. Manager effectiveness and Client satisfaction criteria
3. Managers' ERP Leadership Competences – the competences required of a manager when implementing ERP, including to tackle / address issues faced along the way.
4. ERP Implementation Context– nature of the environment and factors which managers have to address during implementation.
5. Final comments from practitioners.

The first set of questions were developed to collect information on ERP implementations and related parent organizations in order to get a reasonably complete picture of setup in those implementations, such as the type of implementations, sizes, life-cycle stages and role of managers etc. The second set of questions inquired about perceptions used to judge manager effectiveness and client satisfaction. The third set of questions interrogated the ERP implementation context from an internal perspective, with a view to understanding the important dynamics within the context managers operate. The fourth set of questions explored the nature of the External environment around the ERP implementation context which may impact the implementations, managers' effectiveness and client satisfaction measures. The last set of questions was designed to give the interviewees an opportunity to summarise their comments and add anything they might have missed, relevant to the research subject.

The typical interview would begin with the researcher providing a background to the research project and the benefits of participation. An explanation of the topic of research and what was expected of them during the interview was provided. Upon consultation with the interviewees

the interviews were recorded. The recordings provided a good source for comparison with notes taken during the interviews and upon completion of each interview, both the notes and interview write-ups were compared for cross validation. Due care was taken to reassure participants that their responses would be held confidentially and anonymously to allay any fears their responses could potentially be reported to their organisations.

3.4.2 Sampling

The sampling method used for the interviews is theoretical sampling. In this method, interviews are held with individuals who are perceived to hold the best knowledge of the research subject – subject matter experts. The data collection strategy, which included interviewees from 5 countries, namely the United Kingdom, Sweden, Germany, Canada and the United States of America, aimed for a broad variety geographically as well as a range of implementation types, to achieve the highest level of generalisability for the later results of the quantitative study.

Ten practitioners had originally been approached. However, only 6 were able to make the interviews within the given time-frame. The participants held the positions of Program and Project manager. Two were designated as Program managers while the remaining four were designated as Project managers. Furthermore, the participants were a mixture of Contractors and Consultants representing a Consultancy brought in by the end-client to implement the systems. None were direct employees of the end-client. Within the organisational context they were classified as middle managers or higher within their organisational hierarchy. All managers had achieved at least a university degree and had more than 5 years' experience managing ERP implementations. Four out of the six managers had additional ERP related Professional certifications – including SAP Certified Associate, Prince II and PMP.

3.4.3 Data Analysis Method

Content analysis was originally developed in the field of communication but is now widely used across the disciplines (Leavy, 2017). Qualitative content analysis is inductive, with codes and themes developing out of a recursive process of data collection and analysis (Hesse-Biber & Leavy, 2005, 2011). One inductive approach to employ is grounded theory. Grounded theory, developed by Glaser and Strauss (1967), refers to an approach by which one collects and analyzes data, develops new insights, and then uses those insights to inform the next round of data collection and analysis. Roller and Lavrakas (2015) define qualitative content analysis as “the systematic reduction . . . of content, analyzed with special attention to the context in

which it was created, to identify themes and extract meaningful interpretations of data” (p. 232). To identify codes and develop categories, a coding process was employed through using the constant comparative method as described by Glaser and Strauss (1967). Once data was coded, it was important to look for patterns and the relationships between codes. Categorizing is the process of grouping similar or seemingly related codes together (Saldaña, 2013).

Outputs of the analyses process performed are provided in Appendix A. As planned the outcome themes and categories informed the formation and development of the quantitative questionnaire used to collect data for the Main study.

3.4.4 Validity and Reliability of Pilot

To ensure credibility of the research the quality checklists for qualitative study suggested by methodologists, Miles & Huberman (1994) were considered to inspect the analysis processes and the results. In the present qualitative study, the reliability and validity are assured by considering the following:

- Reliability
 - Interview protocol was reviewed by supervisor
 - Data were collected from various industries and countries
- Internal validity
 - Data were well linked to the existing theories
- External validity
 - Sampling diversity to encourage broader applicability
 - Findings are partly supported in existing theory

These quality measures are embedded in the research process.

3.4.5 Quantitative Questionnaire Design Considerations

3.4.5.1 ERP Leadership Competences Constructs

As already mentioned, the EIQ section of the a proven psychometrical instrument Leadership Dimensions Questionnaire (LDQ) is used to measure leadership competences: EI of the managers, Leadership Performance and Follower Commitment, while a new instrument is developed to measure other implementation competences – specifically referred to in the current study as manager (or management) capabilities to bifurcate the two aspects of managers’ competences being addressed. The tailored questionnaire can be seen in Appendix B.

Once data was coded following the process described by Glaser and Strauss (1967), it was important to look for patterns and relationships between codes. By categorizing similar or seemingly related codes together (Saldaña, 2013), the high-level categories were identified and a preliminary construct structure for ERP managers' capabilities concept is proposed. The managers' capabilities construct structure consists of two high-level categories of measurements, which are:

- Implementation efficiency

Measures managers' capability in terms of manager's capability to plan for and monitor the traditional iron triangle elements as well as managing risks, hiring adequately skilled team members and using relevant project management tools to drive the implementation.

- Impact on implementation members

Measures managers' impact on team members and peers, their trustworthiness and reliability as well as the general atmosphere during the implementation.

Table 3-1 shows the categories and questionnaire items incorporated for the constructs and measurement scales for managers' ERP managers' capabilities. These items provided input into the questions developed on the Likert scales in the relevant sections of the question design as shown.

Table 3-1: Categories and questionnaire items for Manager Capabilities

Questionnaire - Section C	
Implementation Efficiency	1. Manager's capability at planning and monitoring (Time) 2. Manager's capability at planning and monitoring (Cost) 3. Manager's capability at planning and monitoring (Quality) 4. Manager's capability at planning and monitoring (Scope) 5. Manager's capability to identify Risks and find counter-measures 6. Manager's capability to resource adequately skilled team members 7. Manager's capability to use relevant tools and applications for project planning and monitoring
Impact on Implementation members	14. Manager's relationship with peers 15. Support from peers and team members in achieving goals 16. Receive adequate respect from peers and team members 17. Did team find manager to be reliable and trustworthy 18. Team worked in a satisfactory atmosphere 19. Impact on offshore team members 20. Communication with offshore team members

Source: Author's questionnaire

3.4.5.2 ERP Implementation Context Constructs

Insights and outcomes of the interview with practitioners and the further qualitative analysis were utilised to generate the constructs of ERP implementation context. The results from data analysis of the interviews provide a preliminary construct structure for the concept of ERP implementation context. This construct structure is used to illustrate the characteristics of ERP implementation context, and have been identified to consist of:

- Implementation problems
Explains the relationships of implementation and the context it is happening under, such as the relationships between programs and functional departments in the parent organisations, etc
- Lack of support during implementation
Measures how supportive the implementation context is, in relation to top management support, resources availability for the implementation, organizational learning in the parent organizations etc, for example, how easily available are the required resources.
- Constraints due to Cultural dynamics of implementation context
Explains the interactions between implementations and the cultural context it operates under, such as the fit between implementation approach and the organisations' cultural dynamics, etc

In order to test each construct, questions that reflect the attributes and characteristics of that construct were formulated in order to capture the essence of each construct. Where possible and appropriate, existing validated questions were introduced to measure the construct.

Table 3-2 shows the categories and questionnaire items incorporated for the constructs and measurement scales for managers' ERP managers' capabilities. These items provided input into the questions developed on the Likert scales in the relevant sections of the question design as shown.

Table 3-2: Categories and questionnaire items for ERP Implementation Context

Questionnaire - Section B: Implementation Context	
Implementation Problems	1. system and infrastructure availability 2. difficult client 3. vendor and supplier issues 4. corporate issues (e.g. change of sponsor, budgetary amendments, etc.) 5. scope creep 6. off-shore resource issues
Lack of Support	7. support from top management for your implementation 8. extent to which you got the human resources needed for your implementation 9. extent to which you got the funding needed for your implementation 10. extent to which the systems and infrastructure were readily available when needed 11. extent to which the system was accepted by the individuals in the client organization
Constraints from Context Culture	12. How manager's effectiveness was constrained by client organization's culture 13. How manager's effectiveness was constrained by own team's culture 14. How manager's effectiveness was constrained by parent company's culture 15. How manager's effectiveness was constrained by culture of the country of implementation 16. How manager's effectiveness was constrained by culture of the off-shore team

Source: Author's questionnaire

3.4.5.3 Perceived Client Satisfaction Constructs

Similar to the ERP implementation context concept, perceived client satisfaction was developed using insights garnered from practitioners on how to judge client satisfaction based on relation to managers effectiveness, as well as using literature and models in the area of manager effectiveness (Crawford, 2000; Shenhar & Dvir, 2007; Pinto & Slevin, 1988; Cooke-Davies, 2002; Turner, 2009b).

By constantly comparing the codes, a number of categories were identified. The outcome characteristics provided some direction for developing the constructs and measurement scales for the perceived client satisfaction dimension. This provided input into the questions on the Likert scales in the relevant sections of the question design.

A preliminary construct structure for perceived client satisfaction concept is proposed. The client satisfaction construct structure consists of two high-level categories of perceived client satisfaction measurements, which are:

- **Impact on stakeholders**
Measures client satisfaction in terms of the manager’s influence on stakeholders, such as stakeholders’ satisfaction, stakeholders’ engagement etc.
- **Effectiveness during implementation phases**
Measures client satisfaction in terms of the manager’s effectiveness at different phases of the implementation. For instance, the Final Preparation and Go Live stages are crucial and stressful and generally requires the ability to handle the unexpected, while remaining calm and focused.

Table 3-3 shows the categories and questionnaire items incorporated for the constructs and measurement scales for managers’ ERP managers’ capabilities. These items provided input into the questions developed on the Likert scales in the relevant sections of the question design as shown.

Table 3-3: Categories and questionnaire items for Perceived client satisfaction

	Questionnaire – Section C
Impact on Stakeholders	8. Whether users' specifications were met
	9. Impact on customer satisfaction
	10. Impact on user satisfaction
	11. Sponsors satisfaction
	12. Relationship with senior management
	13. Communication and updates to Senior management
Effectiveness during Implementation Phases	21. Effectiveness at Project Preparation phase
	22. Effectiveness at Blueprint phase
	23. Effectiveness at Realization phase
	24. Effectiveness at Final Preparation phase
	25. Effectiveness at Go-Live and Support phases

Source: Author’s questionnaire

3.4.6 Summary of Pilot Study

The pilot, conducted between February 2010 and July 2010 sought to garner insights from ERP implementation practitioners using a Qualitative approach. The study was carried out for two main purposes. One, to provide a basis for the construction of the questionnaires to be used in the main research; and two, to test the feasibility of the research. The pilot helped to provide a link between theory and practice directly from the field and substantial congruence was found between the two. It started with a qualitative study. An initial pilot study was conducted, using six semi-structured interviews with ERP program and project management practitioners in Sweden, Germany, Canada, United States and the United Kingdom. The 6 interviewees were all experienced program and project managers who have managed ERP implementations for several years. Each interview lasted about one hour. The aim of the study was to generate insights from practitioners in order to build preliminary constructs for the concepts in the research model, such as the ERP implementation context and competences required from a manager in order to be perceived as effective and to deliver client satisfaction. The pilot showed substantial congruence in the comments made by the practitioners and those identified in the literature review - for example by Mousseau & Patrick (1998) and Shao (2010). The results from the qualitative study, shown in Appendix A, were used as a basis for the development of a follow-on questionnaire for the main study.

3.5 Main Study

Upon the basis of the qualitative study carried out in the previous section, a quantitative study was carried out. Initially, two web-based questionnaires were developed to collect information from ERP implementation leaders. The first questionnaire was directly based on the outcome of the qualitative study, while the second questionnaire, a proven psychometric questionnaire, the Leadership Dimensions Questionnaire (LDQ) was planned to measure managers' EI, Leadership performance and Follower commitment. Figure 3-2 shows a diagrammatic representation of the approach proposed by Blaxter (1996) to be followed during a quantitative research process. This approach has been considered in the development of the current quantitative research.

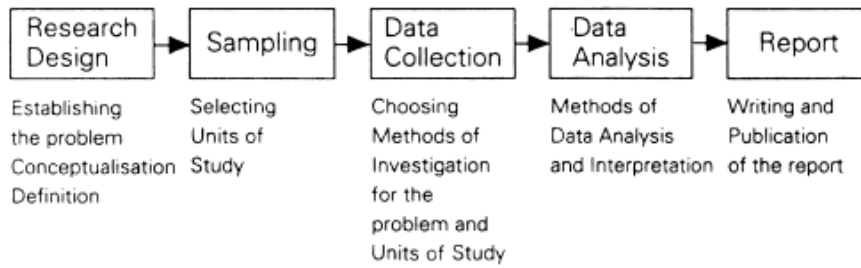


Figure 3-1: Representation of the research process (Blaxter, 1996, p.7)

3.6 Questionnaire Design

This section describes the approach taken for the design of the quantitative study. A cross-sectional design was employed. The research model is tested using a web-based questionnaire – an amalgamation of two questionnaires.

3.6.1 Questionnaire Design Process

Acknowledging the important role of the questionnaire, numerous researchers offer suggestions on the questionnaire design process (i. e. Aaker, 1997; Churchill 1999). To a great extent, these recommended processes are similar. Despite questionnaire design being more of an art form than a scientific undertaking (Aaker, 1997), these rules or guidelines offered by experienced researchers can be very helpful to inexperienced researchers. They are particularly useful in avoiding serious errors (Kinner and Taylor 1996). Table 3-4 presents the procedure for developing a questionnaire as suggested by Churchill (1999). This research is guided, but not restricted, by the procedure recommended by Churchill.

Table 3-4: Procedures for developing a questionnaire

Step 1	Specify What Information will be sought
Step 2	Determine Type of Questionnaire and Method of Administration
Step 3	Determine Content of Individual Questions
Step 4	Determine Form of Response to each Question
Step 5	Determine Wording of Each Question
Step 6	Determine Physical Characteristics of Questionnaire
Step 7	Re-examine Physical Characteristics of Questionnaire
Step 8	Re-examine Steps 1-7 and Revise if Necessary
Step 9	Pre-test Questionnaire and Revise if Necessary

Source: Churchill (1999, p. 329)

3.6.2 Sample Design

The sample design discussion follows the sampling procedures suggested by Churchill (1999) as outlined in Figure 3-3. It starts with defining the population and ends with collecting the data from the designated element.

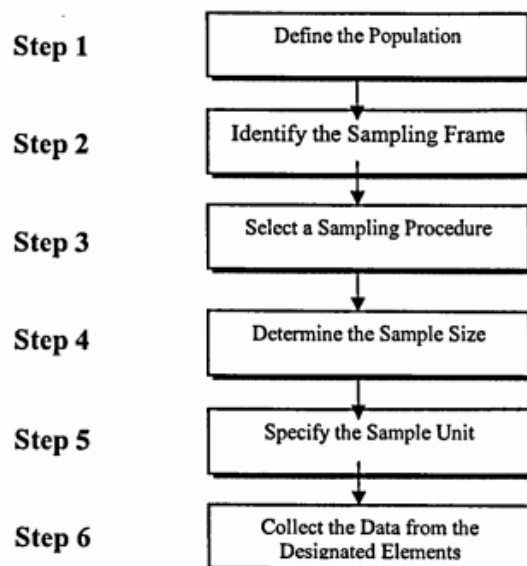


Figure 3-2: Six-steps for drawing a sample (adapted from Churchill, 1999; p. 498)

3.6.3 Sampling Procedure

The sampling strategy this research study used was homogeneous sampling. All participants needed to qualify based on being senior ERP consultants experienced in managing the implementation of ERP systems. The first questionnaire was directly based on the outcome of the qualitative study, while the second questionnaire, a proven psychometric questionnaire, the Leadership Dimensions Questionnaire (LDQ) was planned to measure managers' EI and Leadership competences. Initially, it was difficult to locate respondents who fit the suitability criteria for the research population to complete the 2 separate questionnaires. See section 3.6.5.8 which describes the challenges experienced during the process. Due to the difficulties experienced in obtaining a sufficient number of respondents even after 5 years of trying, it was agreed between the current researcher and his two supervisors to create a shorter questionnaire by amalgamating the two separate questionnaires into one questionnaire and further removing the MQ and IQ dimensions of the LDQ. For the number of observations to be adequate for analysis, it was necessary to reduce the number of variables from the original 25

to 17 variables. Afterwards, the questionnaire was distributed via previous and present colleagues to ERP implementation management practitioners, to both independent Contractors and Consultants working for a consultancy implementing ERP systems, who held the positions of Program, Project manager or Implementation lead – and who had previously led ERP implementations.

Additionally, the researcher contacted the Project Management Institute (PMI) to get some support for the study by helping to send out the survey link to their members. PMI showed a reasonable amount of interest in the work and further helped display details of the research on their portal. A sample of one of the letters of support from PMI is shown in Appendix C, Exhibit 1.

Furthermore, social media such as LinkedIn proved invaluable as they allowed the researcher to join ERP-centric groups and network with potential participants. This yielded support for the research and completions of the questionnaire by the target population of individuals meeting the criteria. Group members from nine identified ERP user groups were invited to take part in the study. Additionally, the researcher searched through members of the groups to identify qualified individuals and then sent personal requests to them to ask for their support in completing the questionnaire.

The user groups and professional discussion forums where a request for questionnaire completion was posted included:

- SAP Education UK - SAP Education, Training & Certification
- ERP Change & Project Management
- ERP Project Management
- SAP Professionals - in association with Nicholas Bernard Ltd -
- SAP Certified Consultants
- SAP People (33000+ Member)
- SAP Professionals of America

Even though a total of 25 variables had been available in the reduced study, 83 useable responses were received upon closure of the survey. To meet the rule requiring the number of observations to be 5 times number of variables (Hair et al., 2010), there was a reduction of the number of variables to 17 variables (with sub-questions), used in the final quantitative study.

3.6.4 Informed Consent

Consent was required from participants via a cover note provided at the beginning of each survey, informing them of what the data would be used for and letting them know that by completing the survey, rights were being given to the researcher to analyse their data for the purposes of their doctoral dissertation. The explanation of informed consent that advised participants of their right to refuse to participate in the study or to stop participation at any time was also included. Survey participants were also informed of the researcher's protection of participants' personally identifiable information as required. Participants were informed that the use the survey was for academic research purposes only and their participation was strictly confidential.

To maintain anonymity, no personally identifiable information, such as name, address, or company they work for, and so forth, was collected during the survey, thus they could not be asked to sign a separate consent form but to read and accept as required. The method of communication of this consent was to have it written out on the first page of the survey completion site prior to beginning the survey. This consent form can be found in the Appendix B.

3.6.5 Data Collection Instrument

3.6.5.1 Constructs and Measures

Table 3-5 describes the instrument used to collect the research data. As mentioned, data were collected by combining two instruments into one instrument to measure Managers' ERP Leadership Competences: MELC, ERP Implementation context: ERPIC, and Perceived client satisfaction: PCSAT to test stated hypotheses.

For each construct, several questions were asked to help determine a reasonable level of measurement. Existing validated questions were used as much as possible if appropriate to measure the construct. The results from interviews were also used to develop questions for each construct. Table 3-5 shows the relationship between constructs, scales and sources.

Permission to use the LDQ instrument for the current research was requested and obtained from Professor Dulewicz, one of the originators of the instrument. The second part of the LDQ

research editions also includes two other scales which are designed for research purposes exclusively. The first provides a self-assessment of leadership performance. It contains 6 items and is reliable (alpha = .7). The other scale assesses the degree of commitment that followers show to the organisation and team in which they work, a construct that includes job satisfaction. It contains 5 items and also shows acceptable reliability (alpha = .7) (Dulewicz & Higgs, 2016). The EIQ aspect of the LDQ was previously tested for reliability and validity in prior research (Young & Dulewicz, 2006; Turner & Müller, 2006; Shao, 2010). However, because the instruments are combined for this study, Cronbach's alpha coefficient was reassessed to check for internal consistency of the combined scales (Creswell, 2009; Pallant, 2010). A demographic section was included at the end of the survey to collect data on the control variables.

Table 3-5: Variable Classes and Measures

Latent Construct	Observed Variable	ID	Type
Perceived Client Satisfaction (PCSAT)	Senior Management Satisfaction	SNRMGTSAT	DV
	User Impact and Satisfaction	USRIMPSAT	
	Implementation & Delivery Effectiveness	IMPDEVEFF	
	Preparation & Planning Effectiveness	PREPPLNEFF	
Managers ERP Leadership Competences (MELC)	Emotional Intelligence Elements	EI_TOTAL	IV
	Leadership Performance	LPERF	IV
	Follower Commitment	FCOM	IV
	Team & Peer Cooperation	TMPRCOOP	IV
	Delivery Capabilities	DELCAP	IV
	Project Management Knowledge	PMK	IV
	Offshore Team Relations	OSTMREL	IV
ERP Implementation Context (ERPIC)	Organizational Change Problems	OCPRB	MV
	External Partnership Problems	EPPRB	MV
	Resource Availability Problems	RAVPRB	MV
	Cultural Problems	CULTPRB	MV

Note: DV = Dependent Variable; IV = Independent Variable; MV = Moderator Variable

3.6.5.2 Control Variables

The control variables used in the analysis were Size of project and Number of years leading projects. As noted by Creswell (2009), Control variables in quantitative research help determine the true influence of the independent variable on the dependent variable.

3.6.5.3 Managers' ERP Leadership Competences

Managers' ERP Leadership Competences is represented in the current study using the 7 variables identified through literature and through the pilot study previously discussed. They are:

- Emotional Intelligence (Total Score)
- Leadership Performance
- Follower Commitment
- Team & Peer Cooperation
- Delivery Capabilities
- Project Management Knowledge
- Offshore Team Relations

The LDQ is a product of a thorough analysis of proven research tools in the field of leadership; and its validity and reliability have been further confirmed through a number of different research activity in different organisational context and the triangulation of the LDQ with results from other classical research (Dulewicz & Higgs, 2003b, 2005b, 2016; Young & Dulewicz, 2006; Turner & Müller, 2006). The LDQ has hence been proven to be a robust instrument to collect information on EI and leadership competences, as applied in the present study. The EIQ section of the LDQ contains 7 dimensions for EI and are explained in Table 3-7 – measured on a Likert scale from 1 to 5 (from Almost Never to Almost Always).

Table 3-6: EI aspects of Leadership Dimensions

Emotional and Social Dimensions (EQ)	Self-awareness	Awareness of one's own feelings and the capability to recognise and manage these in a way that one feels that one can control. A degree of self-belief in one's capability to manage one's emotions and to control their impact in a work environment.
	Emotional resilience	Performs consistently in a range of situations under pressure and adapts behaviour appropriately. Balances the needs of the situation and task with the needs and concerns of the individuals involved. Retains focus on a course of action or need for results in the face of personal challenge or criticism.
	Intuitiveness	Arrives at clear decisions and drives their implementation when presented with incomplete or ambiguous information using both rational and "emotional" or intuitive perceptions of key issues and implications.
	Interpersonal sensitivity	Is aware of, and takes account of, the needs and perceptions of others in arriving at decisions and proposing solutions to problems and challenges. Builds from this awareness and achieves the commitment of others to decisions and action. A willingness to keep open one's thoughts on possible solutions to problems and to actively listen to, and reflect on, the reactions and inputs from others.
	Influence	Persuades others to change views based on an understanding of their position and a recognition of the need to listen to this perspective and provide a rationale for change.
	Motivation	Has the drive and energy to achieve clear results and make an impact and, also, to balance short- and long-term goals with a capability to pursue demanding goals in the face of rejection or questioning.
	Conscientiousness	Displays clear commitment to a course of action in the face of challenge and to match "words and deeds" in encouraging others to support the chosen direction. Shows personal commitment to pursuing an ethical solution to a difficult business issue or problem.

Source: Dulewicz & Higgs (2003a)

The 7 EI components covered in the questionnaire include self-awareness, emotional resilience, motivation, interpersonal sensitivity, influence, intuition and conscientiousness.

These were identified following an extensive review of the emotional intelligence literature by the authors. Thereafter a content analysis was conducted upon these constructs, and strong indications of a linkage between leadership and Emotional Intelligence are reported (Dulewicz & Higgs, 2005). For the current study, the EI measure of managers used is based on the standardised “sten” scores derived from participants’ responses to the 70 items of the EI section of the questionnaire (E1 – E70). The standardised Sten scores provide a standard presentation of the factors of the EI scale as described in the LDQ manual by the authors (Dulewicz & Higgs, 2016). The LDQ includes two additional sub-scales covering: Leadership Performance and Follower Commitment. The further 4 variables (i.e. additional to EI, Leadership performance and Follower commitment) are derived from the factor analysis process using the data collected for managers’ capabilities items.

3.6.5.4 ERP Implementation Context Constructs

As no existing instrument was found to measure ERP implementation context, the outcome of the previously mentioned approach involving interviews with managers generated the insights which informed the construction of this questionnaire and illustrates the key aspects of the ERP implementation context such as stability of implementation context, harmony of implementation context, support of implementation context and dynamics of implementation context were adapted from Shao (2010). Churchill (1979, 1999) recommended the process to develop new constructs by using existing research results in the subject area.

3.6.5.5 Perceived Client Satisfaction

Based on the Factor Analyses to be performed, the factors generated constitute the different components of perceived client satisfaction. Hence, a new variable “Overall Satisfaction” will be computed to measure Perceived Client Satisfaction as a sum of the different components (See section 4.4.5).

3.6.5.6 Instrument Description

The questionnaire is shown Appendix B. A description follows:

Section A contains three questions asking about the type of ERP implementation the participants led; looking at the ERP product, the size of the organisation and the number of months the implementation took.

Section B contains sixteen questions using a 5-point Likert scale ranging from 1 (not at all) to 5 (to a very large extent). The questions ask about the nature of the ERP implementation context and contain questions on difficult clients, corporate issues, scope stability, off-shore resource impact, top management support, budget availability and funding, cultural dynamics of the client organisation, the implementation team and other resident cultures.

Section C contains twenty-five questions in all to garner understanding of the participant's Perceived client satisfaction and their Management capabilities. Questions 1 to 7 are based on a 5-point Likert scale ranging from 1 (not at all) to 5 (to a very large extent); questions 8 to 20 is based on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree); and questions 21 to 25 is based on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) but with the addition of a zero (0) option to allow respondents to indicate they did not work on a particular implementation stage.

Section D contains Open-ended questions on the manager's own description of the top issues experienced on the implementation and their approach to addressing those issues.

Section E contains 70 questions using a 5-point Likert scale ranging from 1 (Never or virtually never) to 5 (Always or virtually always). The questions ask about respondents' behaviour at work attempting to garner understanding of their Emotional Intelligence. For example, "It is possible to control my own moods"

Section F contains 11 questions using a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Questions 1 to 6 ask about respondents' Leadership Performance and Questions 7 to 11 ask about Follower Commitment. For example, "1. My team members put in much exceptional effort to achieve their goals"

Section G contains a demographic section to collect data on the variables:

- Age
- Gender
- Position/designation in parent organization
- Total number of years leading projects
- Country of last ERP implementation

3.6.5.7 Common Method Bias Testing

The current research utilizes the online survey tool Qualtrics to collect data about both independent and dependent variables from each individual – as a single source. It has been suggested that using a single survey respondent as the source for both the independent and dependent data in one instrument introduces the possibility of bias potentially leading to several negative consequences for the interpretation of research outcomes. It threatens the validity of the conclusions about the relationships between measures and is widely recognized to have both a random and a systematic component (Bagozzi and Yi, 1991; Nunnally, 1978; Spector, 1987). Some of these may include biased estimates of the validity and reliability of the measures employed as well as bias in the estimates of the relationships between constructs of interest, which in turn can affect hypothesis testing. Method biases as noted by Podsakoff et al., (2003) are a problem because they are one of the main sources of measurement error. Donaldson & Grant-Vallone (2002) posited that social desirability can occur because study participants generally tend to respond in ways that make themselves appear positive or favourable or because they may believe that there is a possibility that their supervisors or organizational leaders gaining access to their responses. These can then further constrain the useful interpretation of results and to this end the literature has suggested techniques to assuage concerns about the possibility of common method effects underlying observed results. Of the detective and corrective techniques that can be employed, the most popular has been Harman's Single-Factor Test. Results of the test are provided in section 4.2 of the next chapter.

3.6.5.8 Data Collection Problems and Challenges

Originally, two web-based questionnaires were planned for use in the quantitative aspect of the present study: the Leadership Dimensions Questionnaire (LDQ) developed by Dulewicz and Higgs (2003a) to measure managers' emotional (EQ), intellectual (IQ) and managerial (MQ) leadership competences; and the questionnaire developed by the researcher for the present study to collect information on ERP implementation context and other leadership competences – specifically referred to in the current study as managers' capabilities (section 3.4.5.1). However, after about 5 years attempting to obtaining responses, the response rate was still relatively low. The feedback received during this period was that the LDQ took too long to complete –some said it took them about one hour to complete the 189 questions in the instrument. Several respondents appeared to begin but gave up after noticing the full length of the survey. During this period, several meetings were had with the current researcher's supervisors as well as other academic staff at the college to discuss possible solutions to what

appeared to have become an impasse. Some of the suggestions coming out of those meetings included:- the current researcher travelling to relevant ERP conferences and handing out the questionnaires to conference participants, approaching large ERP system consultancies to get some support by asking their consultants to complete the questionnaires, approaching the major Project management institutions such as PMI to help publicise the study and display a link to the survey on their portal, and offering respondents some form of incentive to encourage them to complete the apparently long survey. The suggestions were all carried out except for travelling to different conferences and offering an incentive to respondents. It was thought that money itself would not be an option but a voucher such as an Amazon voucher could work. However, at the time, it was suggested that a request needed to be made to the Henley Business School's Research Ethics committee for approval prior to offering vouchers to complete the survey. After a further discussion on the approach with the researcher's supervisors, it was rejected on grounds of lack of agreement on what would be a fair value to be offered to participants, as well as for bias considerations – where completion of questionnaire is based on an incentive and hence, could bias respondents.

The current researcher proposed that it would be necessary to reduce the number of questions in order to reduce completion time – and gain more respondents. After a meeting between the researcher and their supervisors it was agreed to reduce the number of questions. The agreement was to remove the IQ and MQ elements of the LDQ, thereby leaving the EI elements only – and including the Leadership Performance and Follower Commitment items. The argument was that the second questionnaire already covered aspects of the MQ-related competences; and the IQ related competences were assumed to be handled in the hiring process that employs ERP implementation managers (threshold competences). Furthermore, questions within the tailored parts of the questionnaire already covered questions relating to managerial and leadership competences in relation to ERP implementations. Following another stint at attempting to get respondents which was again met with low traction, the seven EI dimension scales were further dropped from the analysis due to the 5 times number of variables rule (Hair et al, 2010). However, although the seven EI dimensions were dropped, all EI-related questions were included in the analyses. The scores were worked out on each dimension and a total EI score was generated from the 7 dimensions and used as the only variable in the analyses. Thus, the summated score of the seven dimensions, and not the seven separate dimensions themselves, was the only measure of EI used.

This agreed approach was tried for a further three years after which it was decided to close the survey and use the respondents obtained thus far. Moreover, the current researcher was coming to the end of their registration period for the DBA, hence there was a need to begin the data analyses. Upon closing the survey, it was noted that very many respondents had not fully completed it, with most of those only answering a handful of the questions before stopping. Hence, it was necessary to remove those. Finally, eighty-three useable respondents remained.

3.7 Research Question and Hypotheses

The research question is:

How does ERP implementation context moderate the relationship between Managers' ERP Leadership Competences and Perceived Client Satisfaction?

As previously mentioned in the literature review summary in chapter 2, there were two initial working hypothesis and after the data analysis they are expounded and are presented later on in section 4.7.1.

3.8 Data Analysis Procedure

The procedure followed for the data analysis evolved in several steps. Data collected from the surveys administered via SurveyMonkey® and later Qualtrics® were exported into Microsoft Excel spreadsheets for initial checks and reviews prior to loading into SPSS 24 for further analysis.

The use of Excel allowed for preliminary analysis of the data to be processed by enabling the checking for missing values (Pallant, 2010). Missing data were reviewed and relevant cases were removed where responses were not deemed useable as more than 80% of the data values in those cases had missing data.

Seventy-eight respondents (about 59% of the cases) of the total number of cases were deleted due to missing data. The reasons for deletions included: upon review, many respondents began the survey but after completing the first few questions did not proceed further. Thus, only capturing responses to the first variable. It was perceived that the respondents might have either realised after beginning the survey that they did not have the experience required to complete the questionnaire or they started the survey out of curiosity but decided not to proceed after answering the first few questions. Some other respondents simply selected the same Likert scale option for all questions, which indicated they simply clicked through the questions without giving them much thought. After removal of the incomplete rows, the spreadsheet was then loaded into SPSS 24 software for statistical analysis.

After successfully loading the Excel data into SPSS 24, further preliminary activities were carried out such as computations for the Overall Client satisfaction, negatively worded questions were reverse-coded where necessary and new variables created to represent each subscale of the independent, dependent, and moderating variables. Additionally, interaction variables were created by calculating the products of the moderating variables and independent variables.

Analysis of the data began by calculating frequency distributions and descriptive statistics (mean, standard deviation, range, and variance) for the independent, dependent, and control variables. Next, histograms and boxplots were used to check for outliers (Pallant, 2010). Hair et al. (2010) described outliers as cases that have “a unique combination of characteristics identifiable as distinctly different” (p. 64) from other cases. Outliers have unusually high or low

values or are “a unique combination of values across several variables that stand out from others” (Hair et al., 2010, p. 64). Hair et al. encouraged researchers to “guard against deleting observations that, although different, are representative of the population” (p. 197). Only extreme outliers were removed from the data.

Next, data were tested for normality by reviewing kurtosis and skewness to assess the height and balance of distribution (Hair et al., 2010; Pallant, 2010). The data met the requirements - see sections 4.2.1, 4.3.1 and 4.4.1 for details. Assumptions for multiple regression were checked to determine any violations of linearity, multicollinearity, and homoscedasticity (Hair et al., 2010; Pallant, 2010). These assumptions were also met – see section 4.8.2.

After the preliminary analysis, Factor analysis was carried out on the sample of 83 respondents using Principal Components Analysis (PCA) to explore the dimensions of managers' competences, ERP implementation context and perceived client satisfaction based on the sample of 83 remaining respondents.

3.8.1 Component Analysis

Hair, Black, Babin & Anderson (2010) explained that Factor analysis, including both principal component analysis (PCA) and Common Factor Analysis (CFA) are statistical approaches that can be used to analyse interrelationships among a large number of variables and to explain the variables in terms of their common underlying dimensions. They explained that the overriding objective of factor analysis is to find a way of condensing the information contained in a number of original variables into a smaller set of variables (factors) with a minimal loss of information. By providing an empirical estimate of the structure of the variables considered, factor analysis becomes an objective basis for creating summated scales (Hair et al, 2010).

Pallant (2010) explains that factor analysis is included in SPSS as a ‘data reduction’ technique. It takes a large set of variables and looks for a way the data may be ‘reduced’ or summarised using a smaller set of factors or components. It does this by looking for ‘clumps’ or groups among the intercorrelations of a set of variables. Factor analysis can also be used to reduce a large number of related variables to a more manageable number, prior to using them in other analyses such as multiple regression or multivariate analysis of variance (Pallant, 2010). Exploratory factor analysis is often used in the early stages of research to gather information about (explore) the interrelationships among a set of variables.

3.8.2 Assumptions for Factor Analysis

Pallant (2010) suggested the 3 main steps involved in Factor analysis as follows:

Step 1: Assessment of the suitability of the data for factor analysis

There are two main issues to consider in determining whether a particular data set is suitable for factor analysis: sample size, and the strength of the relationship among the variables (or items). While there is little agreement among authors concerning how large a sample should be, the recommendation generally is: the larger, the better.

Stevens (1996, p. 372) suggested that the sample size requirements advocated by researchers have been reducing over the years as more research has been done on the topic. Some authors suggest that it is not the overall sample size that is of concern — rather, the ratio of participants to items. Hair et al (2010) recommend that the minimum requirement for sample size when doing factor analysis is 5 observations per variable.

The second issue to be addressed concerns the strength of the intercorrelations among the items. Tabachnick and Fidell recommend an inspection of the correlation matrix for evidence of coefficients greater than .3. If few correlations above this level are found, factor analysis may not be appropriate. Two statistical measures are also generated by SPSS to help assess the factorability of the data: Bartlett's test of sphericity (Bartlett 1954), and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (Kaiser 1970, 1974). Bartlett's test of sphericity should be significant ($p < .05$) for the factor analysis to be considered appropriate. The KMO index ranges from 0 to 1, with .6 suggested as the minimum value for a good factor analysis (Tabachnick & Fidell 2007).

Step 2: Factor extraction

Factor extraction involves determining the smallest number of factors that can be used to best represent the interrelationships among the set of variables. There are a variety of approaches that can be used to identify (extract) the number of underlying factors or dimensions. Some of the most commonly available extraction are: principal components; principal factors; image factoring; maximum likelihood factoring; alpha factoring; unweighted least squares; and generalised least squares.

The most commonly used approach is principal components analysis. It is up to the researcher to determine the number of factors that he/she considers best describes the underlying relationship among the variables. This involves balancing two conflicting needs: the need to find a simple solution with as few factors as possible; and the need to explain as much of the variance in the original data set as possible.

Tabachnick and Fidell (2007) recommend that researchers adopt an exploratory approach, experimenting with different numbers of factors until a satisfactory solution is found. There are a number of techniques that can be used to assist in the decision concerning the number of factors to retain: Kaiser's criterion; scree test; and parallel analysis.

Kaiser's criterion

One of the most commonly used techniques is known as Kaiser's criterion, or the eigenvalue rule. Using this rule, only factors with an eigenvalue of 1.0 or more are retained for further investigation. The eigenvalue of a factor represents the amount of the total variance explained by that factor. Kaiser's criterion has been criticised, however, as resulting in the retention of too many factors in some situations.

Scree test

Another approach that can be used is Catell's scree test (Catell 1966). This involves plotting each of the eigenvalues of the factors and inspecting the plot to find a point at which the shape of the curve changes direction and becomes horizontal. Catell recommends retaining all factors above the elbow, or break in the plot, as these factors contribute the most to the explanation of the variance in the data set.

Step 3: Factor rotation and interpretation

Once the number of factors has been determined, the next step is to try to interpret them. To assist in this process, the factors are 'rotated'. This does not change the underlying solution—rather, it presents the pattern of loadings in a manner that is easier to interpret. SPSS shows which variables 'clump together' and lets the user propose possible interpretations based on their understanding of the content of the variables, underlying theory and past research.

There are two main approaches to rotation, resulting in either orthogonal (uncorrelated) or oblique (correlated) factor solutions. According to Tabachnick and Fidell (2007), orthogonal rotation results in solutions that are easier to interpret and to report; however, they require the researcher to assume (usually incorrectly) that the underlying constructs are independent (not correlated). Oblique approaches allow for the factors to be correlated, but they are more difficult to interpret, describe and report (Tabachnick & Fidell 2007, p. 638).

In practice, the two approaches (orthogonal and oblique) often result in very similar solutions, particularly when the pattern of correlations among the items is clear (Tabachnick & Fidell 2007). Within the two broad categories of rotational approaches there are a number of different techniques provided by SPSS (Orthogonal: Varimax, Quartimax & Equimax; oblique: Direct Oblimin & Promax). The most commonly used orthogonal approach is the Varimax method, which attempts to minimise the number of variables that have high loadings on each factor.

Following rotation, a 'simple structure' is hoped for, as identified by Thurstone (1947). This involves each of the variables loading strongly on only one component, and each component being represented by a number of strongly loading variables to aid in interpreting the nature of the factors - through checking the variables that load strongly on each of them.

3.8.3 Moderated Hierarchical Multiple Regression Analysis Approach

The interpreted factors, outcomes of the factor analysis described in section 3.9.2 are subsumed into the formulation of the hypotheses. The main hypotheses are tested using hierarchical multiple regression analysis to explore the strength of the relationships between each of the Managers' ERP Leadership Competences (MELC) subscales against the Perceived Client Satisfaction (PCSAT) subscale (Pallant, 2010). In Step 1, the dependent variables and control variables - Size of implementation (SOI) and Years of experience (YOE) - were entered into the regression model. In Step 2, the independent variables were entered (EI, Leadership Performance, Follower Commitment, Team & Peer Cooperation, Managers Delivery Capabilities, Managers PM Knowledge, Managers Offshore Team Relations).

Pearson's product-moment correlation coefficient (r) was calculated to determine the degree to which the variables are linearly related (Green & Salkind, 2011).

Next, the sub-hypotheses are tested using several iterations of hierarchical multiple regression to determine the unique effect of each independent variable on the dependent variable (Girden & Kabacoff, 2011).

Statistical significance for testing the Hypotheses were set at $p < .05$ or $p < .01$ to ascertain whether the independent variables contribute to the prediction of the dependent variable in a statistically unique way (Pallant, 2010).

3.8.4 Moderated Hierarchical Regression Testing

Sharma, Durand and Gur-Arie (1981) explained that a moderator variable has been defined as one which systematically modifies either the form and/or strength between and a predictor (an independent variable) and criterion variable (a dependent variable). Hair et al (2010) further explained that a moderating effect “occurs when a third variable changes the effect of two related variables” (p. 755). The approach to the moderated hierarchical multiple regression methodology used in this study is described below:

In, what may be called Step 0, the initial assumptions for performing moderated regression analysis are checked. These briefly explained include:

- The dependent variable should be measured on a continuous scale
- Have independence of observations (i.e. independence of residuals)
- Data must show homoscedasticity. The error variances should be the same for all combinations of independent and moderator variables
- The data must not show multicollinearity; having two or more independent variables that are highly correlated with each other.

In Step 1, Perceived Client Satisfaction (PCSAT) was entered into SPSS as the dependent variable, and the control variables (Size of implementation (SOI) and Years of experience (YOE)) were entered as the independent variables.

In Step 2, the moderator and independent variables are added.

In Step 3, interaction variables (products of the moderating variables and independent variables) are added. This step accounts for the moderating effects of the ERP Implementation Context sub-variables on the relationship between each Managers ERP Leadership Competences (MELC) sub-variable and PCSAT.

The coefficient of determination (R^2) measures how much of the variance of the dependent variable is explained by the independent variable and can vary between 0 and 1 (Hair et al., 2010). A moderating effect is present if adding the interaction variables results in a statistically significant change in the R^2 value from Step 2 to Step 3 in the regression model (Hair et al., 2010).

3.9 Summary

The aim of the quantitative study is to test the research model and interpret the outcomes of the tests. As previously explained, two questionnaires were planned for use: the EIQ elements of the Leadership Dimensions Questionnaire (LDQ) developed by Dulewicz and Higgs (2003a) to collect psychometric data from managers of their self-reported leadership competences: emotional intelligence, leadership performance and follower commitment, and a new questionnaire developed by the researcher for the present study to collect information on ERP implementation context, perceived client satisfaction and other leadership competences – specifically referred to in the current study as managers' capabilities (section 3.4.5.1).

The current chapter has described the methodological basis of the current research and elucidated the population, sample and data collection methodology as well as provided the formation of the survey instruments, and data analysis procedures. Results of the data analysis are presented in Chapter 4.

4 Data Analyses and Results

4.1 Data Analyses

The purpose of this chapter is to describe the quantitative data analyses process. Based on the statistical analyses carried out, the research hypotheses are tested in this chapter. The chapter ends with the hierarchical regression outcomes and a report of the rejection or acceptance of the hypotheses. The open-ended question is also addressed.

As described in chapter 3, two questionnaires were initially planned to be used in this quantitative study stage. However, due to a lack of sufficient respondents for both questionnaires separately, the two questionnaires were combined into one and the number of questions were reduced. From the LDQ part, the MQ and IQ dimensions and the seven EI dimension scales were dropped due to the '5 times number of variables' rule (Hair et al., 2010). The updated questionnaire was then used to gather responses from ERP implementation managers. The questionnaire was used to measure managers' ERP leadership competences, ERP implementation context and perceived client satisfaction. In total, 83 usable responses were collected using the combined questionnaire. Thus, the revised LDQ (Dulewicz and Higgs, 2003a) specifically measured managers' EI, leadership performance and follower commitment.

4.2 Common Method Bias Results

As previously mentioned in section 3.6.5.7, Harman's single factor test is carried out to check for Common Method Variance in a survey. This test is achieved by constraining all factors to one and reporting on the amount of variance explained by the forced one factor model. In the current study instrument all items of all latent constructs listed in Table 3-5 were entered into a single factor for factor analysis in SPSS 24 and the analysis was constrained so that there is no rotation (Podsakoff et al, 2003). Harman asserts that if the newly introduced common latent factor explains more than 50% of the variance, then Common Method Bias (CMB) exists. Hence, the first unrotated factor should account for less than 50% of the cumulative variance of all factors with Eigenvalue greater than 1. When applied to all the items forming the constructs used in the current study, Table 1, Appendix E shows that the generated Principal Component Analysis (PCA) output revealed 78 distinct factors accounting for 86% of the total variance. The first unrotated factor captured only 12% of the variance in data. The finding

suggests that the risk of CMB is not significant for the study instrument and that the key constructs have acceptable discriminant validity between the key variables. Hence, it may be concluded that there is no threat of common methods bias.

4.3 Data Presentation

From the frequency distribution of the nature of implementation in Table 4-1, it can be seen that in the data sample ERP implementations are relatively evenly distributed in frequency in terms of size of implementation, and this gives a reasonable level of confidence to analyse and generate the results in ERP implementations across the countries of implementation. From the results, large sized implementations are dominant with 60.2% of respondents indicating their implementations were Large. A further 31.3% respondents indicated their implementations were Medium, while just 8.4% indicated Small. The mean of number of months taken to implement - what are mostly Large implementations - is 20 months as shown in Table 4-1. These results demonstrate a relatively reasonable uniform pattern to the data and a consistency that emphasises the nature of ERP implementations as provided by practitioners. This consistency enhances the confidence in the internal consistency of the questionnaire.

Table 4-1: Frequency distribution of nature of implementation

Size	Mean Months	Frequency
Large	20.2	60.2%
Medium	11.8	31.3%
Small	8.4	8.4%

Source: Author's Questionnaire results

From the frequency distribution of ERP managers' demography Table 4-2, it can be seen that in the data sample the mean age of implementation managers is 42 years with ages ranging from 29 to 62 years old – and with the majority of systems implemented indicated as SAP. The most common role designation on these implementations is shown to be the role Project manager, which may be said to indicate that such implementation managers would usually be middle managers or possibly more senior managers in their organizational hierarchies, and this would be in line with similar observations by Blomquist and Müller (2006). Majority are males, 74.7%, in the job function of Project manager, while females constitute just 12% of the population. A further 13.3% did not indicate their gender.

The implementation countries indicated by the respondents span 20 countries further demonstrating how wide spread ERP implementations are globally. However, the United Kingdom was the implementation country indicated by most respondents, covering 27.7% of the population of respondents. This was followed by the USA – indicated by 15.7% of respondents.

Table 4-2: Frequency distribution of ERP implementation managers’ demography

Dimension	Attribute	Frequency	Accumulation
Age	Younger than 30 (incl. 30)	4.8%	4.8%
	31-40	38.6%	43.4%
	41-50	34.9%	78.3%
	51-60	8.4%	86.7%
	61-70	1.2%	88.0%
	Missing values	12.0%	100.0%
Work Experience	Less than 5 years (incl. 5 years)	25.3%	25.3%
	6-10 years	22.9%	48.2%
	11-15 years	20.5%	68.7%
	16-20 years	13.3%	81.9%
	More than 20 years	6.0%	88.0%
	Missing values	12.0%	100.0%
Gender	Male	74.7%	74.7%
	Female	12.0%	86.7%
	Missing values	13.3%	100.0%
Position/Role	Architect	7.2%	7.2%
	Change Manager	14.5%	21.7%
	Director	6.0%	27.7%
	Manager	4.8%	32.5%
	Program Director	1.2%	33.7%
	Program Lead	1.2%	34.9%
	Program Manager	10.8%	45.8%
	Project Director	3.6%	49.4%
	Project Lead	2.4%	51.8%
	Project Manager	22.9%	74.7%
	Team Lead	7.2%	81.9%
	Vice President	3.6%	85.5%
	Missing values	14.5%	100.0%

Country of Implementation	United Kingdom	27.7%	27.7%
	Luxembourg	2.4%	30.1%
	Belgium	3.6%	33.7%
	USA	15.7%	49.4%
	Sweden	1.2%	50.6%
	Germany	6.0%	56.6%
	Italy	1.2%	57.8%
	Singapore	1.2%	59.0%
	Switzerland	4.8%	63.9%
	France	2.4%	66.3%
	Norway	2.4%	68.7%
	Australia	2.4%	71.1%
	Portugal	1.2%	72.3%
	Nigeria	1.2%	73.5%
	Brazil	3.6%	77.1%
	New Zealand	1.2%	78.3%
	Canada	2.4%	80.7%
	Denmark	1.2%	81.9%
	Qatar	1.2%	83.1%
	South Africa	1.2%	84.3%
Missing values	15.7%	100.0%	
ERP System Implemented	Dynamics	2.4%	0.0%
	Epicor	1.2%	3.6%
	IBM	1.2%	4.8%
	Odoo ERP	2.4%	7.2%
	Oracle	9.6%	16.9%
	Salesforce	3.6%	20.5%
	SAP	77.1%	97.6%
	Smartcore	1.2%	98.8%
	SuccessFactors	1.2%	100.0%
	Missing values	0.0%	100.0%

Source: Author's Questionnaire results

4.4 Factor Analysis Results

Factor analysis is carried out on the sample of 83 respondents using Principal Component Analysis (PCA) to explore the underlying dimensions of managers' competences, ERP implementation context and perceived client satisfaction based on the sample of 83 respondents, examining to what extent individual variables contribute to these dimensions. The minimum requirement for sample size when doing factor analysis is 5 observations per variable (Hair et al., 2010). In this study, the ratio of observation-to-variable in doing factor

analysis for project context is approximately 5 to 1. SPSS 24.0 software package is used to perform all quantitative data analyses.

4.4.1 Perceived Client Satisfaction

The distribution of perceived client satisfaction variables was initially checked. Table 4-3 shows the descriptive statistics for all the perceived client satisfaction variables. One of the underlying conceptual assumptions of doing factor analysis is normality, that is, the data is normally distributed. Table 4-3 shows the means, the ranges, standard deviations, skewness and kurtosis of the perceived client satisfaction items. The mean scores of all variables are between 3.96 and 4.34 with a Likert scale range of 1-5. The inspection of skewness and kurtosis showed that all variables are within their respective thresholds of ± 1.96 and ± 3.29 (Field, 2005, p. 72). Skewness ranged from -1.201 to 0.189, and Kurtosis ranged from 0.618 to 2.522, which are well within the threshold limits. Therefore, all variables meet the requirements for normality, one of the criteria for factor analysis.

Table 4-3: Descriptive statistics for perceived client satisfaction variables

Descriptive Statistics								
	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic
Impact on users	83	3.0	2.0	5.0	4.097	0.7090	-0.774	1.261
Impact on customer	83	4.0	1.0	5.0	4.001	0.7964	-1.042	2.111
Users satisfied	83	3.0	2.0	5.0	4.024	0.6980	-0.696	1.183
Sponsors satisfied	83	2.0	3.0	5.0	4.184	0.6464	-0.202	-0.618
Relationship with senior management	83	3.0	2.0	5.0	4.281	0.7695	-1.201	1.704
Senior management satisfied	83	2.0	3.0	5.0	4.342	0.6290	-0.430	-0.614
Project preparation effectiveness	83	3.0	2.0	5.0	3.963	0.7537	-0.189	-0.351
Blueprint effectiveness	83	4.0	1.0	5.0	4.012	0.7410	-0.860	2.522
Realisation effectiveness	83	3.0	2.0	5.0	4.017	0.6443	-0.831	2.306
Final preparation effectiveness	83	3.0	2.0	5.0	4.041	0.7151	-0.449	0.285
Go live effectiveness	83	3.0	2.0	5.0	4.090	0.5987	-0.349	1.252

Details of Reliability tests for the 2 constructs - Impact on Stakeholders (question items C8 to C13) and Construct - Impact On Implementation Phases (C21 to C25) are provided in Appendix D-1a, Table 1 and Table 3 respectively. For every round of factor analysis, the reliability of the scales was checked. As described by Field (2005), Reliability checks that a scale consistently reflects the construct it is measuring. Cronbach's Alpha is the most common measure of scale reliability (Field, 2005). Churchill (1979) recommends that the Cronbach's Alpha measure of .60 is acceptable for a factor in exploratory research. Appendix D-1a, Table

1 shows the scale reliability for Impact on Stakeholders and the Cronbach's Alpha is .770, thus greater than .60. Likewise, Appendix D-1a, Table 3 shows the scale reliability for Impact On Implementation Phases and the Cronbach's Alpha is .735, thus greater than .60.

4.4.2 Factor Analysis for Perceived Client Satisfaction

The following sub-sections show the assessments carried out to ensure appropriateness of the perceived client satisfaction data for factor analysis.

a) Correlation Matrix: Perceived Client Satisfaction

The correlation matrix for perceived client satisfaction against all IVs is shown in Appendix D-1b, Table 4. Inspection revealed a substantial number of correlations between variables at or above the .3 level. There is no multi-collinearity between the predictor variables above the .7 level. These suggest appropriateness for factoring.

b) Kaiser-Meyer-Olkin (KMO) Test

To verify that the data set was suitable for factor analysis, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) value needs to be .6 or above and that the Bartlett's Test of Sphericity value is significant (i.e. the Sig. value should be .05 or smaller) Pallant (2010). In this study, the KMO value is .729 and Bartlett's test is significant ($p = .000$). See Appendix D-1b, Table 5.

c) Communalities

The communalities statistic is showed in Appendix D-1b, Table 6. Inspection of Statistic shows all variables are within the .5 ranges, which indicates appropriateness for factor analysis. The variable Go live effectiveness shows a slight weakness at .410. This variable will be kept in mind for further effect during the factor analysis.

4.4.3 Factor Analysis Solution for Perceived Client Satisfaction

A principal component analysis with Varimax rotation was performed. To determine how many components (factors) to 'extract', the Kaiser's criterion was used, based on components having an eigenvalue of 1 or greater for factor acceptance. The Total Variance Explained table was

used to determine how many components meet this criterion. Factor loadings at or above .45 were considered significant (Hair et al, 2010) and are represented in Appendix D-1b, Table 7. In this study, only the first four components recorded eigenvalues above 1 (3.785, 1.925, 1.169, 1.089). These 4 components explain a total of 72.435 percent of the variance. Hence, four perceived client satisfaction factors were extracted in the initial analysis. The component loadings table shows four factors which account for (cumulative %) 72.435% of variance.

Although this four-factor model is interpretable, there is a variable which is not loaded in this model, which is Go live effectiveness. This was the same variable identified to have a slightly low Communality value in Appendix D-1b, Table 8. Hence, it may be removed, and the factor analysis performed again. Pallant (2010) stated:

“...factor analysis is used as a data exploration technique, so the interpretation and the use you put it to is up to your judgment rather than any hard and fast statistical rules.”

Pallant (2010)

After removing this variable and performing the factor analysis again, the factor model appears more stable, shown in Appendix D-1b, Table 3. In this final model, the adequacy of the measure checks, such as variable correlation matrix, KMO, etc. were once again carried out. Results are shown in Appendix D-1b.

While carrying out the final round of factor analysis, the factor scores were saved for further regression analyses; and named as shown in Table 4-4.

Table 4-4: Rotated Component Matrix for Perceived Client Satisfaction variables

Rotated Component Matrix^a				
	Component			
	User Impact & Satisfaction	Implementation & Delivery effectiveness	Senior Management Satisfaction	Preparation & Planning effectiveness
Impact on users	.864			
Users satisfied	.858			
Impact on customer	.834			
Sponsors satisfied	.637			
Realisation effectiveness		.921		
Final preparation effectiveness		.866		
Senior management satisfied			.815	
Relationship with senior management			.779	
Project preparation effectiveness				.902
Blueprint effectiveness				.716

A brief summary of the final iteration and adequacy check indicators follows:

- Inspection of the correlation matrix revealed a substantial number of correlations between variables at or above the .45 level. This suggests appropriateness for factoring.
- The KMO tests showed the overall sample MSA was .736 with statistical significance at the <0.001 level. This suggests appropriateness of the data for factor analysis.
- The anti-image correlation matrix all values along the diagonal line are higher than .5, which makes it sufficient for factor analysis.
- The communalities statistic showed that all variables are with communalities in the .5 range or great than .5, which also suggests the appropriateness for factoring; now with the variable Go live effectiveness removed.

- The scree plot is provided in Appendix D-1b. Pallant (2010) suggested it should be reviewed, where, using the Kaiser criterion, generates too many components for extraction. It was suggested to retain only components above the change (or elbow) in the shape of the plot. In this iteration, there is quite a clear break between the fourth and fifth components. Hence, components 1 to 4 explain much more of the variance than the remaining components and were retained.

With Eigenvalue greater than 1 for each factor and 76.587% variance explained in the final solution, this factor model can be accepted on a quantitative basis. On checking the interpretability of the factors, they appear to be well interpretable by the contributing variables, thus these four factors are also supported qualitatively.

4.4.4 Reliability Test

After each round of factor analysis, reliability tests were carried out for the scales. This is to ensure all factors measure the same construct of Perceived client satisfaction. Appendix D-1a, Table 1 to Table 4 show the scale reliability for perceived client satisfaction factors and the number of items in each of the four factors. All Cronbach's Alpha are greater or equal to .6.

4.4.5 Overall Client Satisfaction

A new variable "overall client satisfaction" was computed to measure perceived client satisfaction as a whole. The value of this variable is the sum of the four satisfaction factors which are: User Impact & Satisfaction, Senior Management Satisfaction, Implementation & Delivery effectiveness and Preparation & Planning effectiveness. This aggregate value is used to represent perceived client satisfaction in later regression analyses.

Based on the Factor Analyses performed, the factors extracted separately represent the different components of perceived client satisfaction. Hence, a new variable "Overall Satisfaction" is computed to measure Perceived Client Satisfaction as a whole. The value of this variable is the sum of the four satisfaction factors described. This summated value is further used to represent the Perceived Client Satisfaction construct in later regression analyses.

Perceived client satisfaction is represented in this study as a summation of the 4 variables

i User Impact & Satisfaction

This variable consists of four items namely:

- Impact on users
- Users satisfied
- Impact on customer
- Sponsors satisfied

ii Senior Management Satisfaction

This variable consists of two items namely:

- Senior management satisfied
- Relationship with senior management

iii Implementation & Delivery effectiveness

This variable consists of two items namely:

- Realisation effectiveness
- Final preparation effectiveness

iv Preparation & Planning effectiveness

This variable consists of two items namely:

- Project preparation effectiveness
- Blueprint effectiveness

4.5 ERP Implementation Context factors

Exploratory factor analysis was carried out for the construct of ERP implementation context in the research model.

4.5.1 Variables check for doing factor analysis

The distribution of ERP implementation context variables was initially checked. Table 4-5 shows the descriptive statistics for all the ERP implementation context variables. One of the underlying conceptual assumptions of doing factor analysis is normality, that the data is normally distributed. Table 4-5 shows the means, the ranges, standard deviations, skewness and kurtosis of the ERP implementation context items. The mean scores of all variables are between **2.35** and **3.50** with a Likert scale range of 1-5. The inspection of skewness and

kurtosis showed that all variables are within their respective thresholds of ± 1.96 and ± 3.29 (Field, 2005, p. 72). Skewness ranged from -0.671 to 0.482, and Kurtosis ranged from -1.172 to 0.053, which are well within the threshold limits. Therefore, all variables meet the requirements for normality, one of the criteria for factor analysis.

Table 4-5: Descriptive statistics for ERP implementation context variables

Descriptive Statistics								
	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic
System & infrastructure availability problems	83	4.0	1.0	5.0	2.707	1.2734	0.175	-1.093
Client relationship problems	83	4.0	1.0	5.0	2.742	1.1346	0.225	-0.457
Vendor & Supplier problems	83	4.0	1.0	5.0	2.585	1.1148	0.024	-1.169
Corporate stability problems	83	4.0	1.0	5.0	3.011	1.1945	-0.064	-0.733
Scope creep problems	83	4.0	1.0	5.0	3.425	1.1795	-0.434	-0.650
Offshore resource-related problems	83	4.0	1.0	5.0	2.572	1.2498	0.141	-1.172
Top management support issues	83	4.0	1.0	5.0	3.501	1.2022	-0.671	-0.333
Human resource availability issues	83	4.0	1.0	5.0	3.110	0.9371	-0.408	-0.534
Funding provision issues	83	4.0	1.0	5.0	3.440	0.9640	-0.411	0.053
System & infra availability issues	83	4.0	1.0	5.0	3.221	1.1265	-0.244	-0.523
Issues with acceptance of system	83	4.0	1.0	5.0	3.280	0.8593	-0.228	-0.441
Constraints from Org culture	83	4.0	1.0	5.0	3.340	1.1394	-0.404	-0.606
Constraints from Team culture	83	4.0	1.0	5.0	2.644	1.2136	0.346	-0.788
Constraints from Parent company culture	83	4.0	1.0	5.0	2.354	1.1691	0.482	-0.770
Constraints from Country culture	83	4.0	1.0	5.0	2.542	1.0826	0.303	-0.392
Constraints from Offshore team culture	83	4.0	1.0	5.0	2.493	1.2110	0.185	-0.967
Valid N (listwise)	83							

4.5.2 Factor Analysis for ERP Implementation Context

The following sub-sections show the assessments carried out to ensure appropriateness of the ERP implementation context data for factor analysis.

a) Correlation Matrix

The correlation matrix is shown in Appendix D-2b, Table 6. Inspection of the correlation matrix revealed a substantial number of correlations between variables at or above the .45 level.

There is no multi-collinearity between the predictor variables above the .7 level. These suggest appropriateness for factoring.

b) Kaiser-Meyer-Olkin (KMO) Test

The KMO value in our sample is .698, indicating **adequacy** to conduct factor analysis. There is a statistical significance at the $p \leq 0.001$ level. See Appendix D-2b, Table 10

c) Communalities

The communalities statistic is showed in Appendix D-2b, Table 11. Inspection of Statistic shows all variables are within the .5 ranges, which indicates appropriateness for factor analysis.

4.5.3 Factor Analysis Solution

A principal component analysis with Varimax rotation was performed, with minimum Eigenvalue of 1.0 for factor acceptance. Factor loadings at or above .45 were considered significant and is represented in Appendix D-2b, Table 7. Five ERP implementation context factors were extracted in the initial analysis.

The component loadings table shows five factors which account for (cumulative %) 64.107% of variance. This five-factor model is interpretable. With Eigenvalue greater than 1 for each factor and 64.107% variance explained in the solution, this factor model can be accepted on a quantitative basis. On checking the interpretability of the factors, they appear to be well interpretable by the contributing variables, thus these four factors are also supported qualitatively. Details of the initial Rotated Component Matrix are shown in Appendix D-2b, Table 1.

4.5.4 Reliability Test

After each round of factor analysis, reliability tests were carried out for the scales. This is to ensure all factors measure the same construct of ERP implementation context. Table 2 in Appendix D-2b shows the scale reliability for ERP implementation context factors and the number of items in each of the four factors. Three Cronbach's Alphas were greater than .60

except Cultural issues and lack of systems and infrastructure 0.101 and Lack of client support 0.402.

The low Cultural issues and lack of Sys & systems and infrastructure reliability score ($\alpha = .101$) raises some concern as they appear to be especially problematic and may indicate some items in the scale may be measuring something different than the scale as a whole. Moreover, the Item-Total statistics indicates that the deletion of 'Extent Sys & Infra not available' would increase the Cronbach's alpha. This item was removed, and factor analysis carried out again.

Due to the inadequate reliability shown from the analysis, further cycles of factor analyses were carried out excluding one variable at a time (see details shown in Appendix D-2b) until the best solution was achieved and with adequate reliability. After several rounds of factor analyses, the factor model became stable.

After several cycles of Factor analyses, the factors stabilised. The KMO and Bartlett's test as well as the Communalities table are shown in Table 10 and Table 11 respectively in Appendix D-2b. While carrying out the final round of factor analysis, the factor scores were saved for further regression analyses. Details of output generated are provided in Appendix D-2b. The component loadings table shows four factors which account for (cumulative %) 62.252% of variance.

This four-factor model is interpretable. With Eigenvalue greater than 1 for each factor and 62.252% variance explained in the solution, this factor model can be accepted on a quantitative basis. On checking the interpretability of the factors, they appear to be well interpretable by the contributing variables, thus these four factors are also supported quantitatively. Table 4-6 shows the final rotated component matrix and names associated with the groupings obtained.

Table 4-6: Rotated Component Matrix

Rotated Component Matrix^a				
	Component			
	Org Change Problems	External Partnerships Problems	Resource Availability Problems	Cultural Problems
Constraints from Org culture	.780			
Corporate stability problems	.773			
Constraints from team attitudes	.654			
Scope creep problems	.605			
Offshore resource-related problems		.787		
System & infrastructure availability problems		.731		
Constraints from Offshore team culture		.675		
Vendor & Supplier problems		.508		
Extent Human resource not available			.832	
Extent Funding was not provided			.798	
Extent Top management not supportive			.662	
Client relationship problems			.499	
Constraints from Country culture				.836
Constraints from Parent company culture				.693

4.5.5 Reliability Test for Final ERP Context Factors

After each round of factor analysis, reliability tests were carried out for the scales. This is to ensure all factors measure the same construct of ERP implementation context. Table 9 (Appendix 2b) shows the scale reliability for ERP implementation context factors and the number of items in each of the four factors. Three Cronbach's Alphas were greater than .60. According to Pallant (2010), it is not uncommon for Cronbach's alpha values to be low when there are less than 10 items in the scale. These scales have 6 and 5 items, so the results may be said to demonstrate adequate internal consistency reliability.

4.6 Management Capability factors

As previously mentioned, Management Capability is being used to refer to those manager competences which are not already being tested by the LDQ questionnaire – such as EI, Leadership Performance and Follower Commitment (section 3.4.5.1). Thus, Management capability is used to refer to the additional factors separate from the three mentioned. Exploratory factor analysis was carried out for the construct of Management Capability in the research model.

4.6.1 Variable Check for doing Factor Analysis

The distribution of Management Capability variables was initially checked. Table 4-7 shows the descriptive statistics for all the Management Capability variables. One of the underlying conceptual assumptions of doing factor analysis is normality, that the data is normally distributed. Table 4-7 shows the means, the ranges, standard deviations, skewness and kurtosis of the Management Capability items. The mean scores of all variables are between 3.32 and 4.41 with a Likert scale range of 1-5. The inspection of skewness and kurtosis showed that all variables are within their respective thresholds of ± 1.96 and ± 3.29 (Field, 2005, p. 72). Skewness ranged from -0.956 to 0.185, and Kurtosis ranged from 0.638 to 1.200, which are well within the threshold limits. Therefore, all variables meet the requirements for normality, one of the criteria for factor analysis.

Table 4-7: Descriptive statistics for Management Capability variables

Descriptive Statistics								
	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic
Time management	83	4.0	1.0	5.0	3.671	0.9114	-0.377	-0.113
Cost management	83	3.0	2.0	5.0	3.475	0.8727	-0.091	-0.638
Quality management	83	3.0	2.0	5.0	3.695	0.8929	-0.296	-0.569
Scope management	83	4.0	1.0	5.0	3.462	0.9266	-0.215	-0.418
Risk management	83	3.0	2.0	5.0	3.708	0.6715	0.185	-0.423
Effectiveness resourcing quality individuals	83	4.0	1.0	5.0	3.463	0.8998	-0.144	-0.264
Effectiveness using relevant tools	83	4.0	1.0	5.0	3.922	0.8234	-0.784	1.200
Relationship with Peer	83	2.0	3.0	5.0	4.414	0.6039	-0.512	-0.575
Peer & team support	83	3.0	2.0	5.0	4.195	0.7721	-0.686	0.005
Peer & team respect	83	3.0	2.0	5.0	4.402	0.6782	-0.956	0.770
Teams trust	83	2.0	3.0	5.0	4.373	0.5922	-0.387	-0.556
Working atmosphere was satisfactory	83	3.0	2.0	5.0	4.097	0.8640	-0.657	-0.295
Managing offshore team	83	4.0	1.0	5.0	3.323	1.1019	-0.570	-0.303
Communication with offshore team	83	4.0	1.0	5.0	3.397	1.0889	-0.628	-0.209
Valid N (listwise)	83							

4.6.2 Factor Analysis of Management Capability

The following sub-sections show the assessments carried out to ensure appropriateness of the Management Capability data for factor analysis.

a) Correlation matrix

The correlation matrix is shown in Appendix D-3b, Table 6. Inspection of the correlation matrix revealed a substantial number of correlations between variables at or above the .3 level. There is no multi-collinearity between the predictor variables above the .7 level. These suggest appropriateness for factoring.

b) Kaiser-Meyer-Olkin (KMO) Test

The KMO value in our sample is .698, indicating adequacy to conduct factor analysis. There is a statistical significance at the <0.001 level. See Appendix D-3b, Table 7

c) Communalities

The communalities statistic is showed in Appendix D-3b, Table 8. Inspection of Statistics shows all variables are within the .5 ranges, which indicates appropriateness for factor analysis. The variable Scope management is weak at .366. This variable was kept in mind for further effects during the factor analysis process

4.6.3 Factor Analysis Solution

A principal component analysis with Varimax rotation was performed, with minimum Eigenvalue of 1.0 for factor acceptance. Factor loadings at or above .45 were considered significant and is represented in Appendix D-3b, Table 9. Four Management Capability factors were extracted in the initial analysis.

The component loadings table shows four factors which account for (cumulative %) 63.564% of variance. Although this four-factor model is interpretable, there is a variable which is not loaded in this model, which is Scope management shown in Table 5 in Appendix D-3a. This was the same variable with low Communality value identified in Table 8. Hence, it may be removed and the factor analysis performed again.

After removing this variable, iterations of factor analysis were performed until the factor model appeared stable, shown in Table 4-8. In this final model, the adequacy of the measure checks, such as variable correlation matrix, KMO, etc. were once again carried out – shown in Appendix D-3b.

While carrying out the final round of factor analysis, the factor scores were saved for further regression analyses; and named as shown in Table 4-6.

Table 4-8: Rotated Component Matrix

Rotated Component Matrix^a				
	Component			
	Team & Peer Cooperation	Delivery Capabilities	Project Management Knowledge	Offshore Team Relations
Relationship with peers	.881			
Peer & team respect	.832			
Peer & team support	.790			
Teams trust	.736			
Effectiveness using relevant tools		.820		
Effectiveness resourcing quality individuals		.648		
Quality management		.575		
Working atmosphere was satisfactory		.527		
Risk management			.723	
Time management			.719	
Cost management			.712	
Rev Offshore management				.898
Rev Communication with offshore team				.872

A brief summary of the adequacy check indicators follows:

- Inspection of the correlation matrix revealed a substantial number of correlations between variables at or above the .45 level. This suggests appropriateness for factoring.
- The KMO tests showed the overall sample MSA (Measure of Sampling Adequacy) was .694 with statistical significance at the <0.001 level. This suggests appropriateness of the data for factor analysis.
- The anti-image correlation matrix all values along the diagonal line are higher than .5, which makes it sufficient for factor analysis.
- The communalities statistic showed that all variables are with communalities in the .5 range or great than .5, which also suggests the appropriateness for factoring; now with the variable Scope management removed.

With Eigenvalue greater than 1 for each factor and 66.439% variance explained in the final solution, this factor model can be accepted on a quantitative basis. On checking the interpretability of the factors, they appear to be well interpretable by the contributing variables, thus these four factors are also supported qualitatively.

4.6.4 Reliability Test

After each round of factor analysis, reliability tests were carried out for the scales. This is to ensure internal consistency within the construct, that all factors measure the same construct of Management Capability. Table 4-9 shows the scale reliability for Management Capability factors and the number of items in each of the four factors. All Cronbach's Alpha are greater than .60.

Table 4-9: Scale reliability for Management Capability

	Factor	Cronbach's Alpha	Number of items
Management Capability	Team & Peer Cooperation	0.849	4
	Delivery Capabilities	0.666	4
	Project Management knowledge	0.652	3
	Offshore team relations	0.800	2

4.7 Refined Research Model and Research Hypotheses

Through factor analyses, the original research model is refined; the constructs for the dependent variable (perceived client satisfaction), independent variable (managers' ERP leadership competences) and moderator variable (ERP implementation context) were identified (Figure 4-1). There are now seven main hypotheses (H1, H2 ...H7) which examine the IV to DV relationships and twenty-eight sub hypotheses (H1a...H1d, H2a...H2d, ..., H7a...H7d) which test the effect of the moderator variables on the IV to DV relationships. The main hypotheses propose the relationships related to overall perceived client satisfaction, and the sub-hypotheses propose the relationships related to effect of individual moderator variables on the sub-dimensions of managers' ERP leadership competences.

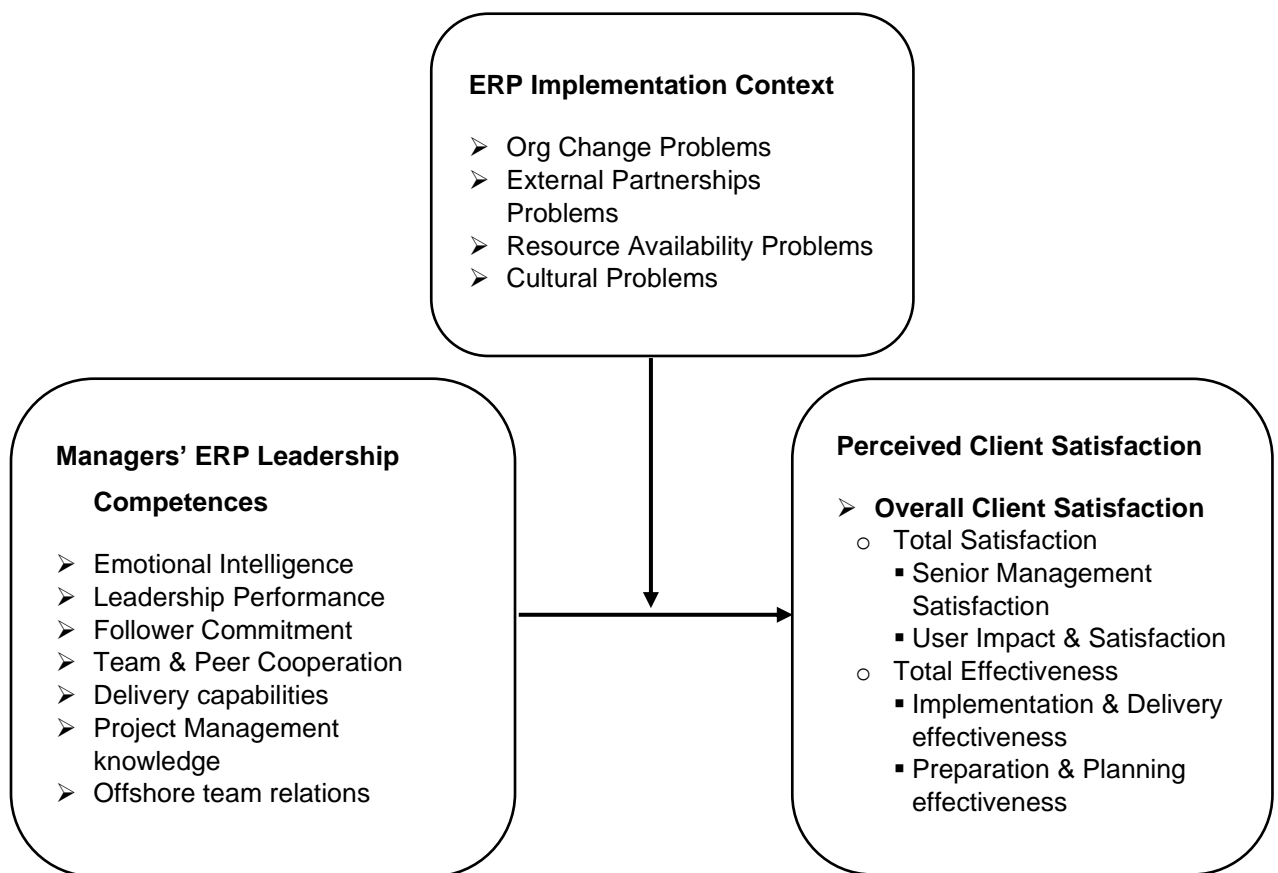


Figure 4-1: Refined Research Model

The refined research model contains the additional sub-dimensions to the main variables which were generated from the factor analysis process carried out. The refined constructs for the main variables were identified and have given rise to a refined set of hypotheses, thereby increasing the previous 4 main hypotheses to 7 main hypotheses.

4.7.1 Refined Hypotheses

By investigating the impact of each sub-dimension of ERP implementation context (i.e. organizational change problems, external partnerships problems, resource availability problems and cultural problems), four sub-hypotheses are developed for each of the seven main hypotheses. The refined hypotheses are provided below:

- H1** When controlling for Size of implementation and Years of experience, there is a positive relationship between Managers EI AND Perceived Client Satisfaction
 - H1a** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between EI AND Perceived Client Satisfaction is reduced by moderator Organizational Change Problems
 - H1b** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between EI AND Perceived Client Satisfaction is reduced by moderator External Partnerships Problems
 - H1c** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between EI AND Perceived Client Satisfaction is reduced by moderator Resource Availability Problems
 - H1d** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between EI AND Perceived Client Satisfaction is reduced by moderator Cultural Problems

- H2** When controlling for Size of implementation and Years of experience, there is a positive relationship between Managers Leadership Performance AND Perceived Client Satisfaction
 - H2a** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Leadership Performance AND Perceived Client Satisfaction is reduced by moderator Organisational Change Problems
 - H2b** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Leadership Performance AND Perceived Client Satisfaction is reduced by moderator External Partnership Problems
 - H2c** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Leadership Performance AND Perceived Client Satisfaction is reduced by moderator Resource Availability Problems
 - H2d** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Leadership Performance AND Perceived Client Satisfaction is reduced by moderator Cultural Problems

- H3** When controlling for Size of implementation and Years of experience, there is a positive relationship between Managers Follower Commitment AND Perceived Client Satisfaction.
- H3a** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Follower Commitment AND Perceived Client Satisfaction is reduced by moderator Organisational Change Problems
- H3b** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Follower Commitment AND Perceived Client Satisfaction is reduced by moderator External Partnership Problems
- H3c** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Follower Commitment AND Perceived Client Satisfaction is reduced by moderator Resource Availability Problems
- H3d** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Follower Commitment AND Perceived Client Satisfaction is reduced by moderator Cultural Problems
- H4** When controlling for Size of implementation and Years of experience, there is a positive relationship between Managers Team & Peer Cooperation AND Perceived Client Satisfaction.
- H4a** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Team & Peer Cooperation AND Perceived Client Satisfaction is reduced by moderator Organisational Change Problems
- H4b** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Team & Peer Cooperation AND Perceived Client Satisfaction is reduced by moderator External Partnership Problems
- H4c** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Team & Peer Cooperation AND Perceived Client Satisfaction is reduced by moderator Resource Availability Problems
- H4d** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Team & Peer Cooperation AND Perceived Client Satisfaction is reduced by moderator Cultural Problems
- H5** When controlling for Size of implementation and Years of experience, there is a positive relationship between Managers Delivery Capabilities AND Perceived Client Satisfaction.

- H5a** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Delivery Capabilities AND Perceived Client Satisfaction is reduced by moderator Organisational Change Problems
 - H5b** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Delivery Capabilities AND Perceived Client Satisfaction is reduced by moderator External Partnership Problems
 - H5c** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Delivery Capabilities AND Perceived Client Satisfaction is reduced by moderator Resource Availability Problems
 - H5d** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Delivery Capabilities AND Perceived Client Satisfaction is reduced by moderator Cultural Problems
-
- H6** When controlling for Size of implementation and Years of experience, there is a positive relationship between Managers PM Knowledge AND Perceived Client Satisfaction.
 - H6a** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between PM Knowledge AND Perceived Client Satisfaction is reduced by moderator Organisational Change Problems
 - H6b** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between PM Knowledge AND Perceived Client Satisfaction is reduced by moderator External Partnership Problems
 - H6c** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between PM Knowledge AND Perceived Client Satisfaction is reduced by moderator Resource Availability Problems
 - H6d** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between PM Knowledge AND Perceived Client Satisfaction is reduced by moderator Cultural Problems
-
- H7** When controlling for Size of implementation and Years of experience, there is a positive relationship between Managers Offshore Team Relations AND Perceived Client Satisfaction.
 - H7a** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Offshore Team Relations AND Perceived Client Satisfaction is reduced by moderator Organisational Change Problems
 - H7b** When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Offshore Team Relations AND Perceived Client Satisfaction is reduced by moderator External Partnership Problems

H7c When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Offshore Team Relations AND Perceived Client Satisfaction is reduced by moderator Resource Availability Problems

H7d When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Offshore Team Relations AND Perceived Client Satisfaction is reduced by moderator Cultural Problems

4.8 Refined Research Model Showing Hypotheses

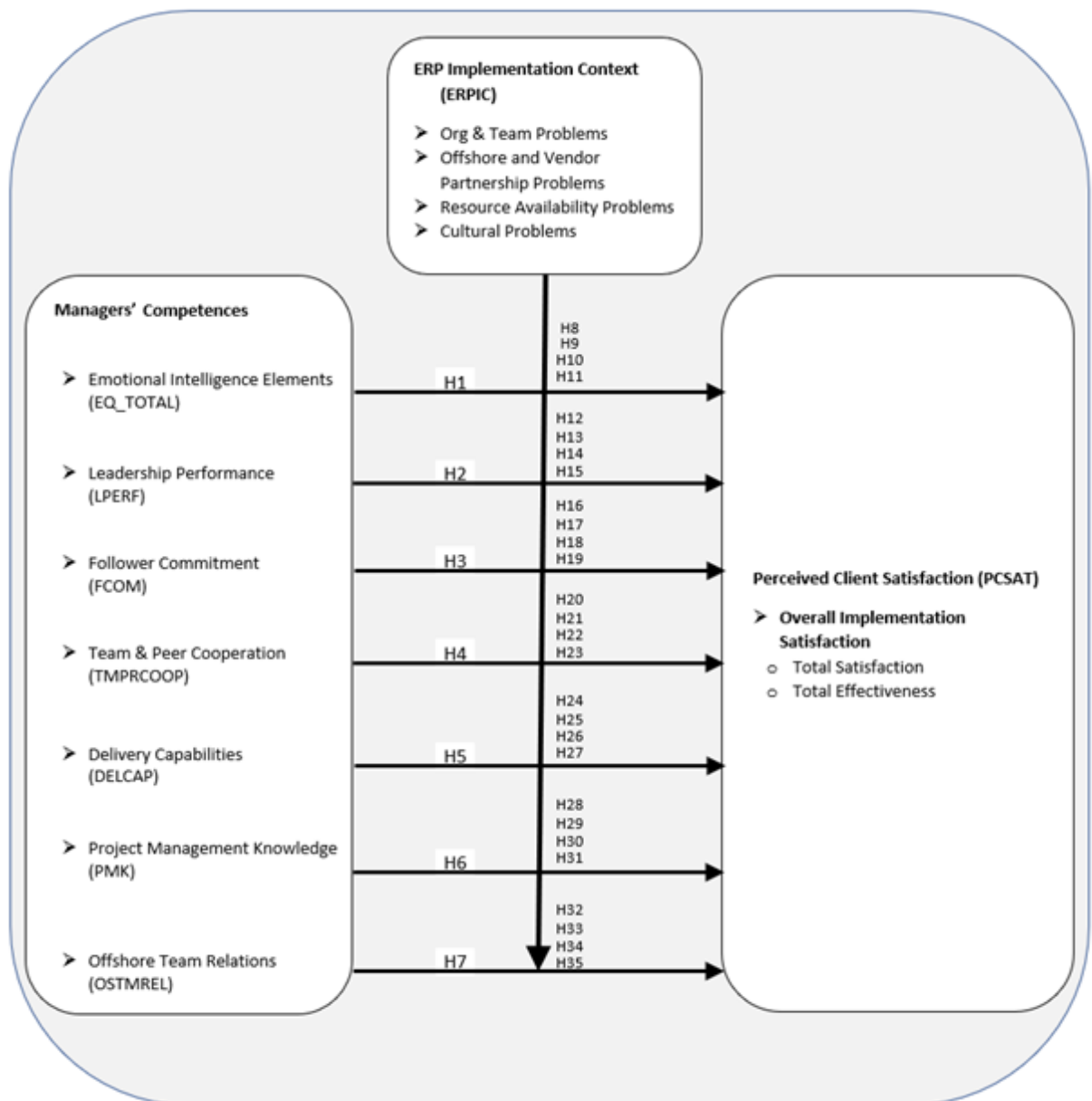


Figure 4-2: Refined Research Model indicating Hypotheses

This refined research model is shown in Figure 4-2. It highlights the connecting lines representing each of the main and sub-hypotheses. The research hypotheses direct the hierarchical regression analyses reported in the next section.

4.9 Correlation & Moderated Hierarchical Regression Analyses

In this section, correlation and a series of regression analyses are performed to test all research hypotheses listed in the previous section. This section is split into three parts: first, the correlational analysis between all variables; second, the pre-examinations to check the adequacy of performing regression analyses; explanations of why hierarchical regression analysis method is appropriate to test the research hypotheses; third, the report of the data analyses results.

4.9.1 Correlations of IVs with DV Overall Satisfaction (PCSAT)

The Pearson product-moment correlation coefficient was used to investigate the level of variance between the dependent and independent variables. Table 4-10 shows that there are significant positive relationships between PCSAT and EI ($r = .24, p < .05$), PCSAT and Leadership Performance ($r = .41, p < .01$), PCSAT and Follower Commitment ($r = .50, p < .01$), PCSAT and Team & Peer Cooperation ($r = .35, p < .01$), and PCSAT and Project Management Knowledge ($r = .27, p < .05$). These results suggest Follower Commitment (FCOM) is the strongest predictor of PCSAT, followed by Leadership Performance and Team & Peer Cooperation (TMPCOOP).

Additionally, as shown in Table 4-10, there were highly significant inter-correlations between Leadership Performance and EI ($r = .43, p < .01$), between Follower Commitment and EI ($r = .42, p < .01$), between Follower Commitment and Team & Peer Cooperation ($r = .53, p < .01$), between Follower Commitment and Leadership Performance ($r = .69, p < .01$) and between Leadership Performance and Team & Peer Cooperation ($r = .43, p < .01$). The question may arise that the inter-correlations between the mentioned independent variables are moderately high and highly significant, hence may cause the problem of multicollinearity in later regression analyses. However, even though moderately high, the correlations between the mentioned variables are still very much within the threshold of .90 of the correlation coefficients between independent variables (Hair et al., 2010). However, this indicates caution is required when testing multicollinearity issues and interpreting the results while performing regression analyses.

Table 4-10: Correlations of IVs with DV Overall Satisfaction

Variable	1	2	3	4	5	6	7	8	9	10
1 Overall Satisfaction	1									
2 Size of implementation	-0.028	1								
3 Years of experience	0.191	0.082	1							
4 EQ	.237*	-0.059	.243*	1						
5 Leadership Performance	.407**	-0.078	0.087	.429**	1					
6 Follower Commitment	.481**	0.094	0.032	.416**	.677**	1				
7 Team & Peer Cooperation	.354**	0.092	-0.065	.307**	.426**	.533**	1			
8 Delivery Capabilities	0.016	0.123	-0.155	-0.074	0.046	0.202	0.000	1		
9 PM Knowledge	.266*	0.081	.235*	0.189	0.188	0.209	0.000	0.000	1	
10 Offshore Team Relations	0.130	-0.137	-0.009	0.118	0.155	0.022	0.000	0.000	0.000	1

*p < .05. **p < .01.

4.9.2 Pre-examinations to Check the Adequacy of the Data for Performing Regression Analyses

Preliminary analyses were conducted to ensure no violations of multiple regression assumptions of normality, linearity, multicollinearity, and homoscedasticity. The tests and outcomes are further elucidated in Table 4-11.

Table 4-11: Test of assumptions for multiple regression

Test	Description
Normality	Descriptive statistics were run to explore normality. One of the underlying conceptual assumptions of regression analysis is normality; that is, the data is normally distributed. Normality was assessed by reviewing skewness and kurtosis. The inspection of skewness and kurtosis showed that all variables are within their respective thresholds of ± 1.96 and ± 3.29 (Field, 2005, p. 72). Therefore, all variables meet the requirements for normality
Linearity / Homoscedasticity	Appendix D-5a shows results of examinations carried out in relation to linearity and homoscedasticity which were examined by reviewing scatterplots and the normal probability plot (P-P) of the regression standardized residual (Pallant, 2010). A review of all scatterplots indicated no cases had a standardized residual value of more than 3.3 or less than -3.3, indicating sufficiently linear relationships and no violations of homoscedasticity (Tabachnick & Fidell, 2007). A review of normal P-Ps indicated reasonably straight lines, which also suggests no major deviations from normality.

Multicollinearity	For each round of hierarchical regression, the Coefficients table provided details of Collinearity statistics including Tolerance values (TOL) and Variance Inflation Factors (VIF). These can be seen in Appendix D-4a to D-4d. The TOL and the VIF were examined to check for violations of multicollinearity (Hair et al., 2010; Pallant, 2010). TOLs less than .10 and VIF values above 10 indicate the possibility of multicollinearity (Pallant, 2010). TOLs ranged from .38- 0.99, and VIF values ranged from 1.00-2.48, which are well within the limits and do not violate the multicollinearity assumption.
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Additionally, reliability statistics were also demonstrated to all be above 0.6 in Section 4.4.

4.9.3 Hierarchical Regression: Managers' competences and perceived client satisfaction with moderation by Resource Availability Problems

This section presents the results of the regression analyses conducted on the independent variables Managers' competences and the dependent variable Perceived client satisfaction (PCSAT) and further examines the moderating effect of moderator Resource availability problems (RAVPRB) on those relationships.

Hair et al (2010) defined the moderator effect as one in which a third independent variable (the moderator variable) causes the relationship between a dependent/independent variable pair to change, depending on the value of the moderator variable. They further explained (p. 181) that, to determine whether the moderator is significant, the researcher follows a three-step process:

1. Estimate the original (unmoderated) equation
2. Estimate the moderated relationship (original equation plus moderator variable)
3. Assess the change in R²: If it is statically significant, then a significant moderator effect is present. Only the incremental effect is assessed, not the significance of variables

Table 4-12 shows the model summary results of the hierarchical regression analysis. The control variables Size of implementation (SOI) and Years of experience (YOE) were entered in Step 1 of the regression model, explaining 3.9% of the variance in PCSAT. All control

variables demonstrated no statistical significance in Step 1. In Step 2, the moderator Resource Availability Problems (RAVPRB), and independent variables EI (EI_TOTAL), Leadership Performance (LPERF), Follower Commitment (FCOM), Team & Peer Cooperation (TMPCOOP), Delivery Capabilities (DELCAP), Project Management Knowledge (PMK), and Offshore Team Relations (OSTMREL) were added. The variance explained by the model increased to 34.5%, $\Delta R^2 = .31$, F Change (8, 72) = 4.22, $p < .005$ and was highly statistically significant – after controlling for SOI and YOE. In Step 3, Resource Availability Problem interaction variables were added and subsequently the total variance explained by the model increased to 48.6%, and as a whole resulted in a statistically significant increase in R^2 of .14, F Change (7, 65) = 2.54, $p < .05$.

Table 4-12: Model Summary: DV Overall Perceived Client Satisfaction (PCSAT) with moderator Resource Availability Problems (RAVPRB)

Model	R	R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change
					F Change	df1	df2	
1	.196 ^a	.039	1.98543	.039	1.604	2	80	.207
2	.588 ^b	.345	1.72705	.307	4.216	8	72	.000
3	.697 ^c	.486	1.61085	.141	2.538	7	65	.023

Table 4-13 presents the results of the ANOVA on the Regression data above. While model 1 is not statistically significant, models 2 and 3 are both highly significant at the 0.1% level. This demonstrates that the data from these two models fit the research model.

Table 4-13: ANOVA results: DV Overall Perceived Client Satisfaction (PCSAT) with Moderator Resource Allocation Problems (RAVPRB)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.647	2	6.323	1.604	.207 ^b
	Residual	315.353	80	3.942		
	Total	328.000	82			
2	Regression	113.246	10	11.325	3.797	.000 ^c
	Residual	214.754	72	2.983		
	Total	328.000	82			
3	Regression	159.336	17	9.373	3.612	.000 ^d
	Residual	168.664	65	2.595		
	Total	328.000	82			

Table 4-14 presents the standardized coefficient betas for all Independent variables with the Dependent variable Perceived Client Satisfaction (PCSAT). As already explained, after adding moderator Resource Availability Problems (RAVPRB), and independent variables EI (EI_TOTAL), Leadership Performance (LPERF), Follower Commitment (FCOM), Team & Peer Cooperation (TMPCOOP), Delivery Capabilities (DELCAP), Project Management Knowledge (PMK), and Offshore Team Relations (OSTMREL) in Step 2, the variance explained in the model increased to 34.5%, $F(8, 72) = 4.22$, ($p < .001$) a highly significant augmentation of 30.7% over the control variables. Only Follower Commitment ($\beta = .3$, $p < .05$) showed statistical significance in Model 2 and it also showed the strongest contribution in the model (see Table 4-13). A review of the coefficient beta values in the coefficients Table (Appendix D-4a, Table 1) shows Model 2 results also indicate a positive relationship between PCSAT and Leadership Performance ($\beta=.09$), PCSAT and Team & Peer Cooperation ($\beta=.20$), PCSAT and Project Management Knowledge ($\beta=.15$); and PCSAT and Offshore Team Relations ($\beta=.09$); however, none of these relationships are statistically significant. Furthermore, even though Team & Peer cooperation and Project Management knowledge also displayed statistical significance in step 3, their main effects in step 2 were not statistically significant, and since a main effect is one of the prerequisites to further investigate the moderating effects on a variable there is no theoretical ground to further explore the moderating effects on the two sub variables.

Table 4-14: Hierarchical Regression between Managers' competences and Perceived Client Satisfaction with moderation by Resource Availability Problems (RAVPRB); standardized coefficient betas

Standardized Coefficient Betas	Model 1	Model 2	Model 3
Control Variables			
Years of Experience	0.195	0.150	0.124
Size of Implementation	-0.044	-0.101	-0.155
Moderator			
Resource Availability Problems (RAVPRB)		-0.132	4.799**
Main Effect			
EI (EI_TOTAL)		-0.076	-0.149
Leadership Performance (LPERF)		0.093	0.112
Follower Commitment (FCOM)		0.299*	0.348*
Team & Peer Cooperation (TMPRCOOP)		0.198	0.271*
Delivery Capabilities (DELCAP)		-0.046	0.133
Project Management knowledge (PMK)		0.148	0.232*
Offshore Team Relations (OSTMREL)		0.089	0.171
Interaction Terms			
RAVPRB x EI_TOTAL			-2.920
RAVPRB x LPERF			-4.259*
RAVPRB x FCOM			2.336
RAVPRB x TMPRCOOP			-0.028
RAVPRB x DELCAP			-0.155
RAVPRB x PMK			-0.184
RAVPRB x OSTMREL			-0.116
R ²	0.039	0.345	0.486
% of DV variance explained	3.9	34.5	48.6
R ² Change	0.039	0.307**	0.141*
Augmented % of DV variance explained		30.7	14.1
F	1.604	3.797**	2.538*
df	2	8	15
R ² Adjusted	0.015	0.254**	0.351*

* $p \leq .05$. ** $p \leq .01$

Table 4-14 shows that after Resource Availability Problems (RAVPRB) interaction variables were added in Step 3, the total variance explained by the model as a whole resulted in a

statistically significant increase in R^2 of .14, F change (7, 65) = 2.54, $p < .05$. Table 4-14 also presents data on the percentage of the variance on the DV explained by the IVs (R square X 100). Thus, model 1 (control variables) accounts for 3.9% of the variance, model 2 for 34.5%, a highly significant augmentation of 30.7% over the control variables; and model 3 (moderator) for 48.6%, a significant augmentation of 14.1% over models 1 plus 2.

In sum, control variables SOI and YOE made no statistically significant contribution in any of the three models. After the effects of the control variables were statistically removed, Follower Commitment (FCOM) ($\beta = .35$, $p < .01$, $pr^2 = .08$) demonstrated statistical significance in both Models 2 and 3, Team & Peer Cooperation ($\beta = .27$, $p < .05$) and Project Management Knowledge ($\beta = .23$, $p < .05$) additionally showed statistical significance in Model 3.

4.9.4 Hierarchical Regression: Managers' Competences and Perceived Client Satisfaction and Moderation by Organizational Change Problems

This section presents the results of the regression analyses conducted on independent variables Managers' Competences and the dependent variable Perceived Client Satisfaction and further examines the moderating effects of moderator Organizational Change Problems on those relationships.

Table 4-15 shows the model summary results of the hierarchical regression analysis. Control variables Size of implementation (SOI) and Years of experience (YOE) were entered in Step 1 of the regression model, explaining 3.9% of the variance in PCSAT. All control variables demonstrated no statistical significance in Step 1. In Step 2, moderator Organizational Change Problems (OCPRB) and independent variables EI (EI_TOTAL), Leadership Performance (LPERF), Follower Commitment (FCOM), Team & Peer Cooperation (TMPCOOP), Delivery Capabilities (DELCAP), Project Management knowledge (PMK), and Offshore Team Relations (OSTMREL) were added. The variance explained by the model increased to 33.3%, $\Delta R^2 = .29$, F Change (8, 72) = 3.97, $p < .005$ and was highly statistically significant. In Step 3, Organizational Change Problems interaction variables were added and subsequently the total variance explained by the model increased to 36.4%, $\Delta R^2 = .03$, F Change (7, 65) = .46, $p = ns$.

Table 4-15: Model Summary: DV Overall Perceived Client Satisfaction (PCSAT) with moderator Organisational Change Problems (OCPRB)

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change
						F Change	df1	df2	
1	.196 ^a	.039	.015	1.98543	.039	1.604	2	80	.207
2	.577 ^b	.333	.240	1.74322	.294	3.972	8	72	.001
3	.604 ^c	.364	.198	1.79093	.031	.459	7	65	.860

Table 4-16 presents the results of the ANOVA on the Regression data above. While model 1 is not statistically significant, models 2 and 3 are both significant at the 0.1% and 1.2% levels respectively. This demonstrates that the data from these two models fit the research model.

Table 4-16: ANOVA results: DV Overall Perceived Client Satisfaction (PCSAT with moderator Organisational Change Problems (OCPRB))

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.647	2	6.323	1.604	.207 ^b
	Residual	315.353	80	3.942		
	Total	328.000	82			
2	Regression	109.205	10	10.921	3.594	.001 ^c
	Residual	218.795	72	3.039		
	Total	328.000	82			
3	Regression	119.517	17	7.030	2.192	.012 ^d
	Residual	208.483	65	3.207		
	Total	328.000	82			

Table 4-17 presents the standardized coefficient betas for the Independent variables with the Dependent variable Perceived Client Satisfaction (PCSAT). As already explained, after adding moderator Organisational Change Problems (OCPRB) and independent variables EI (EI_TOTAL), Leadership Performance (LPERF), Follower Commitment (FCOM), Team & Peer Cooperation (TMPCOOP), Delivery Capabilities (DELCAP), Project Management Knowledge (PMK), and Offshore Team Relations (OSTMREL) in Step 2, the variance explained in the model increased to 33.3%, $F(8, 72) = 4.0$, ($p < .005$) a highly significant augmentation of 29.4% over the control variables. Only Follower Commitment ($\beta = .35$, $p < .05$) showed statistical significance in Model 2 and it also showed the strongest contribution in the model (see Table 4-17). In the coefficients table (Appendix D-4b, Table 1), Model 2 results also indicate a positive relationship between PCSAT and Leadership Performance ($\beta=.05$), PCSAT and Team & Peer Cooperation ($\beta=.18$), PCSAT and Project Management Knowledge ($\beta=.16$); and between PCSAT and Offshore Team Relations ($\beta=.10$); however, none of these relationships are statistically significant.

Table 4-17: Hierarchical Regression between MELC and PCSAT with moderator Organisational Change Problems (ERP Context); standardized coefficient betas

	Model 1	Model 2	Model 3
Control Variables			
Years of experience	0.195	0.175	0.133
Coded Size of implementation A2	-0.044	-0.088	-0.046
Moderator			
Organisational Change Problems (OCPRB)		-0.044	-1.797
Main Effect			
EI Total (EI_TOTAL)		-0.083	-0.031
Leadership Performance (LPERF)		0.053	0.119
Follower Commitment (FCOM)		0.345*	0.319
Team & Peer Cooperation (TMPRCOOP)		0.179	0.130
Delivery Capabilities (DELCAP)		-0.015	0.013
Project Management knowledge (PMK)		0.161	0.170
Offshore Team Relations (OSTMREL)		0.103	0.116
Interaction Terms			
OCPRB x EI_TOTAL			0.093
OCPRB x LPERF			0.576
OCPRB x FCOM			1.070
OCPRB x TMPRCOOP			-0.010
OCPRB x DELCAP			0.074
OCPRB x PMK			-0.050
OCPRB x OSTMREL			0.086
R ²	0.039	0.333	0.364
Adjusted R ²	0.015	0.24**	0.198
% of DV variance explained	3.9	33.3	36.4
R ² Change	0.039	0.294**	0.031
Augmented % of DV variance explained		29.4	3.1
F Change	1.604	3.972**	0.459
df	2	8	15

* $p \leq .05$. ** $p \leq .01$

Table 4-17 shows that after the Organisational Change Problems (OCPRB) interaction variables were added in Step 3, the total variance explained by the model as a whole resulted in an increase in R^2 of .03, F change (7, 65) = .46; however, it was not statistically significant (see Model summary Table 4-15). Table 4-14 also presents data on the percentage of the variance on the DV explained by the IVs (R square X 100).

Thus, model 1 (control variables) accounts for 3.9% of the variance, model 2 for 33.3%, a highly significant augmentation of 29.4% over the control variables; and model 3 (moderator) for 36.4%, a significant augmentation of 3.1% over models 1 plus 2.

In sum, the control variables SOI and YOE made no statistically significant contribution in any of the three models. A review of the standardized coefficient beta values (Appendix D-4b, Table 1) indicates Follower Commitment (FCOM) is the only Managers' Competences sub variable that demonstrated statistical significance in Model 2 ($\beta = .35$, $p < .05$, $pr^2 = .07$) and is marginally significant in Model 3 at $p = .06$ ($\beta = .32$).

4.9.5 Hierarchical Regression: Managers' competences and perceived client satisfaction with moderation by External Partnership Problems

This section presents the results of the regression analyses conducted on independent variables Managers' competences and dependent variable Perceived client satisfaction (PCSAT) and further examines the moderating effects of moderator External Partnership Problems (EPPRB) on the mentioned relationships.

Table 4-18 shows the model summary results of the hierarchical regression analysis. Control variables Size of implementation (SOI) and Years of experience (YOE) were entered in Step 1 of the regression model, explaining 3.9% of the variance in PCSAT. All control variables demonstrated no statistical significance in Step 1. In Step 2, moderator External Partnership Problems (EPPRB) and independent variables EI (EI_TOTAL), Leadership Performance (LPERF), Follower Commitment (FCOM), Team & Peer Cooperation (TMPCOOP), Delivery Capabilities (DELCAP), Project Management Knowledge (PMK), and Offshore Team Relations (OSTMREL) were added. The variance explained in the model increased to 33.3%, $\Delta R^2 = .29$, F Change (8, 72) = 3.98, $p < .001$ and was highly statistically significant. In Step 3, External Partnership Problems interaction variables were added and subsequently the total variance explained by the model increased to 41.2%, $\Delta R^2 = .08$, F Change (7, 65) = 1.25, $p = ns$.

Table 4-18: Model Summary: DV Overall Perceived Client Satisfaction (PCSAT) with moderator External Partnership (EPPRB)

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change
						F Change	df1	df2	
1	.196 ^a	.039	.015	1.98543	.039	1.604	2	80	.207
2	.577 ^b	.333	.241	1.74289	.295	3.977	8	72	.001
3	.642 ^c	.412	.258	1.72233	.079	1.247	7	65	.291

Table 4-19 presents the results of the ANOVA on the Regression data above. While model 1 is not statistically significant, models 2 and 3 are both highly significant at the 0.1% and 0.2% levels respectively. This demonstrates that the data from these two models fit the research model.

Table 4-19: ANOVA results: DV Overall Perceived Client Satisfaction (PCSAT) with moderator External Partnership (EPPRB)

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.647	2	6.323	1.604	.207 ^b
	Residual	315.353	80	3.942		
	Total	328.000	82			
2	Regression	109.287	10	10.929	3.598	.001 ^c
	Residual	218.713	72	3.038		
	Total	328.000	82			
3	Regression	135.182	17	7.952	2.681	.002 ^d
	Residual	192.818	65	2.966		
	Total	328.000	82			

Table 4-20 presents the standardized coefficient betas for the Independent variables with the Dependent variable Perceived Client Satisfaction (PCSAT). As previously explained, after adding moderator External Partnership Problems (EPPRB) and independent variables EI (EI_TOTAL), Leadership Performance (LPERF), Follower Commitment (FCOM), Team & Peer Cooperation (TMPCOOP), Delivery Capabilities (DELCAP), Project Management Knowledge (PMK), and Offshore Team Relations (OSTMREL) in Step 2, the variance explained in the model increased to 29.5%, $F(8, 72) = 4.0$, ($p < .005$) a highly significant augmentation of 25.6% over the control variables. Only Follower Commitment ($\beta = .34$, $p < .05$) showed statistical significance in Model 2 and it also showed the strongest contribution in the model (see Table 4-20).

Table 4-20: Hierarchical Regression between MELC and PCSAT with moderator External Partnership Problems (ERP Implementation context); standardized coefficient betas

Standardized Coefficient Betas	Model 1	Model 2	Model 3
Control Variables			
Years of experience	0.195	0.175	0.186
Coded Size of implementation	-0.044	-0.098	-0.065
Moderator			
External Partnership Problems (EPPRB)		0.048	1.424
Main Effect			
EI (EI_TOTAL)		-0.090	-0.096
Leadership Performance (LPERF)		0.064	0.105
Follower Commitment (FCOM)		0.341*	0.220
Team & Peer Cooperation (TMPCOOP)		0.203	0.214
Delivery Capabilities (DELCAP)		-0.024	0.075
Project Management knowledge (PMK)		0.175	0.206*
Offshore Team Relations (OSTMREL)		0.127	0.158
Interaction Terms			
EPPRB x EI_TOTAL			1.409
EPPRB x LPERF			-1.036
EPPRB x FCOM			-1.743
EPPRB x TMPCOOP			0.069
EPPRB x DELCAP			0.223*
EPPRB x PMK			0.180
EPPRB x OSTMREL			0.113
R ²	0.039	0.333	0.412
% of DV variance explained	3.9	33.3	41.2
R ² Adjusted	0.015	0.241**	0.258
R ² Change	0.039	0.295**	0.079
Augmented % of DV variance explained		29.5	7.9
F Change	1.604	3.977**	1.247
df	2	8	15

* $p \leq .05$. ** $p \leq .01$

In the coefficients table (Appendix D-4c, Table 1) Model 2 results also indicate a positive relationship between PCSAT and Leadership Performance ($\beta=.06$), PCSAT and Team & Peer

Cooperation ($\beta=.20$), PCSAT and Project Management Knowledge ($\beta=.18$); and PCSAT and Offshore Team Relations ($\beta=.13$); however, none of these relationships are statistically significant.

Table 4-20 shows that after External Partnership (EPPRB) interaction variables were added in Step 3, the total variance explained by the model as a whole resulted in an increase in R^2 of .08, F change (7, 65) = 1.25; however, it was not statistically significant (see Model summary, Table 4-18). Table 4-20 also presents data on the percentage of variance on the DV explained by the IVs (R square X 100). Thus, model 1 (control variables) accounts for 3.9% of the variance, model 2 for 29.5%, a highly significant augmentation of 33.3% over the control variables; and model 3 (moderator) for 41.2%, an augmentation of 7.9% over models 1 plus 2.

In sum, control variables SOI and YOE made no statistically significant contribution in any of the three models. After the effects of the control variables were statistically removed, Follower Commitment (FCOM) was the Managers' Competences sub variable that demonstrated statistical significance and contributed the most variance in Model 2 ($\beta = .34$, $p < .05$, $pr^2 = .07$) and in Model 3 ($\beta = .22$) very marginally significant ($p \leq .1$). Moreover, even though Project Management Knowledge (PMK) demonstrated statistical significance in Model 3 at ($\beta = .21$, $p = .05$), its main effect in step 2 was not statistically significant, and since a main effect is one of the prerequisites to further investigate the moderating effects on a variable there is no theoretical ground to further explore the moderating effects on the sub variable PMK.

4.9.6 Hierarchical Regression: Managers' competences and perceived client satisfaction with moderation by Cultural problems

This section presents the results of the regression analyses conducted on managers' competences and perceived client satisfaction (PCSAT) and then examines the moderating effect of cultural problems (CULTPRB) on the separate direct relationships.

Table 4-21 shows the results of the hierarchical regression analysis. Again, as was done in previous regression sections, control variables Size of implementation (SOI) and Years of experience (YOE) were entered in Step 1 of the regression model, explaining 3.9% of the variance in PCSAT. All control variables demonstrated no statistical significance in Step 1. In

Step 2, moderator Cultural Problems (CULTPRB) as well as independent variables, EI (EI_TOTAL), Leadership Performance (LPERF), Follower Commitment (FCOM), Team & Peer Cooperation (TMPCOOP), Delivery Capabilities (DELCAP), Project Management knowledge (PMK), and Offshore Team Relations (OSTMREL) were added. The variance explained in the model increased to 34%, $\Delta R^2 = .30$, F Change (8, 72) = 4.10, $p < .005$ and was highly statistically significant. In Step 3, Cultural Problems interaction variables were added and subsequently the total variance explained by the model increased to 37.8%, $\Delta R^2 = .04$, F Change (7, 65) = .57, $p = ns$.

Table 4-21: Model Summary: DV Overall Perceived Client Satisfaction (PCSAT) with moderator Cultural Problems (CULTPRB)

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			Sig. F Change
						F Change	df1	df2	
1	.196 ^a	.039	.015	1.98543	.039	1.604	2	80	.207
2	.582 ^b	.339	.248	1.73490	.301	4.097	8	72	.000
3	.615 ^c	.378	.215	1.77194	.038	.574	7	65	.774

Table 4-22 presents the results of the ANOVA on the Regression data above. While model 1 is not statistically significant, model 2 and 3 are both highly significant at the 0.1% and 0.8% levels respectively. This demonstrates that the data from these two models fit the research model.

Table 4-22: ANOVA results: DV Overall Perceived Client Satisfaction (PCSAT) with moderator Cultural Problems (CULTPRB)

		ANOVA				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.647	2	6.323	1.604	.207 ^b
	Residual	315.353	80	3.942		
	Total	328.000	82			
2	Regression	111.290	10	11.129	3.698	.001 ^c
	Residual	216.710	72	3.010		
	Total	328.000	82			
3	Regression	123.915	17	7.289	2.322	.008 ^d
	Residual	204.085	65	3.140		
	Total	328.000	82			

Table 4-23 presents the standardized coefficient betas for the Independent variables with the Dependent variable Perceived Client Satisfaction (PCSAT). As previous shown, after adding moderator Cultural Problems (CULTPRB) and independent variables, EI (EI_TOTAL), Leadership Performance (LPERF), Follower Commitment (FCOM), Team & Peer Cooperation (TMPCOOP), Delivery Capabilities (DELCAP), Project Management Knowledge (PMK), and Offshore Team Relations (OSTMREL) in Step 2, the variance explained in the model increased to 33.9%, $F Change (8, 72) = 4.1, (p < .005)$ a highly significant augmentation of 30% over the control variables. Only Follower Commitment showed statistical significance in Models 2 ($\beta = .37, p < .05$) and 3 ($\beta = .45, p < .01$) - it also showed the strongest contribution in the models (see Table 4-20).

Table 4-23: Hierarchical Regression between MELC and PCSAT with moderator CULTPRB (ERP Implementation context); standardized coefficient betas

Standardized Coefficient Betas	Model 1	Model 2	Model 3
Control Variables			
Years of experience	0.195	0.186	0.110
Coded Size of implementation	-0.044	-0.121	-0.145
Moderator			
Cultural Problems (CULTPRB)		0.102	-0.501
Main Effect			
EI (EI_TOTAL)		-0.077	-0.085
Leadership Performance (LPERF)		0.057	0.077
Follower Commitment (FCOM)		0.372*	0.445**
Team & Peer Cooperation (TMPCOOP)		0.174	0.135
Delivery Capabilities (DELCP)		-0.014	-0.093
Project Management knowledge (PMK)		0.151	0.168
Offshore Team Relations (OSTMREL)		0.134	0.156
Interaction Terms			
CULTPRB x EI_TOTAL			-0.043
CULTPRB x LPERF			2.241
CULTPRB x FCOM			-1.570
CULTPRB x TMPCOOP			-0.037
CULTPRB x DELCP			-0.027
CULTPRB x PMK			-0.097
CULTPRB x OSTMREL			0.022
R ²	0.039	0.339	0.378
% of DV variance explained	3.9	33.9	37.8
Adjusted R ²	0.015	0.248**	0.215
R ² Change	0.039	0.301**	0.038
Augmented % of DV variance explained		30.1	3.8
F Change	1.604	4.097**	0.574
df1	2	8	15

* $p \leq .05$. ** $p \leq .01$

In the coefficients table (Appendix D-4d, Table 1), Model 2 results also indicate a positive relationship between PCSAT and Leadership Performance ($\beta=.06$); PCSAT and Team & Peer

Cooperation ($\beta=.17$); PCSAT and Project Management Knowledge ($\beta=.15$); and PCSAT and Offshore Team Relations ($\beta=.13$); however, none of these relationships are significant.

Table 4-23 also presents data on the percentage of the variance on the DV explained by the IVs (R square X 100). Thus, model 1 (control variables) accounts for 3.9% of the variance, model 2 for 33.9%, a highly significant augmentation of 30.1% over the control variables; and model 3 (moderator) for 37.8%, a significant augmentation of 3.8% over models 1 plus 2.

In sum, control variables SOI and YOE made no statistically significant contribution in any of the three models. After the effects of the control variables were statistically removed, Follower Commitment (FCOM) is the Managers' Competences sub variable that demonstrated statistical significance in both Models 2 ($\beta = .37, p < .05$) and Model 3 ($\beta = .44, p < .01$). This further suggests a high interaction between Follower commitment and the moderator / ERP context sub variable Cultural Problems (CULTPRB).

4.10 Hierarchical Regression Summary and Hypotheses Test

Results

This section presents the results of the data analysis conducted to examine the moderating effect of the ERP Context factors on the relationship between managers' competences and perceived client satisfaction. Preliminary analysis included descriptive statistics, participant response rates and demographics, and an examination of assumptions associated with multiple regression analysis. An assessment of reliability and correlations among the sub scales and results of the statistical analysis to test the hypotheses were presented. A summary of all hypothesis testing appears towards the end of this chapter and the implications of these findings are discussed in Chapter 5.

4.10.1 Testing Main Effects: Hypotheses H1 to H7

Hypotheses H1 to H7 represent the main effects in the current study, the direct positive relationships between the independent variables and the dependent variable. Hypotheses H1 to H7 predicted that when controlling for Size of implementation and Years of experience, there is a positive relationship between EI and Perceived Client Satisfaction (H1); Leadership Performance and Perceived Client Satisfaction (H2); Follower Commitment and Perceived Client Satisfaction (H3); Team & Peer Cooperation and Perceived Client Satisfaction (H4); Delivery Capabilities and Perceived Client Satisfaction (H5); Project Management knowledge and Perceived Client Satisfaction (H6); and Offshore Team Relations and Perceived Client Satisfaction (H7).

As discussed in previous sections, the Pearson product-moment correlation coefficient was used to investigate the level of variance between the dependent and independent variables. Table 4-10 shows that there are significant positive relationships between PCSAT and EI ($r = .24, p < .05$), PCSAT and Leadership Performance ($r = .41, p < .01$), PCSAT and Follower Commitment ($r = .50, p < .01$), PCSAT and Team & Peer Cooperation ($r = .35, p < .01$), and PCSAT and Project Management Knowledge ($r = .27, p < .05$). Delivery Capabilities and Offshore Team Relations displayed no statistical significance in relation to PCSAT. These results suggest Follower Commitment (FCOM) is the strongest predictor of PCSAT.

Based on this appraisal it can be reported that Hypothesis H1, H2, H3, H4 and H6 are Supported while Hypotheses H5 and H7 are Rejected.

Table 4-24: Results of Main Hypotheses H1 to H7

ID	Hypothesis	Result
H1	When controlling for Size of implementation and Years of experience, there is a positive relationship between Managers EI AND Perceived Client Satisfaction	Supported
H2	When controlling for Size of implementation and Years of experience, there is a positive relationship between Managers Leadership Performance AND Perceived Client Satisfaction	Supported
H3	When controlling for Size of implementation and Years of experience, there is a positive relationship between Managers Follower Commitment AND Perceived Client Satisfaction.	Supported
H4	When controlling for Size of implementation and Years of experience, there is a positive relationship between Managers Team & Peer Cooperation AND Perceived Client Satisfaction.	Supported
H5	When controlling for Size of implementation and Years of experience, there is a positive relationship between Managers Delivery Capabilities AND Perceived Client Satisfaction.	Rejected
H6	When controlling for Size of implementation and Years of experience, there is a positive relationship between Managers PM Knowledge AND Perceived Client Satisfaction.	Supported
H7	When controlling for Size of implementation and Years of experience, there is a positive relationship between Managers Offshore Team Relations AND Perceived Client Satisfaction.	Rejected

4.10.2 Testing Moderation Effects: Hypotheses H1a to H7a (moderator - Organisational Change Problems (OCPRB))

Hypotheses H1a to H7a represent moderation effects in the current study by the ERP implementation context sub variable Organisational Change Problems (OCPRB). Hypotheses H1a to H7a posited that when controlling for Size of implementation and Years of experience, the relationship between EI and Perceived Client Satisfaction is moderated by Organisational Change Problems (H1a); the relationship between Leadership Performance and Perceived Client Satisfaction is moderated by Organisational Change Problems (H2a); the relationship between Follower Commitment and Perceived Client Satisfaction is moderated by Organisational Change Problems (H3a); the relationship between Team & Peer Cooperation and Perceived Client Satisfaction is moderated by Organisational Change Problems (H4a); the relationship between Delivery Capabilities and Perceived Client Satisfaction is moderated by Organisational Change Problems (H5a); the relationship between Project Management knowledge and Perceived Client Satisfaction is moderated by Organisational Change Problems (H6a); and the relationship between Offshore Team Relations and Perceived Client Satisfaction is moderated by Organisational Change Problems (H7a).

As previously discussed, an appraisal of the correlation results in Table 4-10 shows that there are significant positive relationships between PCSAT and EI ($r = .24, p < .05$), PCSAT and Leadership Performance ($r = .41, p < .01$), PCSAT and Follower Commitment ($r = .50, p < .01$), PCSAT and Team & Peer Cooperation ($r = .35, p < .01$), and PCSAT and Project Management Knowledge ($r = .27, p < .05$). These results suggest Follower Commitment (FCOM) is the strongest predictor of PCSAT followed by Team & Peer Cooperation (TMPRCOOP). This appraisal is combined with the analysis of the regression models provided in relation to Table 4-17 as discussed in section 4.7, showing that after the effects of the control variables were statistically removed, Follower Commitment (FCOM) was the only Managers' Competences sub variable that demonstrated statistical significance in Model 2 ($\beta = .35, p < .05, pr^2 = .07$) and additionally showed marginal significance in Model 3 at $p = .06$ ($\beta = .32$) upon addition of the interaction variables (moderation). It can thus be reported as shown in Table 4-25, that Hypothesis H3a is Supported, while Hypotheses H1a, H2a, H4a, H5a, H6a, H7a are not supported, therefore Rejected.

Table 4-25: Results of Hypotheses H1a – H7a

ID	Hypothesis	Result
H1a	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between EI AND Perceived Client Satisfaction is reduced by moderator Organisational Change Problems	Rejected
H2a	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Leadership Performance AND Perceived Client Satisfaction is reduced by moderator Organisational Change Problems	Rejected
H3a	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Follower Commitment AND Perceived Client Satisfaction is reduced by moderator Organisational Change Problems	Supported
H4a	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Team & Peer Cooperation AND Perceived Client Satisfaction is reduced by moderator Organisational Change Problems	Rejected
H5a	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Delivery Capabilities AND Perceived Client Satisfaction is reduced by moderator Organisational Change Problems	Rejected
H6a	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between PM Knowledge AND Perceived Client Satisfaction is reduced by moderator Organisational Change Problems	Rejected
H7a	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Offshore Team Relations AND Perceived Client Satisfaction is reduced by moderator Organisational Change Problems	Rejected

4.10.3 Testing Moderation Effects: Hypotheses H1b to H7b (moderator - External Partnership Problems (EPPRB))

Hypotheses H1b to H7b represent moderation effects in the current study by the ERP implementation context sub variable External Partnership Problems (EPPRB). Hypotheses H1b to H7b posited that when controlling for Size of implementation and Years of experience, the relationship between EI and Perceived Client Satisfaction is moderated by External Partnership Problems (H1b); the relationship between Leadership Performance and Perceived Client Satisfaction is moderated by External Partnership Problems (H2b); the relationship between Follower Commitment and Perceived Client Satisfaction is moderated by External Partnership Problems (H3b); the relationship between Team & Peer Cooperation and Perceived Client Satisfaction is moderated by External Partnership Problems (H4b); the relationship between Delivery Capabilities and Perceived Client Satisfaction is moderated by External Partnership Problems (H5b); the relationship between Project Management knowledge and Perceived Client Satisfaction is moderated by External Partnership Problems (H6b); and the relationship between Offshore Team Relations and Perceived Client Satisfaction is moderated by External Partnership Problems (H7b).

As previously discussed, an appraisal of the correlation results from Table 4-10 shows that there are significant positive relationships between PCSAT and EI ($r = .24, p < .05$), PCSAT and Leadership Performance ($r = .41, p < .01$), PCSAT and Follower Commitment ($r = .50, p < .01$), PCSAT and Team & Peer Cooperation ($r = .35, p < .01$), and PCSAT and Project Management Knowledge ($r = .27, p < .05$). These results suggest Follower Commitment (FCOM) is the strongest predictor of PCSAT. When this appraisal is combined with analysis of the regression models provided in relation to Table 4-20 as discussed in section 4.7, after the effects of the control variables were statistically removed, Follower Commitment (FCOM) was the Managers' Competences sub variable that demonstrated statistical significance and contributed the most variance in Model 2 ($\beta = .34, p < .05, pr^2 = .07$) and in Model 3 ($\beta = .22$) very marginally significant ($p < .1$). It can thus be reported as shown in Table 4-26 that Hypothesis H3b is partially supported and Hypotheses H1b, H2b, H4b, H5b, H6b, H7b are not supported - therefore Rejected.

Table 4-26: Results of Hypotheses H1b – H7b

ID	Hypothesis	Result
H1b	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between EI AND Perceived Client Satisfaction is reduced by moderator External Partnership Problems	Rejected
H2b	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Leadership Performance AND Perceived Client Satisfaction is reduced by moderator External Partnership Problems	Rejected
H3b	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Follower Commitment AND Perceived Client Satisfaction is reduced by moderator External Partnership Problems	Partially Supported
H4b	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Team & Peer Cooperation AND Perceived Client Satisfaction is reduced by moderator External Partnership Problems	Rejected
H5b	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Delivery Capabilities AND Perceived Client Satisfaction is reduced by moderator External Partnership Problems	Rejected
H6b	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between PM Knowledge AND Perceived Client Satisfaction is reduced by moderator External Partnership Problems	Rejected
H7b	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Offshore Team Relations AND Perceived Client Satisfaction is reduced by moderator External Partnership Problems	Rejected

4.10.4 Testing Moderation Effects: Hypotheses H1c to H7c (moderator - Resource Availability Problems (RAVPRB))

Hypotheses H1c to H7c represent moderation effects in the current study by the ERP implementation context sub variable Resource availability problems. Hypotheses H1c to H7c posited that when controlling for Size of implementation and Years of experience, the relationship between EI and Perceived Client Satisfaction is moderated by Resource availability problems (H1c); the relationship between Leadership Performance and Perceived Client Satisfaction is moderated by Resource availability problems (H2c); the relationship between Follower Commitment and Perceived Client Satisfaction is moderated by Resource availability problems (H3c); the relationship between Team & Peer Cooperation and Perceived Client Satisfaction is moderated by Resource availability problems (H4c); the relationship between Delivery Capabilities and Perceived Client Satisfaction is moderated by Resource availability problems (H5c); the relationship between Project Management knowledge and Perceived Client Satisfaction is moderated by Resource availability problems (H6c); and the relationship between Offshore Team Relations and Perceived Client Satisfaction is moderated by Resource availability problems (H7c).

As previously discussed, an appraisal of the correlation results in Table 4-10 showed there are significant positive relationships between PCSAT and EI ($r = .24, p < .05$), PCSAT and Leadership Performance ($r = .41, p < .01$), PCSAT and Follower Commitment ($r = .50, p < .01$), PCSAT and Team & Peer Cooperation ($r = .35, p < .01$), and PCSAT and Project Management Knowledge ($r = .27, p < .05$). This appraisal is combined with analysis of the regression models provided in relation to Table 4-14 as discussed in section 4.7 where Model 2 indicated only Follower Commitment was statistically significant ($\beta = .30, p < .05$); and also statistically significant after the inclusion of the interaction variables in Model 3 ($\beta = .35, p < .05$), representing moderation by Resource availability problems. Also, Team & Peer Cooperation ($\beta = .27, p < .05$) and Project Management Knowledge ($\beta = .23, p < .05$) additionally showed statistical significance in Model 3. It can thus be reported as shown in Table 4-27, that Hypothesis H3c, H4c and H6c are Supported, while Hypotheses H1c, H2c, H5c and H7c are Rejected.

Table 4-27: Results of Hypotheses H1c – H7c

ID	Hypothesis	Result
H1c	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between EI AND Perceived Client Satisfaction is reduced by moderator Resource Availability Problems	Rejected
H2c	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Leadership Performance AND Perceived Client Satisfaction is reduced by moderator Resource Availability Problems	Rejected
H3c	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Follower Commitment AND Perceived Client Satisfaction is reduced by moderator Resource Availability Problems	Supported
H4c	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Team & Peer Cooperation AND Perceived Client Satisfaction is reduced by moderator Resource Availability Problems	Supported
H5c	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Delivery Capabilities AND Perceived Client Satisfaction is reduced by moderator Resource Availability Problems	Rejected
H6c	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between PM Knowledge AND Perceived Client Satisfaction is reduced by moderator Resource Availability Problems	Supported
H7c	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Offshore Team Relations AND Perceived Client Satisfaction is reduced by moderator Resource Availability Problems	Rejected

4.10.5 Testing Moderation Effects: Hypotheses H1d to H7d (moderator - Cultural Problems (CULTPRB))

Hypotheses H1d to H7d represent moderation effects in the current study by the ERP implementation context sub variable Cultural Problems (CULTPRB). Hypotheses H1d to H7d posited that when controlling for Size of implementation and Years of experience, the relationship between EI and Perceived Client Satisfaction is moderated by Cultural Problems (H1d); the relationship between Leadership Performance and Perceived Client Satisfaction is moderated by Cultural Problems (H2d); the relationship between Follower Commitment and Perceived Client Satisfaction is moderated by Cultural Problems (H3d); the relationship between Team & Peer Cooperation and Perceived Client Satisfaction is moderated by Cultural Problems (H4d); the relationship between Delivery Capabilities and Perceived Client Satisfaction is moderated by Cultural Problems (H5d); the relationship between Project Management knowledge and Perceived Client Satisfaction is moderated by Cultural Problems (H6d); and the relationship between Offshore Team Relations and Perceived Client Satisfaction is moderated by Cultural Problems (H7d).

As previously discussed, an appraisal of the correlation results in Table 4-10 shows that there are significant positive relationships between PCSAT and EI ($r = .24, p < .05$), PCSAT and Leadership Performance ($r = .41, p < .01$), PCSAT and Follower Commitment ($r = .50, p < .01$), PCSAT and Team & Peer Cooperation ($r = .35, p < .01$), and PCSAT and Project Management Knowledge ($r = .27, p < .05$). These results suggest Follower Commitment (FCOM) is the strongest predictor of PCSAT followed by Team & Peer Cooperation (TMPCOOP). When this appraisal is combined with analysis of the regression models provided in relation to Table 4-23 as discussed in section 4.7, after the effects of the control variables were statistically removed - Follower Commitment was the only Managers' Competence variable showing statistical significance in both Models 2 and 3 ($\beta = .3, p \leq .05$ and $\beta = .35, p \leq .05$ respectively). Based on the appraisal of the correlation results in conjunction with the regression models, Table 4-28 shows that Hypothesis H3d is Supported and Hypotheses H1d, H2d, H4d, H5d, H6d, H7d are not supported - therefore Rejected.

Table 4-28: Results of Hypotheses H1d – H7d

ID	Hypothesis	Result
H1d	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between EI AND Perceived Client Satisfaction is reduced by moderator Cultural Problems	Rejected
H2d	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Leadership Performance AND Perceived Client Satisfaction is reduced by moderator Cultural Problems	Rejected
H3d	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Follower Commitment AND Perceived Client Satisfaction is reduced by moderator Cultural Problems	Supported
H4d	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Team & Peer Cooperation AND Perceived Client Satisfaction is reduced by moderator Cultural Problems	Rejected
H5d	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Delivery Capabilities AND Perceived Client Satisfaction is reduced by moderator Cultural Problems	Rejected
H6d	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between PM Knowledge AND Perceived Client Satisfaction is reduced by moderator Cultural Problems	Rejected
H7d	When controlling for Size of implementation and Years of experience, the strength of the positive relationship between Offshore Team Relations AND Perceived Client Satisfaction is reduced by moderator Cultural Problems	Rejected

4.11 Open-ended Question

Open-ended questions are used to further understand the ERP implementation context without the restrictive nature of the predefined Likert scale questions used to gather data on the topic. The open-ended question in the questionnaire is as follows:

In terms of your performance on your last project, please describe...

- The top issues which challenged you the most on your implementation

Open-Ended Question Analysis

Pallant (2011, p.13) noted that coding open-ended questions is slightly complicated, explaining that it would usually be necessary to scan through the responses and look for common themes. From scanning through the responses, it was noted that the common themes were very much akin to the key themes of the study so far. Hence, in analysing the open-ended questions, the qualitative items were organised according to the main constructs identified in the literature review and the outcome of the factor analysis carried out for ERP implementation context. These are used as the coding scheme. This coding scheme was used to categorise the comments of all respondents.

Whilst coding, it was taken into consideration that pre-defined codes would help guide the analysis, as identified by Cassell, C. and Symon, G. (2006, p259). However, they also pointed out the danger of starting with too many pre-defined codes, and how the initial template may blinker analysis, preventing the researcher from considering data outside the assumption. Responses to the open-ended question was coded against the identified factors for the ERP Implementation Context as upon review the factors seemed a good fit and appear to represent the responses received from the quantitative data collected in the area reasonably well.

Cassell et al (2006, p.329) explained this sort of data analysis is developed as an iterative process as it allows for theory development grounded in empirical evidence. However, they warned against premature closure tendencies. They suggested checking how far they fit or fail to fit into the expected categories.

The responses to Question D1 was grouped and categorised according to the themes derived from the factor analysis for ERP Context as shown in Table 4-29. Total impact of each category was rated as the number of participants who made each categorised comment.

Table 4-29: Question D1 Themes (Total = 109)

Factor	Themes	Stats	Proportion	Contribution
Organisational Change Problems	Constraints from org. attitudes	12	11.01%	37.61%
	Corporate stability problems	5	4.59%	
	Constraints from team attitudes	4	3.67%	
	Scope creep problems	19	17.43%	
External Partnership Problems	Offshore resource-related problems	8	7.34%	18.35%
	System & infrastructure availability problems	4	3.67%	
	Constraints from Offshore team culture	3	2.75%	
	Vendor & Supplier problems	5	4.59%	
Resource Availability Problems	Extent Human resource not available	9	8.26%	40.37%
	Extent Funding was not provided	5	4.59%	
	Extent Top management not supportive	7	6.42%	
	Client relationship problems	23	21.10%	
Cultural Problems	Constraints from Country culture	0	0	3.67%
	Constraints from Parent company culture	4	3.67%	

Interestingly, the result of this coding, marries up with the outcome received from the moderated hierarchical regression analysis, showing Resource Availability Problems (RAVPRB) to have the highest contextual influence on perceived client satisfaction with 40.37%, and specifically showing Client relationship problems as the sub variable contributing the highest influence, with 21.10%, which is singularly higher than 2 of the other 3 factors. The second most mentioned contextual issue influencing perceived client satisfaction is Organisational Change problems with 37.61%. The most cited reason, as coded, is Scope creep having 17.43%. Furthermore, of note is the fact that no one mentioned Country culture as an issue, hence having a zero coding and making no contribution to the variable Cultural problems.

Other responses of interest were themed on issues in relation to thoroughly understanding a client's architectural landscape, Statements include:

- Understanding the client's "to be" business architecture and translating it into actions to augment the "as is" landscape.
- Understanding business process and mapping it into movement of data in the system

Of additional note was the point that - Data was also cited in several comments as a key issue in the implementation of ERP. Comments include:

- Poor data quality
- Getting client to keep to the project timelines and deliver items (e.g. data,) for the project that was their responsibility to deliver
- Data analysis was difficult as it was not easy to identify SMEs offshore

The current chapter has elucidated the different analyses carried out on the data sample based on the research methodology being employed in the current work – as previously described in chapter 3. The results presented in the current chapter will be explained and discussed in the next chapter (5), and where relevant links to the literature will be drawn to evidence or support results obtained.

5 Discussion

The current study is a significant endeavour in providing some clarity on relationship between managers' competences and perceived client satisfaction as well as the contextual factors affecting an ERP implementation and how they moderate the relationship between managers' ERP leadership competences and the perceived client satisfaction. This chapter discusses the results of the current research, linking the conclusions from the review of the literature on ERP implementations, their Context, Managers' competences, and Perceived Client satisfaction. The intention is to identify the contribution of the research to existing knowledge in the impacted areas as well as its managerial significance. The limitations of the research are discussed.

The current research brings to bear theories and empirical research from a number of different fields including psychology, leadership, project and program management, business change management, organisational behaviour and associated fields. As previously mentioned, for the purposes of this study, management and leadership are not intended to be discussed as two separate activities – in the typical sense - but together in the specific role of a manager leading the required business change, project management and business transformation activities when leading an ERP implementation. The role under review is that of a manager and their display of relevant leadership and management competences and abilities to bring an ERP implementation to fruition in a way that is perceived as satisfactory by the end-client, whilst considering the contextual challenges to be tackled and overcome along the way. This role has been identified as requiring both good managerial as well as leadership attributes.

Managers' ERP Leadership Competences is represented in the current study as:

- Emotional Intelligence
- Leadership Performance
- Follower Commitment
- Team & Peer Cooperation
- Delivery Capabilities
- Project Management Knowledge
- Offshore Team Relations

The current research sought to contribute knowledge to research in the areas of managing ERP implementation, and in doing so addressing the question:

How does ERP implementation context moderate the relationship between Managers' ERP Leadership Competences and Perceived Client Satisfaction?

As antecedents to the question being addressed in the current work - first, is the definition provided by Baker et al (1988), where they asserted that project success is a matter of perception and that a project may be perceived as an 'overall success' if:

'...the project meets the technical performance specifications and/or mission to be performed, and if there is a high level of satisfaction concerning the project outcome among key people on the project team, and key users or clientele of the project effort' (p. 902)

This assertion invites researchers to test for perceived client satisfaction as a measure of "overall project success".

Second, Aladwani (2002) identified effectiveness and efficiency – called task outcomes – and identified satisfaction - called psychological outcomes - as IS project performance criteria. When considered in relation to a manager within an ERP implementation context, this may be interpreted as the need for an effective manager with the competences to complete the implementation efficiently and to the satisfaction of the key individuals on the client side. It has been noted from studies in ERP critical success literature that most of the focus so far has been on project and implementation success, thereby inadvertently or otherwise, suggesting other dimensions such as client related ones are not as important. Since resistance to change by employees lie "at the root of most ERP implementation challenges" (Salopek, 2001; p. 28), it can be said that client and employee expectations and attitudes play an important role in ERP success (Sower et al., 2001) and therefore should be subsumed into the overall measures of success and addressed during the implementation. For example, understanding different stakeholders' perceptions and ability to influence project outcomes was the theme of Kloppenborg, Stubblebine, and Tesch's (2007) research on sponsor behaviours. In their report they indicated the substantial differences between executive sponsors and project managers' perceptions about expected levels of engagement with executive sponsors. Closing this gap in understanding is paramount to understanding and perceiving correctly the client satisfaction phenomenon.

In sum, the initial themes coming out of the literature review in relation to client satisfaction as an outcome of ERP implementation may be linked to the traditional iron triangle expectations combined with key stakeholder expectations. After a review of very many angles to the project success phenomenon and the different proposals and assertions brought forward by researchers, it would appear that the bottom line comes to whether all owners of the systems, including users, sponsors, and other impacted parties feel satisfied with the implementation; and it may be that therein lies the real success. More specifically, it would include the ability of the manager and their colleagues (team, followers & peers) to work together and carry out all agreed features and functions as agreed to budget, and schedule (scope, cost and time); and to expected satisfaction levels of the client. These themes for perceived client satisfaction were expounded and grouped through factor analysis into four constructs capturing the satisfaction of key stakeholders as well as the effectiveness of the managers at different stages of the implementation lifecycle:

- Senior Management Satisfaction
- User Impact & Satisfaction
- Implementation & Delivery Effectiveness
- Preparation & Planning Effectiveness

The current research is positivist in nature and thus aimed to find conclusions obtained through objective measures, as opposed to 'being inferred subjectively through sensation, reflection or intuition' (Easterby-Smith et al., 2009: p. 57). Hirschheim (1985) asserted that the position adopted by the positivist is that of realism. He explained that realism postulates that the universe is comprised of objectively given, immutable objects and structures, and that they exist as empirical entities on their own, independent from the observer's appreciation of them. The alternative ontology is that of relativism. It holds that realism is a subjective construction of the mind. What is subjectively experienced as an objective reality exists only in the observer's mind.

The Quantitative study was preceded by a qualitative pilot study to garner insight from ERP practitioners – and was further utilised in building the questionnaire for the follow-on quantitative study. The second stage quantitative study measured managers' ERP leadership competences, perceived client satisfaction and ERP implementation context. Amalgamated with this questionnaire is the Emotional Intelligence Questionnaire (EIQ) which is part of a tried and tested instrument, the Leadership Dimensions Questionnaire (LDQ), to measure managers' EI aspects.

5.1 The Pilot

The pilot, conducted between February 2010 and July 2010 sought to garner insights from ERP implementation practitioners using a Qualitative approach. The study was carried out for two main purposes. One to provide a basis for the construction of the questionnaires to be used in the main research; and two, to test the feasibility of the research. The pilot helped to provide a link between theory and practice directly from the field and substantial congruence was found between the two. For the pilot, six semi-structured interviews were carried out with ERP program and project management practitioners from Sweden, Germany, Canada, United States and the United Kingdom. The 6 interviewees were all experienced program and project managers who have led ERP implementations for several years. Each interview lasted about one hour. The sampling method used for the interviews was theoretical sampling, implying interviews were held with individuals who were perceived to hold the best knowledge of the research subject – the subject matter experts. The data collection strategy, aimed for a broad variety geographically as well as a range of implementation types, to achieve the highest level of generalisability for the later results of the main quantitative study.

5.2 Main Study

As already mentioned, the EIQ section of the Leadership Dimensions Questionnaire (LDQ) is used to measure EI of managers as well as competences such as Leadership performance and Follower commitment, whilst a new instrument was developed to measure other competences referred to in the current study as ERP managers' capabilities; as wells as ERP implementation context and perceived client satisfaction. Churchill (1979, 1999) recommended a process for developing new constructs, which is to use existing research results in the subject area. Insights and outcomes of the interview with practitioners and the further qualitative analysis were utilised to generate the constructs of managers' ERP managers' capabilities, ERP implementation context and perceived client satisfaction. The results from data analysis of the pilot provided preliminary construct structures against which the questions were generated.

To enable the testing of each construct, questions that reflect the attributes and characteristics of that construct were formulated to capture the essence of each construct. Where possible and appropriate, existing validated questions were introduced to measure the construct. A total of 83 useable responses were received.

5.3 Key Findings

The current research sought to contribute to knowledge in the area of the leadership of ERP implementations to achieve perceived client satisfaction. It purports that in such an implementation, managers' competences impact perceived client satisfaction; that context is very key, and hence, its moderating impact must be considered and addressed during the implementation processes to achieve the eventual perceived client satisfaction. The key findings of the current study may be summarised in relation to the key areas of literature addressed in the thesis. The sections following provide these summaries.

5.3.1 Perceived Client Satisfaction Constructs

The factors identified within the current study to represent the characteristics of Perceived Client Satisfaction are:

- User Impact & Satisfaction
- Senior Management Satisfaction
- Implementation & Delivery effectiveness
- Preparation & Planning effectiveness

Table 5-1 summarizes the perceived client satisfaction factors through their inclusive questions, individual explanatory power and validation with other researchers' research findings.

Table 5-1: Support for perceived client satisfaction (PCSAT) constructs

Factor	Items Included	Results Validation	Variance Explained	Accumulated Variance explained
User Impact & Satisfaction	Impact on users	DeLone and McLean (1992) stated that user satisfaction represented a high degree of face validity, indicating how well the system was accepted by its end users.	34.411	34.411
	Users satisfied	'...high level of satisfaction concerning the project outcome among key people on the project team, and key users or clientele of the project effort' Baker et al (1988, p. 902) Willcock and Mark (1989) identified the importance of the system manager establishing political and cultural support through identifying and responding to stakeholders' objectives, especially those of users.		
	Impact on customer	Client and employee expectations and attitudes play an important role in ERP success (Sower et al., 2001)		
	Sponsors satisfied	Responding to stakeholders' objectives - Willcock and Mark (1989)		
Senior Management Satisfaction	Senior management satisfied	senior management levels of commitment (Murray, 2001)	10.625	45.036
	Relationship with senior management	Expected levels of engagement with executive sponsors (Kloppenborg et al, 2007) Management support crucially helps form users' perceptions of the usefulness of the new system (Rajan & Baral, 2015).		
Implementation & Delivery effectiveness	Realisation effectiveness	... during the realisation phase, adequate ERP configuration factor is so important as well as the involvement of users. (Esteves and Pastor, 2001)	17.497	54.179
	Final preparation effectiveness	Studies (Ross and Vitale, 2001; Dantes and Hasibuan, 2011; Esteves and Pastor, 2001) all describe the phasing concept in ERP Implementation		
Preparation & Planning effectiveness	Project preparation effectiveness	Studies (Ross and Vitale, 2001; Dantes and Hasibuan, 2011; Esteves and Pastor, 2001) all describe the phasing concept in ERP Implementation	9.903	72.435
	Blueprint effectiveness	Scoping of implementation Esteves and Pastor (2001)		

The first factor *User Impact & Satisfaction* accounted for the most variance in the PCSAT construct. It represents the impact of the implementation on the users and sponsors, and their level of satisfaction with the implementation. This appears to be key to achieving a perceived client satisfaction for instance from the end-users who would be eventual owners and daily users of the system, hence their feedback would be taken as coming from a somewhat golden source – an important source of implementation success or failure information that may pervade an organisation and its general feeling about the implementation outcome. Kloppenborg, Stubblebine and Tesch (2007) researched on sponsor behaviours. Understanding different stakeholders' perceptions and ability to influence project outcomes was the theme. Their findings indicated substantial differences between Executive Sponsors and Project Managers' perceptions about expected levels of engagement from the Executive Sponsors. Closing this gap is an exercise in stakeholder management. Shaul and Tauber (2013), observed that there are several moving parts when implementing an ERP system. Those parts can range from having appropriate project team members in place, selecting the appropriate system, establishing non-redundant processes, up to training end-users.

Most of the studies in the ERP critical success literature focus on either project success or correspondence success (Robey et al., 2002), and neglect the other dimensions that focus on the end-users. Likewise, many authors have identified differences in understanding regarding success criteria and success factors (Fortune and White, 2006; Kog and Loh, 2012; Chou et al., 2013; Mir and Pinnington, 2014), the first relate to the particular items of technology that are skilfully built out and delivered to agreed scope in a quantifiable way while the latter may be said to cover the influencing and less tangible items of the implementation which also need to be successful, and should be addressed alongside the former - during an implementation. A review of the literature further reveals that there is, in fact, a high level of agreement with the definition provided by Baker, Murphy and Fisher (1988, p. 902). They asserted that project success is a matter of perception and that a project may be perceived as an 'overall success' if:

'...the project meets the technical performance specifications and/or mission to be performed, and if there is a high level of satisfaction concerning the project outcome among key people on the project team, and key users or clientele of the project effort'

(p. 902)

The second factor, *Senior Management Satisfaction* addresses the support for, and acceptance of the implementation and its outcome by senior management. In support of this factor, at the top of Murray (2001)'s nine factors for IT project success are:

- (1) appropriate senior management levels of commitment to the project, and
- (2) adequate project funding.

Adding to this, the relevance of meeting expectations from senior management and sponsors have been identified by several authors as a success measure. Kloppenborg, Stubblebine and Tesch (2007) notable posited that there are substantial differences between Executive Sponsors and Project Managers' perceptions about expected levels of engagement with the Executive Sponsors. Closing the engagement gaps with all relevant client-side groups within the implementation organisation is paramount to understanding and perceiving correctly the client satisfaction phenomenon.

The third factor, *Implementation & Delivery effectiveness* address the perceived effectiveness of the manager during the delivery and final phases of the ERP implementation. Esteves and Pastor (2001) analysed the relevance of critical success factors along SAP implementation phases. By applying a process quality management method and the grounded theory method they evaluated the relevance of critical success factors along the five phases of ASAP, specifically of those ones related with organizational perspective. They posited that there is practical evidence that CSFs do not have the same importance along the various phases of an SAP implementation project and attempted to develop a theoretical framework that describes the distribution and relevance of CSFs along the ASAP phases. The key phases of the ASAP methodology, also known as the ASAP roadmap, are: project preparation, business blueprint, realization, final preparation, go live & support. They further described the relevant CSFs for each stage as follows:

- In phase 1 (Project Preparation), the most relevant CSFs are sustained management support, project champion role and formalised project plan/schedule. The outcome of this phase is the project charter document.
- In phase 2 (Business Blueprint), the most relevant CSFs are project champion role, effective organisational change management and user involvement. The outcome of this phase is the creation of the implementation Business Blueprint, which is a document describing the scope of work and the business' future state after the implementation is complete.

- In phase 3 (Realization), the most relevant CSFs are adequate software configuration, project champion role, and user involvement. In this phase the configuration of SAP system begins, that is why the adequate ERP configuration factor is so important as well as the involvement of users. They help in the system parameterization.
- In phase 4 (Final Preparation), the most relevant CSF is the project champion role.
- In phase 5 (Go Live & Support), the most relevant CSFs are project champion role, sustained management support and strong communication inwards and outwards.

The outcome of the factor analysis identifies the phases 3 (Realisation) and 4 (Final preparation) as crucial to producing perceived client satisfaction. An explanation may be because the actual build and delivery are carried out during phase 3, and the business go-live readiness – which includes the involvement of the actual business users to be trained and to contribute in testing the new system – is carried out during the Final preparation phase. It may also be said that the change management aspects really come to bear during these phases in order to get the best feeling of satisfaction about the new system from such key business representatives.

The fourth factor, *Preparation & Planning effectiveness* addresses the performance of the manager during the initial phases of the ERP implementation as already discussed in the previous section. The literature identifies an effective ERP manager as one who has the knowledge and skills to manage the implementation lifecycle phases, such as the five stages of ERP implementation (Ross and Vitale, 2001; Dantes and Hasibuan, 2011). Moreover, project leaders must strive to mitigate failure at all lifecycle phases during ERP implementation, also meaning that the success or failure would not simply happen at the end of a project but is an incremental / cumulative phase by phase aggregation of performances at different phases. It may hence be surmised that the influence of a manager's delivery capability along the different phases on the success of ERP implementation can in turn impact client satisfaction – though does has not been identified as significant across the full implementation in the current study.

5.3.2 ERP Implementation Context Constructs

The factors identified within the current study to represent the sub-dimensions of ERP implementation context are:

- Organisational Change Problems
- External Partnership Problems
- Resource Availability Problems
- Cultural Problems

Table 5-2 summarizes the ERP implementation context factors through their inclusive questions, individual explanatory power and support for results from other researchers' research findings.

Table 5-2: Support for ERP implementation context (ERPIC) constructs

Factors	Item Included	Results Validation	Variance Explained	Accumulated Variance Explained
Organisational Change Problems	Constraints from Org culture	ERP implementation failures are often the result of lack of management support, improper training and poor communications, most of which are people and culture related problems (Davis & Heineke, 2005). System managers have to address the structural features of the organization, involving power distribution and culture (Markus and Pfeffer, 1983).	26.826	26.826
	Corporate stability problems	...if there is a high level of satisfaction concerning the project outcome among: key people in the parent organisation Baker, et al (1988)		
	Constraints from team attitudes	client and employee expectations and attitudes play an important role in ERP success (Sower et al., 2001) Xu, Xiaobo and He, Xin James (2008) examined factors of achieving IS project success from the team attitude and behavior perspective.		
	Scope creep problems	...realization comes that the project is a victim of "scope creep". Gargeya (2005)		

External Partnership Problems	Offshore resource-related problems	Larson and Gobeli (1989), looked at the impact of contextual factors such as resources	16.247	43.073
	System & infrastructure availability problems	Maylor et al. (2008) identified contextual factors such as: Resource complexity		
	Constraints from Offshore team culture	Cultural impact to organisation (Ragowsky & Somers, 2002).		
	Vendor & Supplier problems	Communication vendors and suppliers (Bingi, Sharma, & Godla, 1999).		
Resource Availability Problems	Extent Human resource not available	Ives (2005) and Shao (2010). Project manager is not responsible only for time, cost and quality management, but also integration, scope, human resource PMI (2016)	11.107	54.179
	Extent Funding was not provided	Murray, J.P. (2001) describes the factors for IT project success that he thinks can make or break IT projects: (1) appropriate senior management levels of commitment to the project and (2) adequate project funding		
	Extent Top management not supportive	Lack of management support Davis & Heineke (2005); management support crucially helps form users' perceptions of the usefulness of the new system (Rajan & Baral, 2015).		
	Client relationship problems	Poor communication, Somers and Nelson (2004).		
Cultural Problems	Constraints from Country culture	Culture related problems Davis & Heineke (2005)	8.073	62.252
	Constraints from Parent company culture	Cultural impact to organisation (Ragowsky & Somers, 2002).		

The first factor *Organizational Change Problems* addresses constraints and challenges coming from different aspects of the governance structure which includes the organisational and team setup in relation to the implementation as well as the stability of the business. Organisational change is an important characteristic of an organisation. Hence, organisations must develop their methods of adapting to change to provide stability and mitigate the negative impacts of the forces of change. System managers have to address the structural features of the organization, involving power distribution and culture, and employ process strategies such as participative design (Markus and Pfeffer, 1983).

According to Umble et al. (2003), executive support, lack of proper communication, poor planning, deficient training, and inability to promote teamwork are known to be some of the most important issues that can negatively impact employees during and after an ERP implementation. Of all the issues, communication has been shown to be the most salient factor in jeopardizing an ERP deployment. According to Somers and Nelson (2004), top-down communication with enterprise management and horizontal communication among peers should be considered top priority during the implementation process in order to properly manage everybody's roles and responsibilities in the project. Moreover, Davis & Heineke (2005), identified ERP implementation failure to be often the result of lack of management support, improper training and poor communications, most of which are people and culture related problems. research suggest most companies fail to evaluate and anticipate the cultural impact and the incredible changes that an ERP deployment will bring to their business processes and the entire organization as such (Ragowsky & Somers, 2002).

The second factor *External Partnership Problems* addresses constraints and challenges coming from different external business partners who are nevertheless crucial to a successful delivery of the implementation. These mainly pertain to issues with offshore resources as well as vendors. These are effectively offsite contributors who appear to be more difficult to manage than the internal contributors. Several reasons may be provided; however, researchers have recommended a good communication channel with the software vendor and the consulting company providing the implementation support of the ERP project (Bingi, Sharma, & Godla, 1999).

The third factor *Resource Availability Problems* addresses constraints and challenges coming from a lack of required financial support and human resources which may be attributed to client relationship problems. Here resource is defined from a broad sense. This issue was also

identified by Ives (2005) and Shao (2010). Resource can cover a much wider area in practice. Waterhouse (2010), explained that the key to properly managing ERP projects is to understand the dynamics of its implementation and make sure the implementation strategy reflects business transformation as opposed to only IT considerations.

The fourth and last factor *Cultural Problems* addresses constraints and challenges coming from both the internal as well as the external culture of the organisation – the country culture. Some researchers have suggested that organisations fail during an ERP project due to the lack of understanding that ERP implementations are more about the people and culture in the enterprise rather than technological changes (Ragowsky & Somers, 2002). Similarly, Davis and Heineke (2005) asserted that an enterprise resource system implementation typically fails for several reasons including, (a) the inability to understand the people and cultural issues, as manifested by top management's lack of support and commitment.

5.3.3 Management Capability Construct

The factors identified within the current study to represent the characteristics of Management Capability Construct are:

- Team & Peer Cooperation
- Delivery Capabilities
- Project Management Knowledge
- Offshore Team Relations

Table 5-3 summarizes the Management Capability Construct factors through their inclusive questions, individual explanatory power and validation with other researchers' research findings.

Table 5-3: Support for Management Capabilities constructs

Factors	Item Included	Results Validation	Variance Explained	Cumulative Variance Explained
Team & Peer Cooperation	Relationship with peers	Managers influence peers to provide support and assistance (Mintzberg, 1983; Pfeffer, 1981, 1992) Horizontal communication among peers (Somers and Nelson, 2004)	31.579	31.579
	Peer & team respect	The effectiveness of most managers depends on influence over superiors and peers as well as influence over subordinates (Kotter 1985).		
	Peer & team support	Plan. Manage and Control communications to peers (PMI, 2017)		
	Team trust	Fisher (2011) carried out a combination of literature review, interviews and focus groups, and identified “building trust” as one of the most important people skills for project managers.		
Delivery Capabilities	Effectiveness using relevant tools	What a project manager knows about the application of processes, tools and techniques in project activities. (PMI, 2016)	14.691	46.270
	Effectiveness resourcing quality individuals	Planning, hiring and allocating key resources (Kotter, 1990)		
	Quality management	deliver the finished system to time, cost and quality (Davenport, 1998; Avnet, 1999; Buckhout et al, 1999). Information quality (Gallagher, 1974; King and Epstein, 1983; Jenkins and Ricketts, 1985)		
	Working atmosphere was satisfactory	Thamhain and Wilemon (1977) maintain that the environmental context of the project has to be examined before any conclusions can be drawn about project management effectiveness		
Project Management Knowledge	Risk management	a critical assessment of the risks inherent in the project, and potential harm associated with those risks Murray (2001)	11.310	57.580
	Time management	deliver the finished system to time, cost and quality (Davenport, 1998; Avnet, 1999; Buckhout et al, 1999).		

	Cost management	deliver the finished system to time, cost and quality (Davenport, 1998; Avnet, 1999; Buckhout et al, 1999).		
Offshore Team Relations	Offshore management	Joseph, Ang, Chang & Slaughter (2010) state that companies exploring human resources from offshore, ... must acquire broader managerial skills (soft skills) in addition to technical skills.	8.859	66.439
	Communication with offshore team	Communication to vendors and suppliers (Bingi, Sharma, & Godla, 1999).		

The first factor *Team & Peer Cooperation* addresses managers relationship with individuals who are team members as well as those who may be perceived as their peers in relation to the implementation. It implies collaboration within the team and with key contributors outside the team either as colleagues or as subordinates.

The second factor *Delivery Capabilities* addresses the manager's competencies in using relevant project tools and tracking project deliverables as well as recruiting and assigning adequate resources to tasks. Shenhar et al. (2007), which was discussed in section 2.5.1, developed a comprehensive framework for project success assessment (Figure 2-2). In their project success framework, they discussed certain dimensions which have a direct bearing to Delivery Capabilities. The dimensions such as project efficiency, impact on team members and impact on customers all support the current findings that Delivery Capability is a dimension to measure perceived client satisfaction.

The third factor *Project Management Knowledge* addresses the level of relevant project management knowledge and related competencies of the manager. According to PMI (2016) Knowledge—refers to what the project manager knows about project management. They stated that, however, understanding and applying the knowledge, tools, and techniques that are recognized as good practice are not sufficient for effective project management. In addition to any area-specific skills and general management proficiencies required for the project, effective project management requires that the project manager possess competencies: Knowledge, Performance and Personal. Wu & Wang (2007) developed an instrument for ERP key-user satisfaction measurement. Their instrument identified three factors for the measurement of ERP key-user satisfaction, namely: ERP product, knowledge and involvement, and contractor service.

The last factor *Offshore Team Relations* addresses the manager's ability to manage offshore resources. Offshore resourcing is the trend where companies look for cheaper offshore resource options to reduce their baseline costs (Chua and Pan, 2008). Most organisations, particularly ones that have heavy information system development requirements such as can be required on an ERP implementation tend to outsource or subcontract a portion of the development activities to onshore team mostly via an offshore independent service provider. Joseph, Ang, Chang & Slaughter (2010) state that companies exploring human resources from offshore, outsource, onsite, or in-house must acquire excellent skillsets in addition to technical skills. They further stated that broader managerial and interpersonal skills are labelled as soft skills or people management skills – further indicating that technical skills alone are insufficient for a successful IT environment based on the dynamics, distribution and complexity of the workplace.

5.4 Hypothesis Testing

As previously shown in section 4.7.1, there are seven main hypotheses and twenty-eight sub-hypotheses in the current study. This section discusses the results of the main hypotheses testing first and then the results of the sub-hypotheses testing.

5.4.1 Tests of Main Hypotheses

The main effects refer to the direct relationships between each independent and the dependent variable in the current study i.e. H1 to H7. The current research found EI, Leadership Performance, Follower commitment, Team and Peer Cooperation and Project Management Knowledge to be significant predictors of Perceived Client Satisfaction (PCSAT), with Follower Commitment the strongest predictor of PCSAT. No significant effects were noted for Delivery Capabilities and Offshore Team Relations. Moreover, the correlation of IVs to DV in Table 4-10 shows there were highly significant inter-correlations between certain independent variables such as ones between EI and Leadership Performance ($r = .43, p < .01$), between EI and Follower Commitment ($r = .42, p < .01$) and between Follower Commitment and Leadership Performance ($r = .70, p < .01$). These results appear to support the assertion by Dulewicz and Higgs (2003c) that there is a new stream of thinking in the leadership literature suggesting leadership may require a less rational approach to leading, and adopt a more emotional framework from which to lead. They stated that, "It is agreed that the key challenges

faced by today's organizations require an approach to leadership which is very different to [sic] the previous prescriptions" (Dulewicz & Higgs, 2003c, p. 194).

Table 5-4: Results of Main Hypotheses H1 to H7

ID	Hypothesis	Result
H1	When controlling for Size of implementation and Years of experience, there is a positive relationship between Managers EI AND Perceived Client Satisfaction	Supported
H2	When controlling for Size of implementation and Years of experience, there is a positive relationship between Managers Leadership Performance AND Perceived Client Satisfaction	Supported
H3	When controlling for Size of implementation and Years of experience, there is a positive relationship between Managers Follower Commitment AND Perceived Client Satisfaction.	Supported
H4	When controlling for Size of implementation and Years of experience, there is a positive relationship between Managers Team & Peer Cooperation AND Perceived Client Satisfaction.	Supported
H5	When controlling for Size of implementation and Years of experience, there is a positive relationship between Managers Delivery Capabilities AND Perceived Client Satisfaction.	Rejected
H6	When controlling for Size of implementation and Years of experience, there is a positive relationship between Managers PM Knowledge AND Perceived Client Satisfaction.	Supported
H7	When controlling for Size of implementation and Years of experience, there is a positive relationship between Managers Offshore Team Relations AND Perceived Client Satisfaction.	Rejected

5.4.1.1 Main Effect Testing

The main effects of the IVs and the DV are further described in Table 5-5 with an indication of the strength of each effect.

Table 5-5: The main effects of the IVs on the DV (PCSAT)

IV	Hypothesis	Effect on PCSAT
Emotional Intelligence	H1	+
Leadership Performance	H2	+
Follower Commitment	H3	++
Team & Peer Cooperation	H4	+
Delivery Capabilities	H5	0
PM Knowledge	H6	+
Offshore Team Relations	H7	0

+ Positive relationship; 0 No relationship

Emotional Intelligence (+)

Table 5-5 shows a positive main effect for EI on Perceived Client Satisfaction. The positive main effect provides further support to several studies, as there is considerable research support for the positive relationship between managers' EI and project success outcomes in several fields, such as the Royal Navy (Young and Dulewicz, 2005) and in the Financial Services sector (Geoghegan and Dulewicz, 2008), and there are grounds for suggesting that it may be linked to client satisfaction. There is also evidence of the relationship between EI and program manager performance in a program context (Shao, 2010), although this specific area still has a limited study.

The Leadership Dimensions Questionnaire (LDQ), Dulewicz and Higgs (2003a) has been widely applied in a variety of organizational contexts, Young and Dulewicz (2005) found that in British Royal Navy, officers' EQ significantly correlated with the overall performance of their work units. It was shown that within the EQ group, sensitivity, influencing, emotional resilience, conscientiousness, and motivation are the most influential leadership competencies. Geoghegan and Dulewicz (2008) tested the relationship between leadership competencies and project success based on UK financial services company. They found in the EQ group, sensitivity, influencing, self-awareness, and motivation are identified as the most important leadership competencies.

The positive main effects of EI on perceived client satisfaction imply the importance for managers to develop their EI abilities consciously, either through participating intentionally in training programs or self-developing.

Leadership Performance (+)

Table 5-5 shows a positive main effect for Leadership Performance on Perceived Client Satisfaction. The positive main effect highlights leadership as an important factor in the ERP implementation process and specifically the highly complex change process that accompanies such a large, lengthy and wide-reaching business transformation in an organisation. As already discussed in the literature review, ERP has many phases in its implementation lifecycle, and it may be said that failure of system implementation can be traced back to many reasons, for example, poor execution of the implementation strategy, lack of leadership support, or poor change management (Dantes et al., 2011; Hasibuan & Dantes, 2012). Although both effective managerial and leadership skills are thought to be requisite for a successful ERP implementation (Mitra, 2011), there is little empirical evidence to support this claim, and little research on the specific leadership skills that are associated with effective ERP deployment.

On leadership, Dodd (2004) made seven observations: (a) a leader is an agent for change; (b) leadership is situational; (c) leaders need followers; (d) leadership derives from character and competence; (e) legitimate power is your greatest asset; (f) leaders have to put it on the line; and (g) keep things in perspective and make it fun. Whereas scholars have noted the importance a senior leader plays in a successful IT implementation (Madon, 2005; Wixom & Watson, 2001; Irani et al., 2005), other researchers, Loonam and McDonagh (2005) indicated the results of multiple empirical research studies do not provide enough evidence about the

leadership behaviours associated with a successful implementation. Taking into consideration the high failure levels in the implementation of ERP projects, the current work examines and provides an assessment and in so doing a further understanding on the impact of leadership on ERP implementation.

The significance of leadership has also been highlighted by Waterhouse (2010) who suggested that successful ERP implementations are the result of a well-planned strategy, a great team, a highly efficient technical manager and an effective leader who is able to articulate and communicate the overall strategy throughout the entire organization; thereby highlighting the importance of having a manager skilled in both the technical and the non-technical aspects of an implementation. These abilities when applied well can bring a sense of predictability during the phases of the implementation and help overcome the contextual challenges to be anticipated along the way. Mitra (2011) posited that, management is about monitoring, controlling and identifying issues proactively even before they occur, and then finding the way to mitigate such issues or providing an answer to resolve them and move the project forward as planned.

Along the same vein, Vaman (2007) suggested successful ERP implementations should have a very clear leadership structure and a strong leader who constantly seeks support from top executives. The leader should be able to open up the proper channels of communications and seek support from top executives of the organization, a great communicator with sufficient knowledge and authority to gather recommendations from the business and the IT community that the leader can use to improve the ERP implementation and keep the people focused on the value creation aspect of the project. Effective leaders in an ERP implementation should be able to navigate and understand the project details and focus on the big picture, they must be aligned with the organization's values, understand the value of under promise and over deliver, they must sacrifice the self-satisfaction and have the ability to understand the art of team leadership, respect, ability to create the conditions for the team members to realize their highest and true aspirations, and lastly, to understand that their main role is to deliver a successful project through the efforts of other people (Vaman, 2007).

Follower Commitment (++)

Table 5-5 shows a highly significant positive main effect for Follower Commitment on Perceived Client Satisfaction. The positive main effect highlights followership as an important factor in the delivery of an ERP implementation. As previously mentioned, leadership is a complex phenomenon involving a leader, followers, and the situation (Hollander, 1978). Studies indicate that the study of leadership remains leader-centric and the followers are just another variable to account for in leadership process. Shamir et al. (2007) have pointed out that while some studies examine followers in the leadership process, most studies only focus on how followers contribute to leader success. Followership is the study of how followers view and enact following behaviors in relation to leaders (Riggio et al., 2008; Uhl-Bien et al., 2014). Kelley (1992), Boccialetti (1995), Chaleff (2009), and Kellerman (2008) have all attempted to put a stronger emphasis on the follower beyond the simple idea or expected role of blindly following as the subordinate.

An advantage of follower commitment was identified by Moore (1965) who posited that committed employees require less supervision, perform better than non-committed employees, and behave more predictably in a crisis and in situations requiring individual decision making. This claim was supported by the findings of Mowday, Porter and Dubin (1974), who also indicated that highly committed employees perform better than less committed employees. When applied to an ERP implementation, the so-called followers in the current context would usually be contract workers who would have been assigned to the implementation for a fixed time period, it could be said that the type of commitment discussed above would be directed at the implementation and its goals rather than the implementing organisation's goals. Hence, it would be the task of the leader in such a context to ensure communication of both the organisational goals and ERP implementation goals, albeit it is arguable the individuals' main focus would still be ERP implementation goals – and that would be understandable.

The follower commitment theory was examined by Burrs (2005) who asserted that leaders with high levels of emotional competence are able to increase follower commitment - by examining the relationship between the mid-level leader's emotional competence and follower commitment. Correlation testing of the data indicated a strong relationship between the mid-level leader's emotional competence and follower commitment. Results of the research suggest the need for a new paradigm shift.

The failure of many leaders to create relationships that allow followers to express themselves limits the followers' ability to perform (Schein, 1992). This failure limits the ability of leaders to implement change programs, as many followers have lost their motivation, enthusiasm, and energy for work (Maslach & Leiter). Maslach and Leiter (1997) suggested, in a continuously adapting work environment, followers want to expend their energies by participating more fully in the organization's success. In essence, leaders must be able to release the motivational energy that ignites the imagination of their followers to get passionate about and committed to work (Goleman, 1995).

Gregersen, Morrison, and Black (1998) suggested a genuine emotional connection would lead to willingness on the part of followers to do their best work and make whatever sacrifices were required to support the leader's vision. This includes, "*giving the leader the benefit of the doubt on difficult matters*" (p. 24), thus releasing motivational energy. When the leader emotionally connects with followers, they are more adept in securing support during negative events. "*In essence . . . leaders need to have the ability to inspire and arouse their followers emotionally. Followers, thus inspired, become committed to the leader's vision and, ultimately, to the organization*" (Humphreys et al., 2003, p. 193).

The results and the follow-on discussion above provide support for the proposal that managers' emotional intelligence can affect the levels of commitment of followers.

Team & Peer Cooperation (+)

Table 5-5 shows a positive main effect for Team & Peer Cooperation on Perceived Client Satisfaction. The positive main effect highlights a manager's relationship with their team as well as peers as an important factor in the delivery of an ERP implementation.

According to Somers and Nelson (2004), top-down communication with enterprise management and horizontal communication among peers should be considered top priority during the implementation process in order to properly manage everybody's roles and responsibilities in the project. Extensive work has been carried out by many researchers around the topic of influence. One of such is Yukl (2009) who posited that effective managers influence subordinates to perform the work effectively, they influence peers to provide support and assistance, and they influence superiors to provide resources and approval of necessary changes. A successful leader, would inspire and motivate the implementation contributors both

internally and externally to bring their best to the implementation and empower them to make tough decisions for the success of the project. Umble, Haft, and Umble (2003) indicated successful implementations need strong leadership, heavy participation and support of top executives in the organization.

Yukl (2009) described effectiveness of Coalition tactics when attempting to gain support from senior management. He stated; coalitions are an indirect type of influence tactic wherein the agent gets assistance from other people to influence the target person. He gave examples of coalition partners as including peers, subordinates, superiors, or outsiders (e.g. clients and suppliers). He also cited - trading of favours needed to accomplish task objectives to be a common form of influence among peers in organizations (Cohen and Bradford, 1989; Kaplan, 1984; Kotter, 1985).

Delivery Capabilities (0)

It was initially posited that Delivery Capabilities would positively relate to perceived client satisfaction. As shown in Table 5-5, the effect of Delivery Capability on Perceived Client Satisfaction was not significant. Whilst there is no evidence in the current work that *Delivery Capabilities* may affect Perceived Client Satisfaction, it must be noted that those capabilities are generally assumed to be part and parcel of a typical manager's skillset, usually assessed prior to employment to lead and deliver an ERP implementation. This variable was measured in terms of managers' effectiveness in using relevant software and hardware tools, their effectiveness resourcing quality individuals, quality management and providing a satisfactory working atmosphere. A few reasons for the lack of a significant impact on perceived client satisfaction may include, that there has been a shift from managers' capabilities to deliver an implementation to team or follower capabilities to deliver. Furthermore, it may be that clients do not have a direct interaction with the actual delivery process and would not ordinarily experience those activities listed as measuring delivery capability. Hence, the impacts on them are limited to communications at agreed frequency at certain key milestones along the delivery journey. This is supported by Atkinson (1999) who proposed two stages of 'delivery' and post-delivery' measurement of project success and divided the later one into 'the system' component that includes stakeholders' benefits, and 'benefits' that covers impact on client and business. Thus, it may be that the expected impact on client satisfaction would be experienced rather at a post-delivery stage. Furthermore, as previously discussed, the influence of a manager's delivery capability along the time continuum at different phases of ERP

implementation can in turn impact client satisfaction within those phases albeit not necessarily of equal impact across the whole implementation.

PM Knowledge (+)

It was initially posited that PM Knowledge would positively relate to perceived client satisfaction. Table 5-5 shows a positive main effect for PM Knowledge on Perceived Client Satisfaction. The positive main effect highlights PM knowledge as an important factor in the ERP implementation process. This sub-dimension is measured by the managers' management of Risks during the implementation; management of time – including planning and delivering the planned deliverables to agreed milestones; and the management of cost. These variables appear to directly impact a client. The addressing of risks for instance would ensure the implementation is not derailed or heavily impacted by any events along the way. These can be at times unavoidable risks, uncertainties and turbulence deriving from inside or outside of the organisations (e.g. Loch et al., 2006; Sanderson, 2012). It must be said in no uncertain terms, that such risks can heavily impact not just the implementation but the client business directly. Hence, all risks and issues must be assessed, and the appropriate course of action weighed up against the impact on the set critical objective. As already discussed in the literature review in section 2.1.1, Murray (2001) describes the nine factors for IT project success that he thinks can make or break IT projects and suggested the manager must carry out a critical assessment of the risks inherent in the project, and potential harm associated with those risks, and the ability of the project team to manage those risks. He further suggested to develop appropriate contingency plans that can be employed should the project run into the identified problems

Offshore Team Relations (0)

Offshore resourcing is the trend where companies look for cheaper offshore resource options to reduce their baseline costs (Chua and Pan, 2008). It was initially posited that Offshore Team Relations would positively relate to perceived client satisfaction. Table 5-5 shows no effect for Offshore Team Relations on Perceived Client Satisfaction. Considering the importance of the contributions of offshore team members on ERP implementations, the lack of influence of offshore team relations on client satisfaction is surprising. One possible explanation may be that, as the manager controls the assignment of project resources to roles and assignment of activities that best meet implementation objectives and milestones to individuals, that actual dynamic and ongoing daily interaction, whether it be to onshore or offshore resources, may not be directly visible to the client. What would be optically visible to them would be rather whether planned milestones are being met or not, as offshore members are out-of-site, and

the relationship with the implementation manager would also be happening out of the visibility of the apparent perceiving clients, and hence the impact of that activity may be removed from influencing clients' satisfaction with the implementation. Other specific offshore relationship impact on clients may be if a problem arises between the implementation manager and offshore colleagues and that gets escalated to senior management; in which case, the client may need to step in and in so doing get involved in understanding any relationship issues or risks. However, with that being said, ideally the manager should be making optimum use of available human resources, whether onshore or offshore, to meet the demands of the implementation along the journey. They, like a football coach, must know which individuals are the most appropriate to assign to tasks and work with them to increase the probability of their success and subsequently project success. Based on what has been an increasingly heavy use of very diverse teams, especially in IT projects and specifically in ERP implementations, understanding the impact of cultural influences is critical. Hence, culture, governance and communication become critical factors in defining project success, and multicultural competence becomes critical for the project manager. Moreover, it may be said that even though there was no direct influence by Offshore Team relation on perceived client satisfaction, there may still be an indirect impact via a successful implementation outcome.

Kirkpatrick (2009) explained that leaders who communicate a vision in multicultural settings, be they in a multinational firm or an organization with a diverse workforce, need to consider that the values contained in the vision statement may not be as appealing or easy to discern to people from a different cultural background. They suggested that in such instances, the leader must take steps to communicate an inclusive vision and allow followers time to clarify their personal values and realign them with the vision. Joseph, Ang, Chang & Slaughter (2010) states that companies exploring human resources from offshore, outsource, onsite, or in-house must acquire excellent skillsets in addition to technical skills.

5.4.2 Moderating Effect Testing

The moderating effects refer to the effect outcomes of the moderation of relationships between the independent and the dependent variables by the identified moderating variables. In the current study the hypotheses are listed as H1a to H1d, H2a to H2d, ... H7a to H7d and are further elucidated in the current section. Figure 5-1 highlights the significant relationships between the Independent Variables, Dependent Variables and the Moderating Variables.

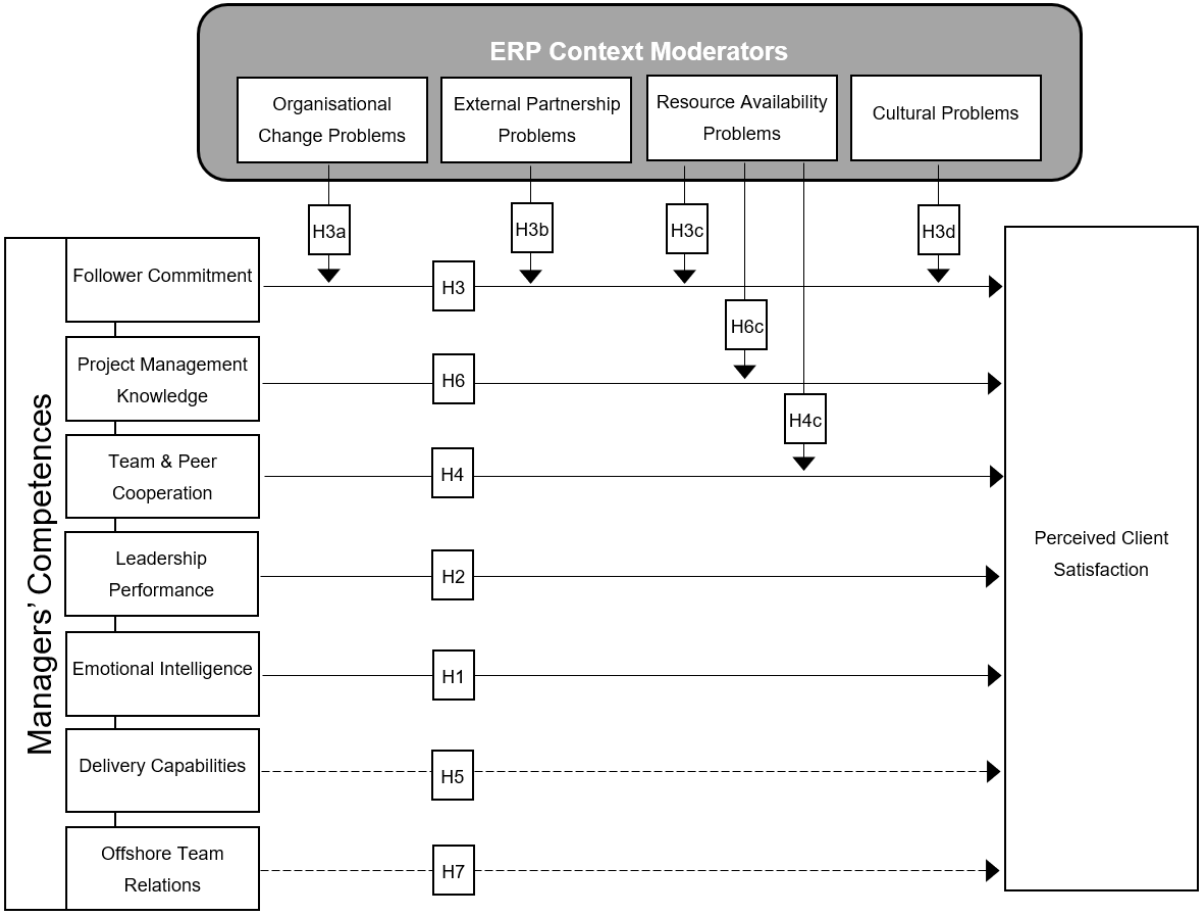


Figure 5-1: Moderating effect of ERP context on the relation between the IVs and the DV

The results of the moderating effect testing are provided and discussed in the sub-sections that follow.

Effect of ERP Context Moderators on Relationship between Emotional Intelligence and PCSAT

Based on the current study, Table 5-6 shows there was no evidence that the strength of the relationship between Emotional Intelligence and Perceived Client Satisfaction is reduced by any of the moderators - Organisational Change Problems (H1a), External Partnership Problems (H1b), Resource Availability Problems (H1c), nor Cultural Problems (H1d). As previously shown, there is a positive main effect between EI and Perceived Client Satisfaction. The possible reasons for the indication that the relationship between managers' EI and PCSAT is not impacted by ERP contextual factors are discussed further in the current section. To this end it may be necessary to provide a quick recollection of EI. As previously discussed in section 2.4.1, Boyatzis, Goleman and Rhee (2000) posited that EI is observed "when a person demonstrates the competencies that constitute self-awareness, self-management, social awareness and social skills at appropriate times and ways in sufficient frequency to be affective in the situation".

One argument for the apparent lack of influence of the ERP Context moderators may be that, due to the nature of EI as an innate / cognitive competence, its effect itself may not be exposed to direct or indirect affect or interference by external activity such as the identified Contextual problems. In other words, a person's level of EI is not expected to significantly increase or decrease based on contextual challenges – within the time frame of implementation. Thus, the impact of that EI on perceived client satisfaction may not necessarily be affected by ERP context. In fact, it may be said that the experience gained from such contextual problems and dynamics may serve as experience and lessons learned which may be somewhat subsumed into, and inform as well as further enrich the manager's EI competences as time goes on. Hence, it may be said that while EI and its effect on perceived client satisfaction may not be exposed to impact by contextual factors, EI may be further developed and hence increase from the experience gained during an implementation process

Another argument and a different angle to these results, may be that the contextual factors should in fact affect and constrain the ability of managers to demonstrate their level of EI which, as previously discussed in section 2.4.1 include:

- priming good feelings in those they lead (Goleman et al, 2009)
- setting the emotional standard for a team (Goleman et al, 2009)
- creating positive motivation and resonance (Goleman, Boyatzis et al. 2004) with their own goals

- maximizing productivity by using positive emotional contagion to motivate productivity
- great leaders are able to move people, ignite their passion and inspire the best in people (Weinberg, 2003)

All the mentioned points appear to imply that, the moderators (ERP contextual problems) should in fact impact the ability to operate in a way that inspires and influences the implementation team as well as stakeholders positively in ways that would produce a perceived client satisfaction. Furthermore, Goleman (2009) posited that “some people are particularly susceptible to emotional contagion; their innate sensitivity makes their autonomic nervous system (a marker of emotional activity) more easily triggered.” (p. 315)

In the context of the current study, the first argument is assumed to be the reason for the moderation results obtained, showing the rejection of the effects of all moderators (Table 5-6). The argument would be that the respondents’ abilities to impact perceived client satisfaction, conversely to Goleman’s statement above, were “not susceptible” to moderation effects due to a high emotional intelligence.

Table 5-6: Hypotheses 1a to 1d: Moderation of Relationship between EI and PCSAT

ID	Main Effect	Main Result	SID	Moderating Effect	Result
H1	Managers EI AND Perceived Client Satisfaction	Supported	H1a	Organisational Change Problems	Rejected
			H1b	External Partnership Problems	Rejected
			H1c	Resource Availability Problems	Rejected
			H1d	Cultural Problems	Rejected

Effect of ERP Context Moderators on Relationship between Leadership Performance and PCSAT

Shown in Table 5-7 are results of the moderated regression analyses carried out to test the hypotheses in relation to the moderating effects of - Organisational Change Problems (H2a), External Partnership Problems (H2b), Resource Availability Problems (H2c), and Cultural Problems (H2d) on the relationship between Managers' Leadership performance and Perceived client satisfaction. None of the mentioned moderators showed a statistically significant impact on the IV to DV relationship contrary to original predictions. Essentially, it had been expected that Resource Availability Problems would have shown a significant impact on the mentioned direct relationship. However, the moderating effect of Resource Availability Problems was not significant (see Appendix D-4a, Table 1, model 3). Surely a manager could not operate successfully without the availability of relevant resources. In fact, one would expect such resources to be fundamental to the implementation process. Furthermore, the resource availability question items included in the questionnaire were based on suggestions from the prior qualitative interviews, where it was identified as one of the contextual challenges faced by managers during ERP implementation. However, it must be noted that the moderator essentially refers to 'problems' relating to obtaining adequate levels of those resources rather than just their basic availability.

The specific resources constraints included in the factor included: lack of human resource, lack of management support, inadequate senior management levels of commitment to the project and inadequate project funding. Challenges in obtaining adequate levels of all these would appear to highly constrain any ERP implementation. Other researchers have also identified Resource availability as a contextual factor in their work. Larson and Gobeli (1989) looked at the impact of contextual factors on development projects in research and on the significance of project management structure on project success. As previously discussed in the Literature review section 2.3.2, the five contextual factors investigated by Larson and Gobeli were complexity, technological novelty, clarity of project objectives, project priority and resource availability. For all project sizes, availability of resources was the most important CSF. This further highlights the magnitude of the importance of resource availability in the success of projects across industries. Other researchers have identified resource issues in project management context; Maylor et al. (2008) for instance identified contextual factors such as: Organizational factors, Technical complexity and Resource complexity. Along the same vein, Studer (2005) suggested that four factors associated with the organization were critical for Enterprise Human Resource (EHR) system implementation success. The factors were management support, financial resource availability, implementation climate, and

implementation policies and practices. However, it should be noted that whilst these studies highlight the high importance of resource availability, it also indicates the broadness of the term as it may be said to apply to virtually any needs during an implementation. Drawing upon these arguments, it may be that the reason resource availability problems did not significantly moderate the relationship between Leadership performance and Perceived client satisfaction is that the Resource availability factor was defined too broadly.

In relation to the absence of impact by other moderators on the relationship between Managers' Leadership performance and Perceived client satisfaction, it could be said that the display of leadership performance itself happens within the actual implementation team without much direct visibility outside of the team and hence may not have a direct influence on the judgement or satisfaction of clients. Hence, the impact of these types of moderators on managers' leadership performance may not be that pronounced externally to the team and to the client.

Table 5-7: Hypotheses 2a to 2d: Moderation of Relationship between Leadership Performance and PCSAT

ID	Main Effect	Result	SID	Moderating Effect	Result
H2	Managers Leadership Performance AND Perceived Client Satisfaction	Supported	H2a	Organisational Change Problems	Rejected
			H2b	External Partnership Problems	Rejected
			H2c	Resource Availability Problems	Rejected
			H2d	Cultural Problems	Rejected

Effect of ERP Context Moderators on Relationship between Follower Commitment and PCSAT

Based on the current study, Table 5-8 shows that as predicted, the moderators - Organisational Change Problems (H3a), External Partnership Problems (H3b), Resource Availability Problems (H3c), and Cultural Problems (H3d) all moderate the main effect between Follower

Commitment and PCSAT, though moderation by External Partnership Problems was only partially supported. The results imply that while all moderators within the ERP context appear to affect the relationship between Follower Commitment and Perceived Client Satisfaction, the moderating impact of External partner problems does not appear to influence the commitment of the manager's subordinates to a high extent. To properly expound on these results, it is perhaps useful to describe the followership concept. As previously written about in section 2.4.3, Followership is highly essential to the performance of a leader. Kelley (1992) posited that followers are partners as well as a significant component driving the leadership process. Followership is the characteristics, behaviours, and relational processes between followers and leaders as well as individuals responding to a leader's influence (Uhl-Bien et al., 2014). The reason their (Followers') commitment to the ERP leader and the knock-on effect on Perceived Client satisfaction does not appear to be only partially impacted by External Partnership problems may be because these types of contextual problems are absorbed and contained within the ERP manager's team and the effect not exposed to clients nor allowed to influence the relationship with Clients – thereby only moderately affecting Perceived Client satisfaction.

Table 5-8: Hypotheses 3a to 3d: Moderation of Relationship between Follower Commitment and PCSAT

ID	Main Effect	Result	SID	Moderating Effect	Result
H3	Managers Follower Commitment AND Perceived Client Satisfaction	Supported	H3a	Organisational Change Problems	Supported
			H3b	External Partnership Problems	Partially Supported
			H3c	Resource Availability Problems	Supported
			H3d	Cultural Problems	Supported

Effect of ERP Context Moderators on Relationship between Team & Peer Cooperation and PCSAT

Shown in Table 5-9 are results of the moderated regression analyses carried out to test the hypotheses in relation to the moderating effects of Organisational Change Problems (H4a), External Partnership Problems (H4b), Resource Availability Problems (H4c), and Cultural Problems (H4d) on the relationship between Managers' Team & Peer Cooperation and Perceived client satisfaction. Resource Availability Problems (H4c) is the only contextual factor that was shown to moderate that relationship. The other moderators showed no significant impact on the mentioned main effect. This result implies that the cooperation of the team as well as peers when implementing an ERP system is highly important to achieving perceived client satisfaction and that resource availability problems are expected to constrain the efforts of team and peer in achieving that goal. The other contextual factors have not been shown to constrain the IV to DV relationship in the current study. As described in PMI (2017), organizational structure is an enterprise environmental factor which can affect the availability of resources and influence how projects are conducted. Some of the Resource availability factors discussed in the current research have included: lack of human resource, lack of management support, inadequate senior management levels of commitment to the project and inadequate project funding. All these would appear to be highly crucial to the success of an ERP implementation and would no doubt impact the relationship between the cooperation amongst the Implementation staff and perceived client satisfaction. Hence the result is explainable.

According to results from the current study, moderators such as Organisational Change Problems (H4a), External Partnership Problems (H4b), and Cultural Problems (H4d) have had no impact on the relationship between Managers' Team & Peer Cooperation and Perceived client satisfaction. The interpretation could be that the strength of managers cooperation with their team and similarly their peers in implementing and delivering ERP to the perceived satisfaction of clients is greater than the impact of the mentioned moderators. Hence, the cooperative strength of the team and peers is indicated as not susceptible to those changes and constraints; and if they were, it would not impact perceived client satisfaction.

Table 5-9: Hypotheses 4a to 4d: Moderation of Relationship between Team & Peer Cooperation and PCSAT

ID	Main Effect	Result	SID	Moderating Effect	Result
H4	Managers Team & Peer Cooperation AND Perceived Client Satisfaction	Supported	H4a	Organisational Change Problems	Rejected
			H4b	External Partnership Problems	Rejected
			H4c	Resource Availability Problems	Supported
			H4d	Cultural Problems	Rejected

Effect of ERP Context Moderators on Relationship between Delivery Capabilities and PCSAT

Table 5-10 shows there was no evidence that the strength of the relationship between Delivery Capability and Perceived Client Satisfaction is reduced by any of the moderators Organisational Change Problems (H5a), External Partnership Problems (H5b), Resource Availability Problems (H5c), or Cultural Problems (H5d). As discussed in section 5.4.1, the main effect, the relationship between Delivery Capability and Perceived Client Satisfaction shows no statistical significance. The significance of the main effect is one of the prerequisites to further investigate the moderating effect. In this case the moderating effect loses its basis, that is, if the main effect is not existing, there is no theoretical ground to further investigate the moderating effect. As indicated already, whilst there is no evidence in the current work that *Delivery Capabilities* may affect Perceived Client Satisfaction, it must be noted that those capabilities are generally assumed to be part and parcel of a typical manager's skillset, usually assessed prior to employment to lead and deliver an ERP implementation. This variable was measured in terms of managers' effectiveness in using relevant software and hardware tools, their effectiveness resourcing quality individuals, quality management and providing a satisfactory working atmosphere. In relation to the study by Atkinson (1999) explaining the two stages: 'delivery' and 'post-delivery' measurement of project success, it may be that the expected impact on client satisfaction would be experienced rather at a post-delivery stage.

Table 5-10: Hypotheses 5a to 5d: Moderation of Relationship between Delivery Capabilities and PCSAT

ID	Main Effect	Result	SID	Moderating Effect	Result
H5	Managers Delivery Capabilities AND Perceived Client Satisfaction	Rejected	H5a	Organisational Change Problems	Rejected
			H5b	External Partnership Problems	Rejected
			H5c	Resource Availability Problems	Rejected
			H5d	Cultural Problems	Rejected

Effect of ERP Context Moderators on Relationship between PM Knowledge and PCSAT

Shown in Table 5-11 are results of the moderated regression analyses carried out to test the hypotheses in relation to the moderating effects of Organisational Change Problems (H6a), External Partnership Problems (H6b), Resource Availability Problems (H6c), and Cultural Problems (H6d) on the relationship between Managers' Project Management Knowledge and Perceived client satisfaction. Resource Availability Problems (H6c) is the only contextual factor that was shown to moderate that relationship. The other moderators showed no significant impact on the mentioned main effect. This result implies that whilst the knowledge and understanding of a manager in managing ERP systems is highly important to achieving perceived client satisfaction, resource availability problems can constrain their efforts to achieving that goal. The other contextual factors have not been shown to constrain the I.V. to D.V. relationship in the current study.

As discussed in the literature review, Pellegrinelli et al. (2007) found that contextual factors in program management often draw much of program managers' attention and efforts and cause them to make compromises and re-shape their programs. This was confirmed by Shao (2010), who showed that the relationship between program managers' leadership competences and program success was moderated by the contextual factors in the program.

Table 5-11: Hypotheses 6a to 6d: Moderation of Relationship between PM Knowledge and PCSAT

ID	Main Effect	Result	SID	Moderating Effect	Result
H6	Managers PM Knowledge AND Perceived Client Satisfaction	Supported	H6a	Organisational Change Problems	Rejected
			H6b	External Partnership Problems	Rejected
			H6c	Resource Availability Problems	Supported
			H6d	Cultural Problems	Rejected

Effect of Moderators 7a to 7d on relationship between Offshore Team Relations and PCSAT

Table 5-12 shows there was no evidence that the strength of the relationship between Offshore Team Relations and Perceived Client Satisfaction is reduced by any of the moderators Organisational Change Problems (H7a), External Partnership Problems (H7b), Resource Availability Problems (H7c) or Cultural Problems (H7d). As discussed in section 5.4.1, the main effect in this instance - the relationship between Offshore Team Relations and Perceived Client Satisfaction - showed no statistical significance. And as already mentioned, the significance of the main effect is one of the prerequisites to further investigate the moderating effect. In this case the moderating effect loses its basis, that is, if the main effect is not existing, there is no theoretical ground to further investigate the moderating effect. Moreover, as mentioned previously, considering the importance of the contributions of offshore team members on ERP implementations, the lack of impact of offshore team relations on client satisfaction is surprising. One possible explanation may be that, as the manager controls the assignment of project resources to roles and activities that best meet implementation objectives and milestones, that actual dynamic and ongoing daily interaction whether with onshore or offshore resources may not be directly visible to the client; as clients may be more interested in whether planned milestones are being met or not.

Table 5-12: Hypotheses 7a to 7d: Moderation of Relationship between Offshore Team Relations and PCSAT

ID	Main Effect	Result	SID	Moderating Effect	Result
H7	Managers Offshore Team Relations AND Perceived Client Satisfaction	Rejected	H7a	Organisational Change Problems	Rejected
			H7b	External Partnership Problems	Rejected
			H7c	Resource Availability Problems	Rejected
			H7d	Cultural Problems	Rejected

5.5 Theory Building

As previously discussed in section 2.3.6, a competence-based theory of client satisfaction on ERP is developed in this section. Schwaninger and Groesser (2008) posited that the design of the theory-building process is crucial for the quality of the resulting model. They explained that the basic value of a model outcome is that it embodies propositions that can be refuted. They further stressed that the main purpose of a model is not whether a proposition is true or false but rather to provide an anchor around which arguments can be built. Presenting a comprehensive evaluation of the dynamic modelling approach in comparison with alternative approaches would be beyond the scope of the current study. Hence, the proposal by Whetten is adopted, also previously used by Muller and Turner (2010b) and by Shao (2010). Whetten (2002) outlined the process for theory / model building, suggesting to systematically flesh out the assumptions underlying the theoretical model. Following Whetten's suggestions of steps to be taken for the theorizing methodology in order to avoid creating models that 'more closely resemble a complex wiring diagram than a comprehensible theory' (Sutton and Staw, 1995: 376), the steps are adapted for the current study as heuristic principles for modelling and theory building. They are:

1. Identify the core construct - The core construct in the current study is identified as Managers' ERP Leadership Competences –and it plays the role of an explanatory construct (Abell, 1971).

2. Next, similar to the distinction made by Cossette and Audet (1992, pg. 342) between 'cause-effect' and 'means-end' relationships. An additional construct is added to the right of the core construct. These primary elements of the theory are thus shown along the horizontal axes and contain two constructs: Managers' ERP Leadership Competences and Perceived Client Satisfaction.
3. ERP context is further included along the vertical axis as a moderating construct between Managers' ERP Leadership competences and Perceived Client Satisfaction. This implies that in order to fully understand the relationship between the two constructs ERP context constraints must be taken into consideration. A moderating construct is one that changes the relationship between two other constructs when it is present (Baron and Kenny, 1986). For balance, a commensurate moderation of enablers and converse effects / remedies are also included – to indicate that the balanced reaction will provide a conducive context for a successful outcome in terms of a Perceived Client Satisfaction.
4. Whetten further suggested to make explicit the theoretically relevant relationships in the conceptualization and portray an overall pattern of relationships. The conceptual assumption in the current research may be articulated as The ERP Leadership Competence-based Theory of Perceived Client Satisfaction.
5. This final step involves specifying the contextual boundaries, or conditions, that circumscribe a set of theoretical propositions (Bacharach, 1989; Dubin, 1976; Rousseau and Fried, 2001). It is to be noted that there are possible highly interactive, continuous interplay between the contextual factors. However, these moderators were originally extracted at the factor analysis stage of the analysis process in the current research. In Figure 5-2, moderators are represented in different sizes denoting the relative weighting of their impact on the main relationships. Moreover, the competences are represented in different sizes to denote the relative weighting of their contribution to perceived client satisfaction. Dotted lines represent those competences that displayed no significant contributions to perceived client satisfaction.

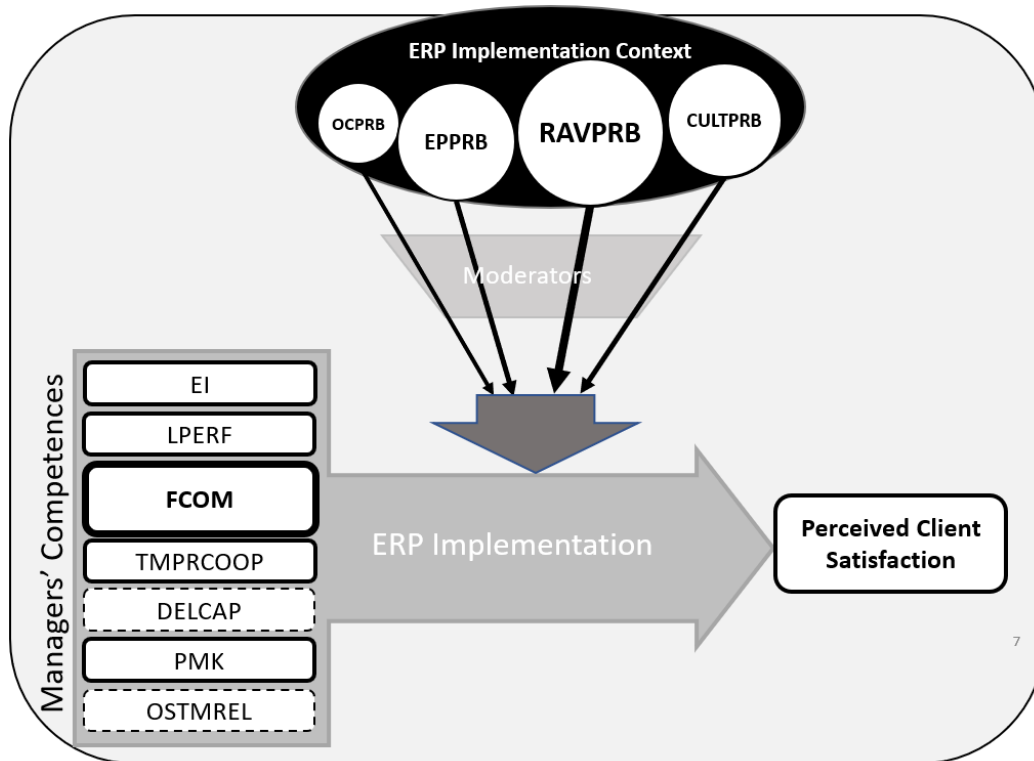


Figure 5-2: A Model of ERP Leadership-Competence-based Theory of Client Satisfaction

Figure 5-2 presents the model of ERP leadership-competence-based theory of client satisfaction. This model is consistent with the theoretical perspectives of the present study, in relation to the contingency theory. The model reflects the outcome of the current research on the relationship between managers' ERP leadership competences and Perceived client satisfaction. Lane (2008) observed that not every model is a theory and asserted that for a model to qualify as a theory, "what is required is a model along with a plausible account of why the model produces the behaviour that it does." An account is provided thus: When reading the model from the left to the right (Schwaninger et al, 2008; Whetten, 2002), the core construct is the input construct consisting of all relevant ERP Leadership competences required to lead an ERP implementation. In the current work, those competences that have shown a significant influence on the Perceived client satisfaction outcome are: EI, Leadership Performance, Follower Commitment, Team & Peer Cooperation and Project Management knowledge. These identified competences are posited to be key to tackling ERP Context constraints identified in the current study during the ERP implementation journey. The ERP context constraints identified in the current study include: Organisational Change problems, External Partnership problems, Resource Availability problems and Cultural problems.

Bringing this back to the original intention set out in relation to provide further support to the foundations of the Contingency Theory based on the outcome of the current research, the study claims to contribute to the contingency theory in relation to the earlier assertion in section 2.3.6, which indicated the unbundling of the contingency theory into - Leadership, Situation and Desired outcome, the Leadership element in the current study would comprise ERP Leadership competences, the situation would be the ERP context while the Desired outcome sought would be Perceived client satisfaction as shown in the model provided in Figure 5-2.

Finally, it is worthy of note that Whetten recognised that the tension inherent between the twin requirements of producing generalizable explanations and contextualized explanations can either be viewed as an insurmountable obstacle to effective theory development or as a generative prod to continuously improve extant views. However, that negative research results can often be more informative than positive ones if they suggest important limiting conditions that should be examined more closely. Sutton and Staw (1995, pg. 376) stated: "One indication that a strong theory has been proposed is that it is possible to discern conditions in which the major proposition or hypothesis is most and least likely to hold." To this end, it may be added as a recommendation for future research to investigate the conditions under which the proposed model would likely hold – elucidated in section 6.5.

5.6 Summary

The current research found the competences: EI, Leadership Performance, Follower commitment Team and Peer Cooperation and Project Management Knowledge to be significant predictors of Perceived Client Satisfaction (PCSAT), with Follower Commitment as the strongest predictor of PCSAT. No significant effects were noted for Delivery Capabilities and Offshore Team Relations. The moderators Resource Availability Problems, Cultural problems and External Partnership Problems showed highly significant influences on the strength of the relationship between the independent variables and the dependent variable with Resource Availability problems showing the most significance in all moderated regression analysis carried out.

The current chapter has discussed the results obtained from the different analyses carried out on the data sample obtained drawing linkages between the current work and previous works where appropriate thereby providing support for the results found in the current work. The next chapter (6) is the concluding chapter and it provides some final comments on the current work, the contributions made to knowledge and practice, limitations of the study and recommendations for future research.

6 Conclusion

For the last few decades, an increasing number of researchers have published reports on the effect of emotional intelligence and other leadership competences on different aspects of project management and other organisational activity, including ERP implementation outcomes. However, none has been found which specifically considered the effect of ERP context as a moderator when reviewing the effect of emotional intelligence and other leadership competences on perceived client satisfaction. This work examines these relationships and the significant intercorrelations within. It is clear that EI competences do not operate in a vacuum. In fact, it may be said that, it is the ability to “navigate” a context and further produce a successful outcome, that truly determines the measure / level of emotional intelligence. Thus, if this were to be true, then it may be said that emotional intelligence is context based. The implication is that, a person’s measure of emotional intelligence may be directly linked to the context in question. This assertion narrows the more generic definitions of emotional intelligence into a contextualised definition. Hence, one may say “a person has the emotional intelligence competence to lead an ERP implementation”, whereas, that same person may not necessarily have the emotional intelligence to lead a football team or a political party. Contextualisation is key to defining and discussing emotional intelligence. This will enable the broadening of the definition to cover both the different aspects of organisational workstreams as well as other life contexts where emotional intelligence also plays a key and determinant role.

As already reiterated by several researchers, emotional intelligence alone is nothing without domain or subject knowledge and skill. However, based on the existence of domain knowledge and skills, emotional intelligence can be indeed perceived as the differentiator between adequate and stellar performance. This suggestion may be further applied to other leadership competences; and especially toward the development of appropriate leadership competences for the right context rather than generic leadership development approaches; which though may still be useful, might not fully serve the intended needs.

It has been previously discussed in the literature review, when reviewing the skills perceived to be the most important for project managers that there is linkage between a project manager’s mastery of project management tools and techniques, their business and general management aptitude, and their interpersonal skills (Fisher, 2011). Judgment and opinions are bases for subjective measures of success, as identified by Chan, et al. (2004). These

measures could comprise a number of elements including client or stakeholder satisfaction, functionality and quality. Project management literature to date has provided no consensus on a definition of project success or a means of assessing it (Ika, 2009); different stakeholders have different perceptions of what success means (Davis, 2017) and, as a result, success is often contested and controversial (McLeod et al. 2012).

De Wit (1988) notably asserted that, while, good project management can contribute towards project success, it is unlikely to be able to prevent failure (p. 164). He further stated:

“when measuring project success, one must consider the objectives of all stakeholders throughout the project life cycle and at all levels in the management hierarchy. Therefore, to believe that, with such a multitude of objectives, one can objectively measure the success of a project is somewhat an illusion.” (De Wit, 1988)

The competences of project managers and ERP leaders are clearly essential to the successful delivery of ERP systems and several researchers have attempted to add to knowledge in the area to help bring further clarity to aspects of the topic, and in so doing improve the rate of success of such large implementations. However, success has remained difficult to measure, mostly due to the many moving parts and the inability of researchers to properly contextualise their work. Though at first glance it may be inferred that a thorough understanding of project management knowledge and practices, using established project management standards and principles as developed by institutes such as: Association for Project Management (APM), International Project Management Association (IPMA) and Project Management Institute (PMI) would be a panacea to the issue. However, according to Xia and Lee (2004), the dimensions and characteristics of project complexity are not fully described by any existing project management framework. As a result, existing project management frameworks such as the Project Management Book of Knowledge (PMBOK®) may be of limited use when managing complex projects. In contemporary organizations, factors driving increases in project complexity and the speed of change make it even more challenging for project managers to successfully deliver projects (Jaafari, 2003). Thus, the complex dynamics surrounding any ERP implementation reveal that success does not come from one direction alone but is a collective effort from several partners.

The current research has attempted to factor out the constituent components within such an implementation dynamic from both the perspectives of the implementation manager as well as

the client, identifying the key contributors at both ends; and also factor out the key context components that may serve as deterrents to an ERP implementation. The most significant challenge identified to an implementation within the context of the current work were Resource Availability problems and Cultural problems. In addressing this, it is suggested that a thorough understanding of key stakeholders is sought from the onset and a plan of influence determined. Along the same vein, the most significant independent variable and antecedent to perceived client satisfaction in an ERP implementation context is Follower commitment. This highlights the need to harness the contribution of the team as well as peers, and any relevant resources identified to drive the implementation to the goal of perceived client satisfaction.

6.1 Contributions to Knowledge and Practice

As already discussed, the client satisfaction phenomenon is not necessarily the same as the project success phenomenon. Client satisfaction is a phenomenon that holds the client's perception of the implementation as the goal to be attained. As previously mentioned in the literature review, Walker (2015) emphasised client satisfaction in relation to understanding project success and stated that success of a project is based on "the difference between the client's expectation at the beginning of the project and his satisfaction at its completion" (p. 311). Furthermore, Baker, Murphy and Fisher (1988, p.902) provided a definition for project success which highlighted satisfaction as an important outcome, and a key determinant when judging a project to be an 'overall success' - asserting that project success is a matter of perception and that a project may be perceived as an 'overall success' if:

'...the project meets the technical performance specifications and/or mission to be performed, and if there is a high level of satisfaction concerning the project outcome among key people on the project team, and key users or clientele of the project effort'

6.2 Contribution to Knowledge

The moderating effects of context has been examined in different studies using different lenses, for instance the study by Shao (2010) conducted to investigate the relationship between program managers' leadership competences and program success, and the role program context plays on that relationship. Along the same lines the current research studies the relationship between managers' competences and perceived client satisfaction and the moderating role of context, through examining the specific context of ERP implementations. Moreover, the current study sheds further light on the moderating nature of context on the

relationship between managers' competences and implementation success in terms of perceived client satisfaction.

The current study's first contribution to knowledge is in adding further support to the Contingency theory by providing the Model of ERP Leadership-Competence-based Theory of Perceived Client satisfaction which is presented in Figure 5-1. The model has emerged from the current study through the theory development process. Lewin (1945) observed that only good theories are practical. Lewin's aphorism is an affirmation of the belief that good theories must be sensitive to context. Along the same vein, Mary Parker Follett (1924) referred to "the law of the situation", meaning that the value of a theoretical conception as a tool for guiding practice is subject to the circumstances of any given situation. The implication of the 'law of the situation' is that the failure to understand how contextual constraints temper general claims significantly undermines the utility, and hence, the credibility, of scholarly explanations. However, as noted by Baron and Kenny (1986) it is impractical to assume that researchers can a priori identify all of the potential contextual limitations pertaining to a proposed conceptualization, a common theory-improvement path is that efforts to assess the adequacy of a theory uncover previously unspecified contextual constraints, which in turn lead to the addition of a new moderating variable within the theory

The second contribution to knowledge is the development of measurement constructs for ERP implementation context and Perceived client satisfaction. Hence, improving the theoretical system of ERP implementation management through clarifying further the concepts of ERP leadership and client satisfaction.

Thirdly, the finding that ERP managers' EI, Leadership Performance, Follower commitment, Team & Peer Cooperation, and Project Management knowledge competences identified in the current study positively correlate with perceived client satisfaction; with Follower commitment as the antecedent providing the highest explanatory power on perceived client satisfaction.

Fourth, is the consideration of context. The importance of Context has been emphasised in The Contingency Theory and in Theory building (Whetten, 2002). It was found that all ERP context variables moderate the different relationships between Managers' competences and perceived client satisfaction, with moderators Cultural Problems and Resource availability

problems providing the highest statistical impact as a whole on the relationships between independent variables and the dependent variable of Perceived client satisfaction.

Finally, the theoretical implications lie in improving the theoretical system of ERP implementation management through clarifying the concepts of ERP context and Perceived client satisfaction for clients implementing ERP; and further elucidating the leadership competences required to drive such large implementations. The contributions to knowledge from the study carried out in the current research may be recapped in terms of the principal areas of literature reviewed in relation to the ensuing gaps the thesis sought to address – which are elucidated as follows:

i. The influences of managers' ERP leadership competences on perceived client satisfaction

The strength of managers' ERP leadership competences has a positive effect on the achievement of a perceived client satisfaction outcome. In the current study, all competences showed a significant contribution to the client satisfaction construct except Delivery capability and Offshore team relations. This provides a sound basis for the understanding of the implementation competences contributing to the achievement of perceived client satisfaction on ERP implementations. When a manager knows the leadership competences making the most significant contribution to the achievement of client satisfaction on ERP implementations, they will have the ability to recognise and pool their intentions towards those competences to the degree that it is feasible during an ERP implementation.

In the current study the Pearson product-moment correlation coefficient was used to investigate identified ERP leadership competences and it showed significant positive relationships between the dependent variable perceived client satisfaction and the following independent variables; Leadership performance ($r = .41, p < .01$), Follower commitment ($r = .50, p < .01$), Team & Peer Cooperation ($r = .35, p < .01$), Project Management knowledge ($r = .27, p < .05$) and Emotional Intelligence ($r = .24, p < .05$). The independent variables Delivery capabilities and Offshore Team Relations showed no statistically significant relationships with the dependent variable. Follower commitment was found to be the most significant managers' competence influencing perceived client satisfaction. These results support existing research showing linkages between these competences and implementation success in several areas. The results emphasize the importance of Leader influence on the team and specifically the commitment of Followers and supports the assertion that Leaders no doubt influence the performance of their team (Pirola-Merlo, Härtel, Mann & Hirst., 2002).

On follower commitment, the understanding that followers influence each other to create a network of complex human relationships has been studied by several psychologists. It is perceived that each person subtly influences one another in such group dynamics (Côté, Lopes, Salovey & Miners, 2010; Hogg et al., 2006; Smith & Comer, 1994). Moreover, the strength of these types of groups has been demonstrated to function without leaders. In these circumstances those follower relationships have been shown to have the capacity to bring about organisational change (Toor & Ofori, 2008; Lichtenstein & Plowman, 2009; Kickul & Neuman, 2000). Thus, studies have shown that when followers feel like they are contributing to key decisions and their proposals and suggestions are being considered to create change, everyone, including the organization, benefits (Kohles, Bligh, and Carsten, 2012; Peterson, Walumbwa, Avolio, and Hannah, 2012). On emotional intelligence, existing research suggested that emotional intelligence may be linked to overall performance (Young and Dulewicz, 2005), and to project success based on UK financial services company (Geoghegan and Dulewicz, 2008); and there are grounds for suggesting that it may be linked to perceived client satisfaction in the current study thereby providing further support for the impact of EI in an organisational setting. Additionally, it should be noted that even though the current study did not review the impact of the different emotional intelligence dimensions, other studies have found certain emotional intelligence dimensions, for example 'Influence', to be a significant predictor of satisfaction ($\beta = .162, p < .05$) (McBain, 2004).

ii. How ERP implementation context moderates the influence of managers' ERP leadership competences on perceived client satisfaction

As previously reported, ERP implementation context moderates the impact of managers' ERP leadership competences on perceived satisfaction. Four contextual factors were identified and investigated for their moderating impact on the relationships between the independent and dependent variables. They are: Organisational Change problems, Resource availability problems, External Partnership problems and Cultural problems. Based on the identified direct relationships, each of the moderators was shown to moderate the relationship between Follower commitment and Perceived client satisfaction. However, Culture problems was shown to be the most impactful moderator to the relationship between Follower commitment and perceived client satisfaction – followed closely by the moderator Resource availability problems. The meaning to be taken from this result is that these types of problems are to be keenly anticipated and appropriate remediations and approaches to counter them as they arise must be put in place throughout an ERP implementation. Thus, these findings imply the need for an environmental / contextual analysis on an organisation prior to an ERP implementation, and thereby supports findings of Pliskin et al (1993), who identified that the "effective" analysis

of the organisation's culture was essential to the successful implementation of any information system. Thus, the finer explanation of ERP moderators can be achieved through the analysis of different levels of influence they can make on the relationships.

As previously discussed in the literature review chapter, other researchers have also identified resource availability in their studies of context in project management. Maylor et al. (2008) for instance identified contextual factors such as: Organizational factors, Technical complexity and Resource complexity. Along the same vein, Studer (2005) suggested that four factors associated with the organization were critical for Enterprise Human Resource (EHR) system implementation success. The factors were management support, financial resource availability, implementation climate, and implementation policies and practices. Whilst this also highlights the high importance of resource availability, it also indicates the broadness of the term as it may be said to apply to virtually any needs during an implementation. Thus, a suggested approach to handling such resource needs would be to categorise all such needs in a way that appropriate plans of action can be drawn against the different buckets of resources and tracked throughout the implementation. Further, the five contextual factors investigated by Larson and Gobeli (1989) were complexity, technological novelty, clarity of project objectives, project priority and resource availability. For all project sizes in their study, availability of resources was the most important CSF. The current study has found further support for the mentioned studies as it further highlights the high importance of resource availability in the success of projects across industries.

Accordingly, it is argued that the current research contributes to knowledge in terms of the points put forward in the current subsection.

6.3 Contribution to Practice

The results of the current research are likely to be of primary significance to practitioners, managers in an ERP implementation setting, particularly where client satisfaction is the ultimate outcome sought, although there are wider implications for managers of Information Technology projects and programs in general with regard to the contextual factors needing to be addressed in such implementation contexts.

The development of the survey questions was through an initial qualitative interview approach with ERP implementation practitioners. Hence, the further development of the questionnaire and the results are perceived to provide a good representation of the target population and the context.

It has been noted from studies in ERP critical success literature that most of the focus so far has been on project and implementation success, thereby inadvertently or otherwise, suggesting other client related dimensions are not as important. However, since resistance to change by employees lie “at the root of most ERP implementation challenges” (Salopek, 2001; p. 28), it can be said therefore that client and employee expectations and attitudes play an important role in ERP success (Sower et al., 2001) and therefore should be subsumed into the overall measures and addressed during the implementation. For example, understanding different stakeholders’ perceptions and ability to influence project outcomes was the theme of Kloppenborg, Stubblebine, and Tesch’s (2007) research on sponsor behaviours.

The managerial implications in practice are twofold:

1) helping ERP managers understand and further develop required leadership competences for tackling contextual issues encountered during implementation. The contextual issue identified in the current study to impact ERP implementation the most was cultural problems, followed by resource availability problems. It is hoped that managers would be able to harness the knowledge of outcomes of the current study to develop required leadership competences and further shape the implementation context where possible; also to harness, for instance, the outcome that follower commitment was the antecedent that was identified as making the strongest contribution to perceived client satisfaction in selecting implementation team members. Additionally, that managers’ EI has a significant effect on perceived client satisfaction.

2) helping sponsors and senior executives select appropriate ERP managers, by considering the competences identified in the current work, and in so doing increase the chances of ERP implementations achieving perceived client satisfaction.

Based on the ERP leadership competences found to be of significance to client satisfaction in the current work, and the further observation that ERP contextual factors can impact an implementation as a moderator, it is recommended that managers develop a thorough

understanding of the key players and stakeholders within their context of operation – possibly using a stakeholder map to understand the spheres of influence at a client company, drawing out the key individuals and groups to be influenced in order to achieve required project needs – and then further have a conscious plan of approach to gain the support of each identified stakeholder, in relation to their levels of power and influence on the implementation. The stakeholder management process is shown in Figure 2-3 of Chapter 2 and describes the steps to identify key influencing stakeholders and how to further address their needs.

Influencing Tactics

The power and nature of influence have been discussed and aptly summarised by Yukl (2009), who stated:

‘Effective managers influence subordinates to perform the work effectively they influence peers to provide support and assistance, and they influence superiors to provide resources and approval of necessary changes.’ (Yukl, 2009; p. 349)

He further discussed different methods of influencing the behaviour and attitudes of other individuals (called “target persons”) in the same organization – for example the coalition tactics, which are an indirect type of influence tactic wherein a manager gets assistance from other people to influence the target person. The coalition partners may include peers, subordinates, superiors, or outsiders (e.g. clients and suppliers).

Political Tactics

Walsham (1995b) identified the manager’s role in all the interconnected activities involved in an implementation, and that the manager needs political and personal skills, the ability both to use political tactics and to be considered an insider. Willcock and Mark (1989) also identified the importance of the system manager establishing political and cultural support through identifying and responding to stakeholders’ objectives, especially those of users.

Follower Commitment

Gregersen, Morrison, and Black (1998) suggested a genuine emotional connection would lead to willingness on the part of followers to do their best work and make whatever sacrifices were required to support the leader’s vision. This includes, “giving the leader the benefit of the doubt on difficult matters” (p. 24), thus releasing motivational energy. When the leader emotionally connects with followers, they are more adept in securing support during negative events. “In essence . . . leaders need to have the ability to inspire and arouse their followers emotionally.

Followers, thus inspired, become committed to the leader's vision and, ultimately, to the organization" (Humphreys et al., 2003, p. 193).

All these suggestions are to be subsumed into ERP managers' implementation plans in order to ensure a client-centric approach to ERP implementation – towards producing an eventual perceived client satisfaction.

6.4 Limitations of the Research

During the course of the development of the current study, some limitations were noted and are presented in this section. These limitations are ones noted to have somewhat influenced the current study in some shape or form.

Qualitative angle

Firstly, the scope of this study will lack much of the qualitative narratives behind the contextual factors affecting ERP implementations as well as the effect of managers' competences on perceived client satisfaction. Whilst this study does include a qualitative component during the pilot stage, it may be considered thin compared to other larger, descriptive qualitative studies on ERP. For instance, like Plant and Willcocks (2007) who examined two longitudinal studies of international ERP implementations. However, those broader qualitative studies could be said to have provided evidence which laid the foundations as antecedents to studies such as the current one.

Sample Size

Another limitation is that the sample size as well as the number of responses were relatively modest, at $n = 83$. Originally 125 had been sought. Small sample sizes can both limit the generalisability of findings and reduce the power of the statistical tests making Type II errors more likely. This was addressed in the current study by reducing the number of variables to allow for the recommended ratio of 5:1 (Hair et al., 2010). It is hence possible that certain non-significant findings in the moderation section may have been affected, such as the lack of impact of Resource Availability constraints on the relationship between the IV and DV - Leadership performance and Perceived Client Satisfaction.

Cross-Sectional Study Design

The research employs a cross-sectional and correlational design, which limits the ability to determine the direction of the relationships between variables and constructs. Easterby-Smith et al. (1991) notes that such studies do not provide explanations of the relationship between observed phenomena but rather capture data at a particular point in time regarding the phenomenon under investigation. Hence, cross-sectional research means it may be difficult to make causal inference.

In closing, it is believed that responses received in the current study were realistic, that is, representative of real experiences. In relation to the limitations identified, it is hoped that the contribution from this work can still provide and enhance clarity on the pertinent issues, as well as bring additional knowledge to the impacted knowledge domains.

6.5 Recommendations for Future Research

Reflecting upon the implications of the empirical findings of the current study discussed in previous sections, further research is recommended to be carried out in areas elucidated in this section to further the learning in the current field and make additional contributions to theory, knowledge and practice.

Leader Personality Assessment and Fit

As previously highlighted in chapter 2, Dulewicz et al. (2003b) explained that, the personality of the leader plays an important part in the exercise of leadership. The areas of effectiveness (the “skills”) need to be exercised in a way, which is congruent with the underlying personality of the leader. An interesting area for future research is the study of the effect of personality characteristics in tackling the identified resource availability problems in such ERP contexts – as it appears this would further help to address such a high impact moderator and contribute to research in the area.

360-degree Feedback

Future research might also employ a 360-degree feedback approach that would allow a comprehensive assessment of the leader when exploring the effect of their competences from different angles and view-points on perceived client satisfaction.

Study of Interaction between contextual variables

While research on the effects of Context variables is rapidly accumulating, to the current researcher's knowledge there has been little attention to understanding how the variables interact to influence the Outcomes. Most empirical research focus on context variable as separate elements (i.e., culture, human resource activities, or organisational change). However, these variables are interrelated in practice. Hence, explicit propositions of how they come together and interact to influence client satisfaction or other desired outcomes would be beneficial. Hence, further work to examine individual and group level processes through which contextual variables combine to influence perceived client satisfaction and ERP implementation outcomes in general is needed.

Appropriate Conditions of the Proposed Model

Finally, as previously mentioned in section 5.5, Sutton and Staw (1995, p.376) stated: "One indication that a strong theory has been proposed is that it is possible to discern conditions in which the major proposition or hypothesis is most and least likely to hold." To this end, it is recommended that for future research an investigation of the conditions under which the proposed Model of ERP Leadership-Competence-based Theory of Client Satisfaction would likely hold true and where it would not be adequate.

6.6 Summary: Answer to the Research Question

The research question raised in the current study was:

How does ERP implementation context moderate the relationship between Managers' ERP Leadership Competences and Perceived Client Satisfaction?

The data collection, analysis and discussions were based on this question. In addressing the research question, four points were focused on which have been addressed during the research process and elucidated in the discussions chapter and briefly summarised in this section. In answering the research question, a quantitative study was carried out. The two points of focus are listed along with the summarised conclusions derived through empirical analysis:

- i. The influences of managers' ERP leadership competences on perceived client satisfaction

Particular ERP leadership competences have demonstrated a positive effect on perceived client satisfaction while others have not. Follower commitment has particularly shown the strongest impact as an antecedent to perceived client satisfaction. The next was Team and peer cooperation. Others were: Leadership Performance, Follower Commitment and Project Management knowledge. When a manager understands the significant independent variables impacting perceived client satisfaction, they may be able to decide better which of the competences need improvement and further work in relation to driving and leading ERP implementations towards successful outcomes. Neither Delivery Capability nor Offshore Team Relationship showed a significant impact on Perceived Client Satisfaction. However, as previously discussed, the influence of a manager's delivery capability along the time continuum at different phases of ERP implementation can in turn impact client satisfaction within those phases albeit not necessarily of equal impact across the whole implementation. On Emotional Intelligence, there was a positive effect on perceived client satisfaction: the level of EI is a surrogate to measure of perceived client satisfaction. When a manager understands their EI competence they may be able to understand better how to use the different elements of their emotional intelligence to influence key target people and obtain needed results and key decisions when leading the implementation process.

- ii. How the ERP implementation context moderates the influence of managers' ERP leadership competences on perceived client satisfaction

Different ERP Context variables have demonstrated a moderating impact on the relationship between different managers' competences and perceived client satisfaction. In the current research, Cultural problems and Resource Availability demonstrated the most significant impact across all relationships between independent variables and perceived client satisfaction. There was no significant impact by any contextual factor upon the relationship between managers' EI and perceived client satisfaction.

The methodology used to resolve the moderation requirement was moderated hierarchical regression analysis.

6.7 Finally

ERP has been widely studied in the last two decades and existing literature has suggested that the implementation of ERP is fraught with disappointments for clients. There does not appear to be any research to date which compares managers' emotional intelligence with perceived client satisfaction within an ERP implementation context. The current study has identified that managers' ERP leadership competences do positively impact such implementations in a way that yields a type of success - defined in terms of a client's overall impression of the implementation – termed perceived client satisfaction. Follower commitment was the antecedent providing the highest explanatory power on perceived client satisfaction. Moreover, it found that the ERP context has a significant moderating impact on the relationship between managers' competences and perceived client satisfaction. Resource availability problems and Cultural problems were identified as the most impactful moderators. Several researchers have observed that theory-development treatises in the field of project and organizational studies rarely explore the subject of contextual constraints, or conditions and that the oversight reduces their 'power' as explanations. The fact that the current study has considered and reviewed context in its model is a significant addition to theory and practice allowing an exploration into the workings and dynamics of the ERP context while also showing the different competences required of a leader in such a context to tackle ensuing challenges and constraints along the way towards achieving perceived client satisfaction – thereby further enriching the contingency theory in its application to ERP implementations. Follow-up studies are strongly encouraged to continue to shed more light in this area.

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Appendices

Appendix A – Interview Questions and Responses

Section 1 – Interview Data

Interview Questions as well as Responses from interviewees are summarised in this section.

1. The nature of the companies and the nature of the ERP implementation the interviewees last managed

An Outline of key responses are provided:

- Most interviewees named program and project management as two key management roles within their implementations.
- Most interviewees explained that a program was a collection of projects within an ERP implementation. One interviewee explained: *“Program refers to a collection of projects within an ERP implementation, for example a program for Supply chain management may include separate projects for supply network planning at production plants and the financial elements”*

Another explanation was that medium to large companies use the term ‘portfolio management’, which is a collection of projects and programs.

- Most interviewees mentioned program and project managers as key roles on implementations. Others were project champion, team lead and change manager. Interviewees explained that the Sponsor was the number one most significant important as nothing could happen without them. Some concern was raised that there was a misunderstanding of the project manager role – that it was seen simply as a coordinator role and less was understood of the intricacies and challenges of driving the team, the plans and activities forward.
- Three of the six managers had been working on a project which was in a different country from their normal residence, including a manager from the U.K. running an implementation in Italy; a manager in Canada running an implementation in the U.S. and another manager from Stockholm, Sweden running an implementation in another city, Gothenburg in Sweden.
- In judging size, the overwhelming response was cost/budget; and one response indicated that implementations which cost greater than 2 million Euros were classed as Large. Others included:
 - Scope covered by implementation
 - Size of the implementation team

- Length of the implementation

2. Client Satisfaction and Manager Effectiveness criteria

Responses in relation to criteria upon which client satisfaction and managers' effectiveness may be measured are summarised:

- A variety of responses were provided, of which the recurring criteria included the usual Time, Cost and Quality. However, the use of communication and gaining the trust of the team as well as stakeholders ranked high. Other factors included:
 - Ability to maintain project plan and meet milestones
 - Budget management and forecasts
 - Managing scope creep
 - Leadership abilities
 - Inspire the team
 - Take responsibility when things go bad
 - Resourcing effectively for tasks and activities.
 - Clearly define tasks
 - Be able to take decisions
 - Reliable and trustworthy
 - Connect to people and build relationships
 - Gain trust of people (team members and stakeholders)
 - Find counter-measures and influence risks
 - Ability to organise and plan
 - The technical understanding of the implementation is not so important
 - Discipline is important
 - Progress against plan
 - Monitoring Quality
 - Understand customer requirements and know which is most important
 - Understand steering committee and their expectations
 - Good communication to implementation team and teams from organisation's side
 - Planning and tracking milestones and stages
 - Make it easy for progress to be shown (by using right tools e.g. Excel, MS Project)
 - Skilful consultants
 - Knowledge of the Application will help in communicating to customers
 - Key objectives and requirements must be clearly articulated
 - Scope management (delivering critical needs)

- Matching outcome with what was set out in Project Charter
- People skills are important

One response likened the role of the manager to that of a football coach.

“Ensure to understand each resource and their capability. Management is mostly about people and relationship management. There is too much focus on numbers instead of soft-skills. If managed well, skilled people will do their job anyway and some will go the extra mile, where a good relationship exists with manager”

- Drawing from the responses, the key themes are:
 - Resourcing a capable team
 - People skills – communication and relationship building
 - Planning and Monitoring
 - Having leadership capabilities
 - Inspiring and motivating the team
 - Over-arching is ROI

Furthermore, it was felt that lack of Application knowledge may lead to managers underestimating the complexity of an implementation which detrimental effects on the implementation. Another issue noted was in the hiring of skilled resources.

Respondents explained that there are different competencies required by managers at different stages of the implementation. The key stages of the implementation which were addressed were the beginning (Project Preparation), the Realisation (construction of solution) and Go Live (end of implementation). The following were the general responses regarding stages of an implementation:

Project Preparation Stage

- More analytical exercise to understand requirements
- Make a good impression
- Demonstrate the quality to be able to bring everyone onboard

At planning stage, assess risks (a good manager must be good at forecasting and anticipating risks)

Realisation Stage

- Deal with people issues and challenges
- Deal with problems pragmatically
- Track implementation plan and milestones
- Task management
- Assign right people to the right jobs
- Identify, Mitigate and if necessary, get client sign-off on it.
- Classify difficult and easy tasks
- Focus on Test plan. Follow schedule and ensure no slippage during business acceptance testing

Final phase

- Users satisfaction
- Budget
- Quality
- Time
- Continue realisation activities
- Make sure the installation will fit in the environment
- Process Management and crisis management
- KPIs are used to measure after Go Live

It was felt that Different parties will perceive effective management differently and that a manager may be perceived as effective even if project is not successful as long as they identify and foresee risks within their remit and handle them right way

3. ERP Managers' Leadership Competences

In relation to ERP Managers' competences, responses included:

- Managers described Trust as an important factor. One manager said, "If Trust is built within the team, no need for micro-managing. The implementation team usually know details of their work better than the manager, therefore, all that can be done is to build trust"
- Another manager said, "Surround yourself with an implementation team of good (skilled and personable) people"
- One manager expressed the need to hold the clients' hand, as they usually have very little knowledge of SAP, the application used.
- A manager managing a global implementation pointed out the virtual nature of most ERP implementations, as most implementations would usually have the technical development outsourced to an Indian counter-party. He explained that, "*In a global team a project manager can really bring the picture together, as team are spread to different locations.*"
- He also stressed the importance of communication during conference calls as well as ability to articulate, as there is no whiteboard to draw out ideas on.
- Culture came up as a top issue a manager needs to deal with. They explained that not everyone on their team is proficient in English, hence the need to be able to understand different 'people' and cultures. This became more important when managing an implementation in a different country or when there are individuals from other countries on the team.
- One manager mentioned that the demands of the client was a major determinant as to how they carry out their work. They explained that some clients preferred long update sessions and wanted to be very involved, while others preferred very short and infrequent meetings.
- Regarding leadership style, one manager talked about investing time to understanding each member of the team. He said "I use a mixture of approaches depending on each member of the team. Managing an ERP implementation is like managing a Football team, as one must know strength and weaknesses of each member (not same as micro managing, just paying attention to skills and abilities). Chain is only as strong as the weakest link." They believed it was necessary to create Trust and to motivate team to give 100%.

- However, it was also noted that developing the team is usually not within the manager's remit, as they usually work in a matrix structure, where they are not line managers and do not carry the responsibility to develop the members.
- A manager from Sweden explained that they did not manage team members per se, only the team leads. They regarded having very good team leads as key to successful management.
- From a stakeholder perspective, expectation management was said to be key. Also, the inherent virtual working was a major context that required management, as there is less opportunity to socialise and physically interact. They said, "Address nuances of working in a virtual environment, i.e. not seeing facial reactions of people over the phone and other things"

Regarding the important characteristics of a manager, the following received unanimous top ratings:

- Critical analysis and judgment
- Engaging communication
- Self-awareness
- Empowering
- Emotional resilience
- Motivation
- Influence
- Intuitiveness

4. ERP Implementation context

Some of the issues identified as affecting the implementation from an External perspective included:

- Difficult individuals (from external partners)
- Difficult clients
- Personnel changes (external)
- Issues with Vendors and suppliers
- Culture of the organisation
- Criticality of the implementation. How important it is, drives the pressure placed upon the manager
- Corporate problems affecting implementation

- Budgetary issues from client
 - Change of CIO or Sponsor
 - Company goes bankrupt
 - Unrealistic schedules
 - Resources assigned by parent company but only for 30% of time, so not fully committed
-
- Outside the parent organisation, the following were identified by interviewees as potential threats:
 - Hurricanes and natural disasters
 - Government regulations
 - Problems with authorities
 - Client acquisition during implementation
 - Infrastructure being organised by customer

 - The unanimous response regarding managers' handling of issues identified under this section was – Managers need to continuously identify risks. The continuous identification of risks was deemed highly important and very much part and parcel of the manager's role. The responses included:
 - Manager can only identify risks and report
 - Understand Mitigation actions

 - Moreover, the need for due diligence on the implementing company was stressed, to ensure the organisation is in good standing before accepting the role to manage an implementation. The manager said, "Understand customer history and any risks early on – carry out due diligence before taking on the implementation"

5. Final comments from practitioners about the top competences upon which a manager is perceived to be effective and any other comments on ERP implementation context.

Numerous suggestions were provided on the topic, of which the major themes were:

- Self-awareness
- Planning and Monitoring activities
- Basic Application knowledge

- Recruit the right resources (skilled resources)
- Trust and Commitment from team
- Educate customer on the application
- Hold customers hands through process
- Well organised
- Be a natural leader – have good leadership qualities
- Need to communicate
- Motivate team
- Not important to be one of the lads

More specifically, key comments were recorded from the interviewees as listed below:

- According to a manager, *“Number one is ability to communicate and build a good relationship with internal and external team and stakeholders”*
- One manager interpreted effectiveness as how well does actual match the plan. Another explained that *“Effectiveness is about delivering the requirement to specified time – hitting the milestones regularly”*
- According to one manager, “ERP is different from other IT implementations as it addresses so many aspects of an enterprise. Not only in one area, but many areas and therefore makes implementation complex, with so many different competences required from customers and consultants.”
- Other comments highlighted:
 - Self-awareness
 - Vision and creativity
 - Being accountable (monitoring project planning, tracking milestones, risks and usual project manager requirements)
 - Number 1 is ability to communicate and build a good relationship with internal and external team and stakeholders
 - PM methodology is expected, therefore not a factor, unless it is not available
 - Number 1 thing is Well defined tasks and to deliver to time as promised
 - React quickly with clear answers and follow-ups
 - Not enough to be charismatic. Effectiveness is about delivering the requirement to specified time – hitting the milestones regularly
 - Social interactions is good but not key criteria
 - Well organised
 - Be a natural leader – have good leadership qualities
 - Need to communicate
 - Motivate team
 - Not important to be one of the lads
 - Planning activities
 - Monitoring activities
 - Basic Application knowledge

- Challenge team leads
- Recruit the right resources (skilled resources)
- Trust and Commitment from team
- Educate customer on the application
- Hold customers hands through process
- ERP is different from other IT implementations as it addresses so many aspects of an enterprise. Not only in one area, but many areas and therefore makes implementation complex, with so many different competences required from customers and consultants.

Section 2 – Interview Data Analysis

ERP Managers' Capabilities

Table 1 shows the codes developed for ERP Managers' capabilities for each of the six interviews. The interview data revealed a long list of potential competences required of a manager to implement ERP. Codes derived are presented in Table 1.

Table 1: Codes of ERP managers' capabilities from the interviews

Interviewee #	Comments coded
1 Project Manager Coca Cola USA	Leadership, Inspire team, Take responsibility, Understand Resources, Gain Trust, Build Trust, Know each team member, Motivate team
2 Project Manger SAP Canada	Monitor Quality, Resource effectively, Manage Time, Quality, Cost
3 Program Manager UK	Clearly defined tasks, Take decisions, Reliability and Trustworthiness, Build relationships, Gain Trust of people, Identify risks and find counter-measures, Empower team members
4 Project Manager Germany	Organise and plan, Be disciplined, Planning & Monitoring, Manage Time, Quality, Budget, Risk and Issue management
5 Project Manager Sweden	Understand requirements, know the most important requirements, recruit skilled consultants, have application knowledge, Manage Scope, Have confidence in Team leads

6 Program/Project manager Canada	Scope management, Time, Budget, Quality, have good people skills, recruit skilled resources, have ability for virtual interaction in a globally dispersed team, mitigate language barriers, Empower Team
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Source: Author's pilot interviews

Perceived Client Satisfaction

Table 2 shows the codes developed for Perceived client satisfaction for each of the six interviews. The interview data revealed that perceived client satisfaction is principally about 'planning' and 'stakeholder management', followed by 'monitoring and controlling time' and then 'team selection'. Before coding, risk identification and management had appeared 12 times in the raw data, implying the importance of this element. Codes derived are presented in Table 2.

Table 2: Codes of client satisfaction criteria from the interviews

Interviewee #	Comments coded
1 Project Manager Coca Cola USA	Planning & monitoring, Managing scope, Leadership, Take responsibility, Manage Risks
2 Project Manger SAP Canada	Resource effectively, Manage Time, Quality, Cost, Deliver critical requirements
3 Program Manager UK	Reliability and Trustworthiness, Build relationships, Gain Trust of people, Identify Risks and find counter-measures
4 Project Manager Germany	Planning & Monitoring, Manage Time, Quality, Budget, Risk and Issue management
5 Project Manager Sweden	manage steering committee expectations, provide good communication to team and stakeholders, Planning & Monitoring, use a good tool to display progress, hold customers' hands, Manage Scope, Challenge client to help where required
6 Program/Project manager Canada	Understand project charter set out, ensure key objectives clearly articulated, Scope management, Time, Budget, Quality, have good people skills, Proactive risk management, planning & monitoring progress, Manage expectations

Source: Author's pilot interviews

ERP Implementation Context

The general response in this area was limited as shown in Table 3. It is presumed that there are only specific (though potentially major and highly complex) factors that challenge the manager's competences in attaining client satisfaction.

Table 3: Codes of ERP Context criteria from the interviews

Interviewee #	Comments coded
1 Project Manager Coca Cola USA	Difficult clients, Issues with vendors and suppliers, Corporate issues affecting implementation, Budgetary issues from client
2 Project Manger SAP Canada	Changing CIO or Sponsor, Company going bankrupt, Hurricanes & Natural disasters
3 Program Manager UK	Stakeholders, Unrealistic schedules from clients, Resource assigned by client only available 30% of time
4 Project Manager Germany	Culture – Developers in India difficult to understand, Government regulations
5 Project Manager Sweden	Client's organisational culture, Acquisitions, Client organising infrastructure themselves
6 Program/Project manager Canada	Culture, Language issues, Globalisation of projects

Source: Author's pilot interviews

Appendix B – The Questionnaire

Information and Consent Form

The questionnaire asks about the nature and context of ERP (Enterprise Resource Planning) project and program implementations as well as effectiveness measures for managers viz. client satisfaction. It also assesses your leadership behavior so we can match your leadership to the type of implementations you manage and the nature of the implementations.

Confidentiality

The survey is anonymous and no reference will be made to names of organizations in future reports. Information obtained from you will be held in strict confidence. All data will be stored in a secure place and destroyed on completion of the project. The overall summary of the results will be sent to you if you indicate at the end of the questionnaire that you wish to see them.

This questionnaire has been reviewed and approved as meeting Henley Business School's Management Ethics requirements.

The Questionnaire:

The first part of this questionnaire is an adaptation of the work by Shao (2010), part of a doctoral research project to investigate the leadership styles of program managers and how it contributes to success on different types of programs. It is built on the work of Prof. Rodney Turner and Dr. Ralf Müller which showed that project managers need to exhibit different leadership styles on different types of project. The second part is based on a leadership questionnaire devised by Professors Victor Dulewicz and Malcolm Higgs to assess leadership competencies and performance.

You have to click on the 'Next' button below to start the questionnaire. This action will signify your consent to taking part in this survey. Of course, your participation is voluntary and you may quit at any time. It should take around 15 - 20 minutes in total to complete. Note that if you may complete this questionnaire either on your mobile handset or on a computer and if you keep the page open, you may be able to carry on where you left off.

Thank you very much for your help.

Segun Adu
Research Associate
Henley Business School

Section A: Implementation Type

The following questions ask about the types of ERP implementations you manage.

1. In my last implementation, the ERP or similar product implemented (e.g. Oracle, SAP, ...) was:

2. My last implementation was:

(select one based on your organization's view of the project size)

- Large
- Medium
- Small

3. The number of months my last implementation took was (please specify a number):

Section B: Nature of the Implementation Context

The following questions (B1 - B16) ask about the nature and context of your last implementation

Rate to what extent the following were a problem on the implementation...

	Not at all	To a small extent	To a moderate extent	To a large extent	To a very large extent
1. system and infrastructure availability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. difficult client	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. vendor and supplier issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. corporate issues (e.g. change of sponsor, budgetary amendments, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. scope creep	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. off-shore resource issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How do you rate the ...

	not at all	to a small extent	to a moderate extent	to a large extent	to a very large extent
7. support from top management for your implementation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. extent to which you got the human resources needed for your implementation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. extent to which you got the funding needed for your implementation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. extent to which the systems and infrastructure were readily available when needed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. extent to which the system was accepted by the individuals in the client organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Regarding culture (manifestations of behaviors, norms, beliefs and values), rate the extent to which your effectiveness was constrained by...

	not at all	to a small extent	to a moderate extent	to a large extent	to a very large extent
12. the client organization's culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. your own team's culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. your parent company's culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. the culture of the country of implementation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. the culture of the off-shore team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Section C: Perceived Manager Effectiveness

The following questions ask about how successful your last implementation was

During your last implementation, to what extent were you effective at...

	not at all	to a small extent	to a moderate extent	to a large extent	to a very large extent
1. planning and monitoring (Time)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. planning and monitoring (Cost)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. planning and monitoring (Quality)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. planning and monitoring (Scope)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. identifying risks and finding counter-measures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. resourcing adequately skilled team-members	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. using relevant software applications for planning (e.g. MS Project, Excel, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For the following questions (C8 - C25), please indicate your level of agreement:

Please give your opinion on your impact on stakeholders

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
8. My implementation met the users' specifications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. The customer was satisfied with my work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Users were satisfied with my work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
11. Sponsors were satisfied with my work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. I had a very good relationship with senior management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Senior management received timely updates from me when expected	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please give your opinion on your relationship with peers and team members during implementation

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
14. I had a good relationship with my peers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. My peers and team members readily supported me in achieving project goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. I had adequate respect from my peers and team members	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. My team found me very reliable and trustworthy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. My team and I worked in a satisfactory atmosphere	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. The use of the off-shore team created a significant management overhead for me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. The off-shore team were more difficult to communicate with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please give your opinion on your effectiveness on the implementation stages (if you have not managed an implementation stage, rate 0)

	0	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
21. Project Preparation - I was effective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Blueprint - I was effective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Realization - I was effective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Final Preparation - I was effective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Go-Live and Support - I was effective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section D: Open-ended questions on your performance and impact

In terms of your performance on your last project, please describe...

1. The top issues which challenged you the most on your implementation

Section E: Your behaviour at work

The following questions ask about your style of working. Please answer the questions relating to your **behaviour at work**. Do not spend too long thinking about each item - give the first, natural answer that occurs to you. But at the same time, do not rush your responses or respond without giving due consideration to each item. Be honest and truthful with yourself and do not just say what you think sounds good and acceptable. **Do not miss any items even if the questions are difficult.**

	Never (or virtually never)	Seldom	Sometimes	Usually	Always (or virtually always)
1. It is possible to control my own moods	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I find it easy to adjust to new situations and circumstances	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I produce high levels of contribution to projects and tasks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I take account of the feelings of others when making a decision	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I do not find it easy to establish rapport with external contacts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I am able to make judgments based on incomplete information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I know what my feelings are	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. My performance remains constant when under pressure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. In the face of opposition, I am uncomfortable when pressing my case	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Others tend to listen and take account of my observations and comments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Never (or virtually never)	Seldom	Sometimes	Usually	Always (or virtually always)
11. I adhere to prevailing ethical norms in my business decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. I am able to take charge of situations and have my leadership accepted	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. I allow my feelings to influence my decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. I make a quick and positive impact on others when meeting them initially	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. In dealing with problems and decisions, I take account of the needs of others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. I do not find it easy to establish the support of colleagues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. I am able to be forceful in dealing with others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. I am aware of my own moods when dealing with work problems and issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. When I am under pressure, others do notice changes in my <u>behavior</u>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Others respond positively to my views on overall direction and goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Never (or virtually never)	Seldom	Sometimes	Usually	Always (or virtually always)
21. I am receptive to ideas and suggestions from the people I work with	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. I am effective in building team commitment to goals and objectives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Others accept my personal commitment to a decision or course of action	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. I feel so overwhelmed by my own moods that I cannot function properly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. I am able to adapt my behavior to a range of different situations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. I have a backlog of projects or contributions to deliver	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. When working with a group, I make an effort to build agreement to goals and overall direction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. In difficult situations others do not tend to change their views to support my viewpoint	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. I feel insight should be avoided in making successful decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. I find it difficult to maintain performance when faced with disappointment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. I set high, stretching goals for others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Never (or virtually never)	Seldom	Sometimes	Usually	Always (or virtually always)
32. Before making decisions, I take account of the input received after discussions with others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. I do not have difficulty in persuading others to change their viewpoint	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. I adhere to the norms of behavior prevailing in my organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. I have a positive outlook on life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. I am able to accept average performance from my team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. When faced with resistance, I find it difficult to persuade others to change their position	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. I am happy to make decisions or take action on the basis of incomplete information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. I feel so overwhelmed by my own feelings that I cannot function properly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. When faced with unfair criticism, I find it difficult to remain focused on the task	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Never (or virtually never)	Seldom	Sometimes	Usually	Always (or virtually always)
51. When under pressure I tend to become irritable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
52. I have a sufficient level of energy to ensure the completion of tasks and projects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
53. I gain the understanding of others to the need for a course of action	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
54. When others have a different view to mine, I do not consciously attempt to influence them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
55. I feel out of control emotionally	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
56. I am effective in a range of situations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
57. I am unwilling to modify my behavior or decisions in the light of the reactions of others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
58. I am uncomfortable when having to make decisions based on intuition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
59. My commitment to a decision and course of action is critical to success	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
60. I encourage subordinates to work together as a team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Never (or virtually never)	Seldom	Sometimes	Usually	Always (or virtually always)
61. I am happy to make decisions or take action on the basis of questionably valid information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
62. I adhere to expected standards of personal conduct	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
63. When faced with complex decisions, I balance with intuition or 'gut feeling'	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
64. At work I ensure that 'what I say and what I do' are the same	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
65. When making a decision, I ignore my feelings as they only confuse the issue	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
66. I challenge unethical behavior whenever I meet it at work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
67. Decisions I make are based on logic facts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
68. No matter how difficult the problem, I work to find a solution	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
69. I avoid using intuition or 'gut-feeling' when making decisions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
70. I work within the rules and regulations of my organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section F: Leadership and Teamwork

The following questions ask about your leadership and your team. Select the appropriate response for each statement.

	Strongly Disagree	Disagree	Neither Agree <u>or</u> Disagree	Agree	Strongly Agree
1. My team members put in much exceptional effort to achieve their goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. My leadership style improves my team members' capabilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. The work of my project team has a significant impact on the wider organization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. My project team performs highly effectively	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. My leadership style helps to make my project team more flexible	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. The productivity of my project team is extremely high	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. My team members are highly satisfied at work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. The reasons for change are well understood in my team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. My team members show an extremely high level of commitment to the project	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. The team members I lead have realistic expectations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. The need to change is well understood by all project team members	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section G: Demographic Details

Your age (in years, rounded off):

Your gender:

Male

Female

Other


Your position/designation in your parent organization:

Total number of years leading projects (in years, rounded off):

Country of your last ERP implementation:

Appendix C - Exhibit

Letter from PMI

 **PMI UK** <service@pmi.org.uk>
To: segunadu@yahoo.co.uk

 20 Sep 2012 at 11:21 

Segun

This has now gone on our website – there is a link from the home page to the actually info page

<http://www.pmi.org.uk/en/communications/news.cfm/ERPsurvey>

Our next e-link to members will be going out at the end of September and a link will also be included in that.

Hope you get sufficient responses.

Regards

Sandra Newman
PMI UK Chapter

Exhibit 1: Letter from PMI

Appendix D - Factor Analysis Outputs

Appendix D-1a Perceived Client Satisfaction – Reliability Statistics

Table 1: Reliability Statistics for Construct - Impact On Stakeholders: C8 to C13

Reliability Statistics	
Cronbach's Alpha	N of Items
.770	6

Table 2: Item-Total Statistics for Construct - Impact On Stakeholders: C8 to C13

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Impact on users	20.832	5.997	.564	.723
Impact on customer	20.929	5.459	.636	.701
Users satisfied	20.905	5.967	.588	.717
Sponsors satisfied	20.746	5.850	.701	.692
Relationship with senior management	20.648	6.571	.329	.786
Senior management satisfied	20.587	7.024	.312	.781

Table 3: Reliability Statistics for Construct - Impact on Implementation Phases: C21 to C25

Reliability Statistics	
Cronbach's Alpha	N of Items
.735	5

Table 4: Item-Total Statistics for Construct - Impact On Implementation Phases: C21 to C25

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Cronbach's Alpha if Item Deleted
Project preparation effectiveness	16.160	4.220	.336	.754
Blueprint effectiveness	16.111	3.739	.537	.672
Realisation effectiveness	16.105	4.001	.547	.671
Final preparation effectiveness	16.082	3.520	.669	.617
Go live effectiveness	16.033	4.405	.423	.715

Appendix D-1b Perceived Client Satisfaction – Factor Analysis

First iteration outputs

Table 1: Communalities between variables

Communalities		
	Initial	Extraction
Impact on users	1.000	.772
Impact on customer	1.000	.734
Users satisfied	1.000	.754
Sponsors satisfied	1.000	.704
Relationship with senior management	1.000	.709
Senior management satisfied	1.000	.732
Project preparation effectiveness	1.000	.830
Blueprint effectiveness	1.000	.699
Realisation effectiveness	1.000	.876
Final preparation effectiveness	1.000	.850

Extraction Method: Principal Component Analysis.

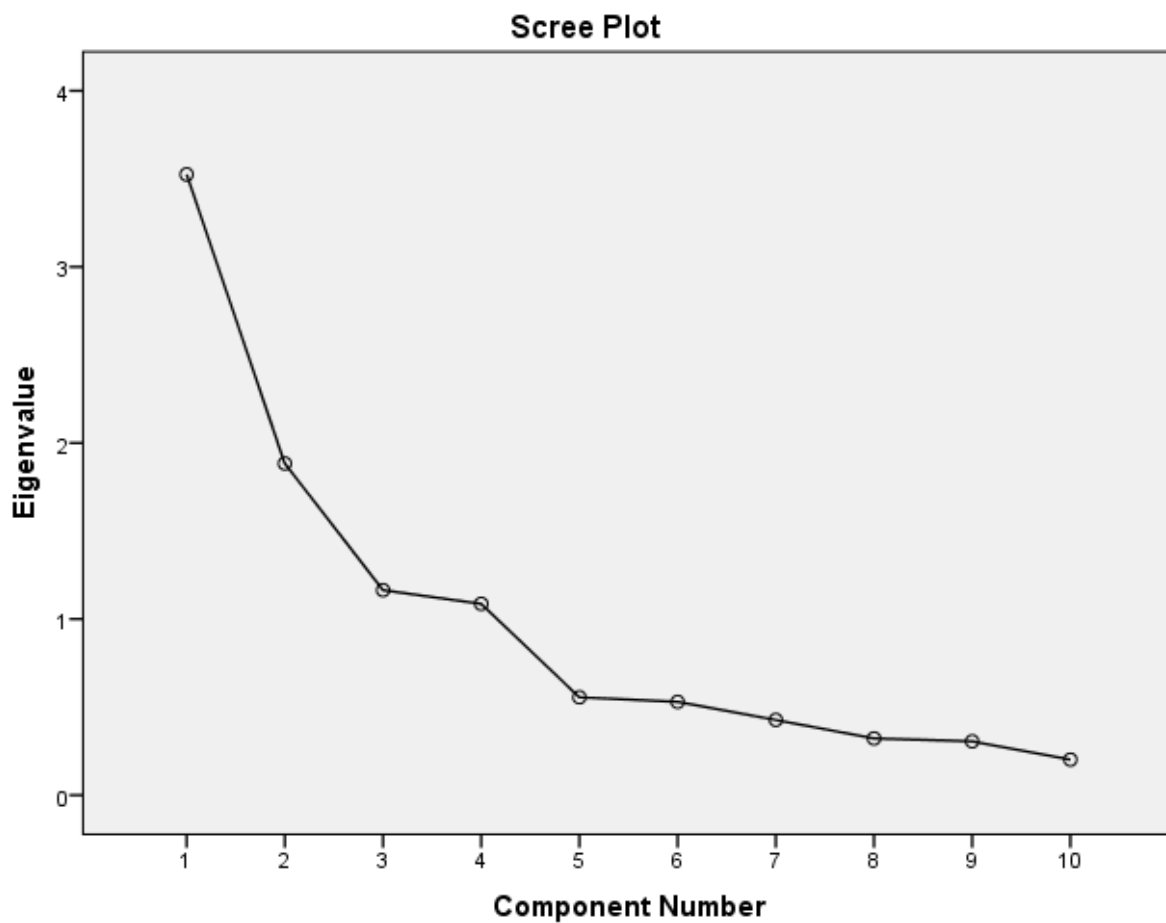


Figure 1: Scree plot

Table 2: Iteration of Factor analysis for Perceived Client Satisfaction

Rotated Component Matrix^a				
	Component			
	1	2	3	4
Impact on users	.863			
Users satisfied	.857			
Impact on customer	.833			
Sponsors satisfied	.631		.517	
Realisation effectiveness		.919		
Final preparation effectiveness		.863		
Senior management satisfied			.821	
Relationship with senior management			.750	
Project preparation effectiveness				.877
Blueprint effectiveness				.681
Go live effectiveness				
Extraction Method: Principal Component Analysis.				
Rotation Method: Varimax with Kaiser Normalization.				
a. Rotation converged in 5 iterations.				

Table 3: Final iteration of Factor analysis for Perceived Client Satisfaction

Rotated Component Matrix^a				
	Component			
	1	2	3	4
Impact on users	.864			
Users satisfied	.858			
Impact on customer	.834			
Sponsors satisfied	.637		.513	
Realisation effectiveness		.921		
Final preparation effectiveness		.866		
Senior management satisfied			.815	
Relationship with senior management			.779	
Project preparation effectiveness				.902
Blueprint effectiveness				.716
Extraction Method: Principal Component Analysis.				
Rotation Method: Varimax with Kaiser Normalization.				
a. Rotation converged in 5 iterations.				

Table 4: Correlation Matrix: Perceived Client Satisfaction variables

Correlation Matrix											
	Impact on users	Impact on customer	Users satisfied	Sponsors satisfied	Relationship with senior management	Senior management satisfied	Project preparation effectiveness	Blueprint effectiveness	Realisation effectiveness	Final preparation effectiveness	Go live effectiveness
Correlation	1.000	.626	.661	.467	.106	.062	.105	.086	.234	.207	.178
	.626	1.000	.593	.545	.199	.195	.016	.090	.135	.102	.225
	.661	.593	1.000	.531	.124	.092	.090	.066	.210	.237	.164
	.467	.545	.531	1.000	.412	.386	.145	.228	.249	.347	.363
	.106	.199	.124	.412	1.000	.407	.109	.182	.303	.371	.070
	.062	.195	.092	.386	.407	1.000	.267	.202	.157	.258	.427
	.105	.016	.090	.145	.109	.267	1.000	.450	.081	.234	.228
	.086	.090	.066	.228	.182	.202	.450	1.000	.384	.430	.241
	.234	.135	.210	.249	.303	.157	.081	.384	1.000	.765	.338
	.207	.102	.237	.347	.371	.258	.234	.430	.765	1.000	.448
	.178	.225	.164	.363	.070	.427	.228	.241	.338	.448	1.000
Sig. (1-tailed)		.000	.000	.000	.170	.289	.173	.219	.017	.030	.054
	.000		.000	.000	.036	.039	.442	.208	.112	.180	.021
	.000	.000	.000	.000	.133	.203	.209	.278	.028	.015	.069
	.170	.036	.133	.000	.000	.000	.096	.019	.012	.001	.000
	.289	.039	.203	.000	.000	.000	.162	.050	.003	.000	.265
	.173	.442	.209	.096	.162	.007	.007	.033	.078	.009	.000
	.219	.208	.278	.019	.050	.033	.000	.000	.233	.017	.019
	.017	.112	.028	.012	.003	.078	.233	.000	.000	.000	.014
	.030	.180	.015	.001	.000	.009	.017	.000	.000	.000	.000
	.054	.021	.069	.000	.265	.000	.019	.014	.001	.000	.000

Table 5: KMO and Bartlett's Test for Perceived Client Satisfaction construct

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.729
Bartlett's Test of Sphericity	Approx. Chi-Square	340.243
	df	55
	Sig.	.000

Table 6: Communalities Statistics for Client Satisfaction Construct

Communalities		
	Initial	Extraction
Impact on users	1.000	.771
Impact on customer	1.000	.735
Users satisfied	1.000	.752
Sponsors satisfied	1.000	.706
Relationship with senior management	1.000	.669
Senior management satisfied	1.000	.776
Project preparation effectiveness	1.000	.777
Blueprint effectiveness	1.000	.639
Realisation effectiveness	1.000	.873
Final preparation effectiveness	1.000	.859
Go live effectiveness	1.000	.410
Extraction Method: Principal Component Analysis.		

Table 7: Total Variance Explained

Component	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.785	34.411	34.411	3.785	34.411	34.411	2.644	24.041	24.041
2	1.925	17.497	51.908	1.925	17.497	51.908	1.999	18.175	42.216
3	1.169	10.625	62.533	1.169	10.625	62.533	1.723	15.661	57.877
4	1.089	9.903	72.435	1.089	9.903	72.435	1.601	14.559	72.435
5	.895	8.135	80.571						
6	.541	4.916	85.487						
7	.433	3.939	89.426						
8	.384	3.489	92.915						
9	.306	2.786	95.701						
10	.278	2.525	98.226						
11	.195	1.774	100.000						

Extraction Method: Principal Component Analysis.

Table 8: Rotated Component Matrix

Rotated Component Matrix ^a				
	Component			
	1	2	3	4
Impact on users	.863			
Users satisfied	.857			
Impact on customer	.833			
Sponsors satisfied	.631		.517	
Realisation effectiveness		.919		
Final preparation effectiveness		.863		
Senior management satisfied			.821	
Relationship with senior management			.750	
Project preparation effectiveness				.877
Blueprint effectiveness				.681
Go live effectiveness				

Appendix D-2a ERP Implementation Context – Reliability Statistics

Table 1: Reliability Statistics for Construct - Project Problems - B1 to B6

Reliability Statistics	
Cronbach's Alpha	N of Items
.744	6

Table 2: Reliability Statistics for Construct - Project Problems - B1 to B6

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
System & infrastructure availability problems	14.334	16.367	.435	.722
Client relationship problems	14.300	17.165	.427	.722
Vendor & Supplier problems	14.456	15.931	.595	.678
Corporate stability problems	14.031	16.541	.463	.713
Scope creep problems	13.616	16.010	.537	.692
Offshore resource-related problems	14.470	16.394	.446	.719

Table 3: Reliability Statistics for Construct - Project Support - B7 to B11

Reliability Statistics	
Cronbach's Alpha	N of Items
.667	5

Table 4: Item-Total Statistics for Construct - Project Support - B7 to B11

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Extent Top management not supportive	10.9494	6.681	.506	.572
Extent Human resource not available	10.5578	8.052	.440	.608
Extent Funding was not provided	10.8880	7.269	.592	.539
Extent Sys & Infra not available	10.6699	7.928	.327	.662
Extent system was not accepted by client	10.7277	9.149	.267	.674

Table 5: Reliability Statistics for Construct - Context Culture B12 to B16

Reliability Statistics	
Cronbach's Alpha	N of Items
.684	5

Table 6: Item-Total Statistics for Construct - Context Culture B12 to B16

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Constraints from Org culture	10.033	10.791	.384	.656
Constraints from Team culture	10.729	9.143	.592	.560
Constraints from Parent company culture	11.019	10.375	.427	.638
Constraints from Country culture	10.831	10.504	.468	.622
Constraints from Offshore team culture	10.880	10.845	.332	.680

Appendix D-2b – ERP Context Factor Analysis outputs

Table 1: Rotated Component Matrix – ERP Implementation Context

Rotated Component Matrix ^a					
	Component				
	1	2	3	4	5
Constraints from Org culture	.746				
Corporate stability problems	.742				
Constraints from team attitudes	.659				
Scope creep problems	.653				
Offshore resource-related problems		.801			
System & infrastructure availability problems		.723			
Constraints from Offshore team culture		.687			
Vendor & Supplier problems	.472	.482			
Extent Human resource not available			.833		
Extent Funding was not provided			.744		
Client relationship problems			.530		
Constraints from Country culture				.797	
Constraints from Parent company culture				.640	
Extent Sys & Infra not available				-.505	
Extent system was not accepted by client					.773
Extent Top management not supportive			.525		.527

Table 2: Scale reliability for ERP implementation context

	Factor	Cronbach's Alpha	Number of items
ERP implementation context	Culture and Scope creep problems	0.756	4
	Ext resources, systems and infra problems	0.692	4
	Lack of client support (Funding, Resource provision & Client rel)	0.609	3
	Cultural issues (National & Company) and lack of Sys & Infra	0.101*	3
	Lack of client support (Top management & Users)	0.402*	2

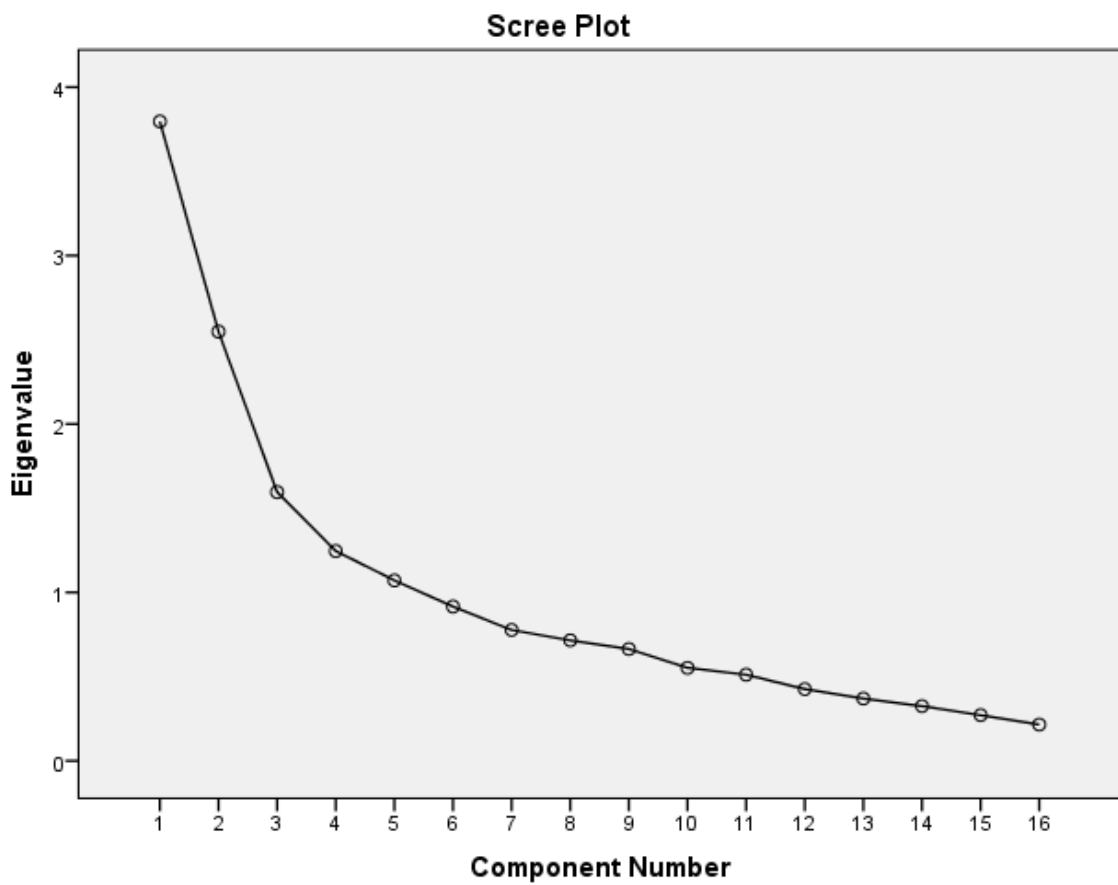


Figure 1: Scree plot for ERP Context

The factor scores for ERP Context were named as shown in **Table 3**.

Table 3: ERP Implementation Context – Rotated Component Matrix

Rotated Component Matrix^a					
	Components				
	F1 Culture and Scope creep problems	F2 Ext resources, systems and infra problems	F3 Lack of client support (Funding, Resource provision & Client rel)	F4 Cultural issues (National & Company) and lack of Sys & Infra	F5 Lack of client support (Top management & Users)
Constraints from Org culture	.746				
Corporate stability problems	.742				
Constraints from Team culture	.659				
Scope creep problems	.653				
Offshore resource-related problems		.801			
System & infrastructure availability problems		.723			
Constraints from Offshore team culture		.687			
Vendor & Supplier problems		.482			
Extent Human resource not available			.833		
Extent Funding was not provided			.744		
Client relationship problems			.530		
Constraints from Country culture				.797	
Constraints from Parent company culture				.640	
Extent Sys & Infra not available				-.505	
Extent system was not accepted by client					.773
Extent Top management not supportive					.527

Table 4: Reliability Statistics for ERP Implementation Context

Reliability Statistics	
Cronbach's Alpha	N of Items
.450	3

Table 5: Item-Total Statistics for ERP Implementation Context

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
System & infra availability issues	4.896	3.492	.161	.546
Constraints from Parent company culture	5.763	2.910	.292	.322
Constraints from Country culture	5.575	2.846	.389	.148

The Item-total statistics results indicate that removal of the item System & Infra availability issues would improve the Cronbach's alpha to .546

After Removing the item System & Infra availability issues factor analysis was again carried out. Afterwards, it was also necessary to remove variable Extent system was not accepted by client. This continued until factor analysis stabilised.

Table 6: Correlation Matrix: ERP Implementation Context variables

Correlation Matrix																
	System & infrastructure availability problems	Client relationship problems	Vendor & Supplier problems	Concrete stability problems	Scope creep problems	Offshore resource-related problems	Extent Top management not supportive	Extent Human resource not available	Extent Funding was not provided	Extent Sys & Infra not available	Extent system accepted by client	Constraints from Org culture	Constraints from Team culture	Constraints from company culture	Constraints from Country culture	Constraints from Offshore team culture
Correlation	1.000	.248	.447	.251	.164	.389	-.064	-.027	.034	.117	.059	-.040	.249	.012	-.017	.248
	Client relationship problems	1.000	.459	.295	.378	.115	.205	.246	.226	.139	.270	.314	.206	.184	.231	.158
	Vendor & Supplier problems	.459	1.000	.297	.459	.311	.018	.050	.137	.199	.082	.265	.234	.169	.131	.170
	Concrete stability problems	.251	.297	1.000	.429	.314	-.047	-.206	-.006	.247	.134	.355	.525	.099	.033	.241
	Scope creep problems	.164	.378	.429	1.000	.388	-.047	.009	.068	.181	.022	.436	.387	.262	.272	.280
	Offshore resource-related problems	.389	.311	.314	.388	1.000	-.150	-.123	-.196	-.058	.025	.060	.327	.084	.106	.593
	Extent Top management not supportive	-.064	.205	.018	-.047	-.150	1.000	.395	.421	.270	.266	.027	-.079	-.001	-.148	-.116
	Extent Human resource not available	-.027	.246	.050	-.206	-.123	.395	1.000	.608	.081	.113	-.068	-.206	-.109	-.062	-.216
	Extent Funding was not provided	.034	.226	.137	-.006	.068	.421	.608	1.000	.349	.146	.059	.003	-.104	-.134	-.091
	Extent Sys & Infra not available	.117	.139	.199	.247	-.058	.270	.081	.349	1.000	.213	.030	.066	-.080	-.192	.008
	Extent system was not accepted by client	.059	.270	.082	.134	.022	.266	.113	.146	.213	1.000	.135	.022	.054	.006	.092
	Constraints from Org culture	-.040	.314	.265	.355	.436	.027	-.068	.059	.030	.135	1.000	.484	.282	.280	.033
	Constraints from Team culture	.249	.206	.234	.525	.387	-.079	-.206	.003	.086	.022	.484	1.000	.349	.309	.410
	Constraints from Parent company culture	.012	.184	.169	.099	.262	-.001	-.109	-.104	-.080	.054	.282	.349	1.000	.377	.185
	Constraints from Country culture	-.017	.231	.131	.033	.272	.108	-.062	-.134	-.192	.006	.280	.309	.377	1.000	.316
	Constraints from Offshore team culture	.248	.158	.170	.241	.280	.583	-.116	-.091	.008	.092	.033	.410	.185	.316	1.000
Sig. (1-tailed)	System & infrastructure availability problems	.012	.000	.011	.069	.000	.284	.405	.379	.147	.289	.369	.012	.457	.438	.012
	Client relationship problems		.000	.003	.000	.150	.031	.012	.020	.105	.007	.002	.031	.048	.018	.078
	Vendor & Supplier problems	.000		.003	.000	.002	.435	.327	.108	.035	.230	.008	.017	.064	.119	.063
	Concrete stability problems	.011	.003		.000	.002	.338	.031	.479	.012	.114	.000	.000	.188	.385	.014
	Scope creep problems	.069	.000	.000		.000	.336	.467	.270	.051	.423	.000	.000	.008	.006	.005
	Offshore resource-related problems	.000	.150	.002	.002		.088	.133	.038	.302	.412	-.296	.001	.226	.165	.000
	Extent Top management not supportive	.284	.031	.435	.338	.088		.800	.000	.007	.008	.405	.238	.495	.002	.149
	Extent Human resource not available	.405	.012	.327	.031	.133	.000		.000	.233	.154	.272	.031	.163	.290	.025
	Extent Funding was not provided	.379	.020	.108	.479	.038	.000	.000		.001	.084	.289	.490	.175	.114	.206
	Extent Sys & Infra not available	.147	.105	.035	.012	.302	.007	.233	.001		.026	.383	.219	.236	.041	.473
	Extent system was not accepted by client	.299	.007	.230	.114	.412	.008	.154	.084	.026		.112	.423	.313	.478	.205
	Constraints from Org culture	.359	.002	.008	.000	.296	.405	.272	.289	.393	.112	.000	.000	.005	.005	.384
	Constraints from Team culture	.012	.031	.017	.000	.001	.238	.031	.490	.219	.423	.000	.001	.001	.002	.000
	Constraints from Parent company culture	.457	.048	.064	.188	.008	.495	.163	.175	.236	.313	.005	.001		.000	.047
	Constraints from Country culture	.438	.018	.119	.385	.006	.092	.290	.114	.041	.478	.005	.002	.000		.002
	Constraints from Offshore team culture	.012	.078	.063	.014	.005	.149	.025	.206	.473	.205	.384	.000	.047	.002	

Table 7: Total Variance Explained

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
	1	3.756	26.826	26.826	3.756	26.826	26.826	2.517	17.975
2	2.275	16.247	43.073	2.275	16.247	43.073	2.240	15.997	33.972
3	1.555	11.107	54.179	1.555	11.107	54.179	2.232	15.942	49.914
4	1.130	8.073	62.252	1.130	8.073	62.252	1.727	12.338	62.252
5	.950	6.788	69.040						
6	.776	5.542	74.583						
7	.679	4.849	79.432						
8	.633	4.519	83.951						
9	.514	3.674	87.625						
10	.461	3.289	90.915						
11	.421	3.004	93.919						
12	.352	2.513	96.432						
13	.283	2.024	98.456						
14	.216	1.544	100.000						

Extraction Method: Principal Component Analysis.

Table 8: Rotated Component Matrix

Rotated Component Matrix ^a				
	Component			
	Org Change Problems	External Partnerships Problems	Resource Availability Problems	Cultural Problems
Constraints from Org culture	.780			
Corporate stability problems	.773			
Constraints from team attitudes	.654			
Scope creep problems	.605			
Offshore resource-related problems		.787		
System & infrastructure availability problems		.731		
Constraints from Offshore team culture		.675		
Vendor & Supplier problems		.508		
Extent Human resource not available			.832	
Extent Funding was not provided			.798	
Extent Top management not supportive			.662	
Client relationship problems			.499	
Constraints from Country culture				.836
Constraints from Parent company culture				.693

Table 9: Scale reliability for ERP implementation context

	Factor	Cronbach's Alpha	Number of items
ERP implementation context	Org Change Problems	0.756	4
	External Partnerships Problems	0.692	4
	Resource Availability Problems	0.667	4
	Cultural Problems	0.546	2

Table 10: KMO and Bartlett's Test for ERP implementation context

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.698
Bartlett's Test of Sphericity	Approx. Chi-Square	389.516
	df	120
	Sig.	.000

Table 11: Communalities check for ERP implementation context

Communalities		
	Initial	Extraction
System & infrastructure availability problems	1.000	.611
Client relationship problems	1.000	.571
Vendor & Supplier problems	1.000	.649
Corporate stability problems	1.000	.696
Scope creep problems	1.000	.608
Offshore resource-related problems	1.000	.700
Extent Top management not supportive	1.000	.588
Extent Human resource not available	1.000	.745
Extent Funding was not provided	1.000	.645
Extent Sys & Infra not available	1.000	.594
Extent system was not accepted by client	1.000	.629
Constraints from Org culture	1.000	.704
Constraints from Team attitudes	1.000	.618
Constraints from Parent company culture	1.000	.503
Constraints from Country culture	1.000	.668
Constraints from Offshore team culture	1.000	.729
Extraction Method: Principal Component Analysis.		

Appendix D-3a – Managers ERP Leadership Competences (Management Capability factors)

Table 1. Reliability Statistics for Implementation Efficiency: C1 to C7

Reliability Statistics	
Cronbach's Alpha	N of Items
.720	7

Table 2. Item-Total Statistics for Implementation Efficiency: C1 to C7

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Time management	21.725	9.311	.610	.639
Cost management	21.921	10.159	.470	.677
Quality management	21.700	9.815	.522	.663
Scope management	21.934	10.641	.337	.712
Risk management	21.688	11.679	.306	.713
Effectiveness resourcing quality individuals	21.933	10.154	.448	.683
Effectiveness using relevant tools	21.473	11.104	.319	.713

Table 3. Reliability Statistics for Impact on Implementation Team: C14 to C20

Reliability Statistics	
Cronbach's Alpha	N of Items
.770	7

Table 4. Item-Total Statistics for Impact on Implementation Team: C14 to C20

Item-Total Statistics				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Relationship with peers	22.3477	11.662	.587	.731
Peer & team support	22.5667	10.681	.628	.714
Peer & team respect	22.3600	11.461	.550	.733
Teams trust	22.3887	12.033	.502	.745
Working atmosphere was satisfactory	22.6651	11.366	.401	.760
Rev Offshore management C19	24.0863	9.670	.520	.740
Rev Communication with offshore team C20	24.1586	10.286	.426	.765

Table 5: Rotated Component Matrix for Impact on Implementation Team: C14 to C20

	Rotated Component Matrix ^a			
		Component		
	1	2	3	4
Relationship with peers	.867			
Peer & team respect	.833			
Peer & team support	.805			
Teams trust	.718			
Effectiveness using relevant tools		.826		
Effectiveness resourcing quality individuals		.650		
Quality management		.586		
Working atmosphere was satisfactory		.498		
Cost management			.734	
Time management			.730	
Risk management			.666	
Scope management				
Rev Offshore management C19				.887
Rev Communication with offshore team C20				.881

Appendix D-3b – Managers Competences (Management Capability factors)

Table 1: Rotated Component Matrix for Management Capability factors

Rotated Component Matrix^a				
	Component			
	1	2	3	4
Relationship with peers	.881			
Peer & team respect	.832			
Peer & team support	.790			
Teams trust	.736			
Effectiveness using relevant tools		.820		
Effectiveness resourcing quality individuals		.648		
Quality management		.575		
Working atmosphere was satisfactory		.527		
Risk management			.723	
Time management			.719	
Cost management			.712	
Rev Offshore management C19				.898
Rev Communication with offshore team C20				.872
Extraction Method: Principal Component Analysis.				
Rotation Method: Varimax with Kaiser Normalization.				
a. Rotation converged in 5 iterations.				

Table 2: Correlation Matrix: Management Capability variables

Correlation Matrix													
	Time management	Cost management	Quality management	Risk management	Effectiveness resourcing quality individuals	Effectiveness using relevant tools	Relationship with peers	Peers & team support	Peers & team respect	Teams trust	Working atmosphere was satisfactory	Rev Offshore management C19	Rev Communication with offshore team C20
Correlation	1.000	.565	.506	.301	.260	.218	.071	.230	.254	.273	.381	.156	.170
	Cost management	.565	.249	.258	.170	.224	-.027	.043	.109	.230	.342	.173	.225
	Quality management	.249	1.000	.238	.419	.304	.212	.263	.243	.200	.276	.185	.264
	Risk management	.258	.238	1.000	.245	-.018	.089	.087	.205	.173	.049	.206	.029
	Effectiveness resourcing quality individuals	.170	.419	.245	1.000	.344	.185	.326	.234	.262	.444	.234	.172
	Effectiveness using relevant tools	.224	.304	.206	.344	1.000	.063	.042	.011	.008	.200	-.212	.064
	Relationship with peers	-.027	.212	.089	.185	.063	1.000	.716	.635	.578	.297	.215	.171
	Peers & team support	.043	.263	.087	.326	.042	.716	1.000	.619	.418	.374	.328	.248
	Peers & team respect	.109	.243	.205	.234	.011	.635	.619	1.000	.587	.266	.214	.174
	Teams trust	.230	.200	.173	.262	.008	.578	.418	.587	1.000	.358	.191	.141
	Working atmosphere was satisfactory	.342	.276	.049	.444	.200	.297	.374	.266	.358	1.000	.289	.158
	Rev Offshore management C19	.173	.185	.206	.234	-.212	.215	.328	.214	.191	.289	1.000	.667
	Rev Communication with offshore team C20	.225	.264	.029	.172	.064	.171	.248	.174	.141	.158	.667	1.000
Sig. (1-tailed)	Time management	.000	.000	.003	.009	.024	.262	.018	.010	.006	.000	.080	.062
	Cost management	.000	.012	.009	.063	.021	.404	.349	.163	.018	.001	.059	.021
	Quality management	.000	.012	.015	.000	.003	.027	.008	.013	.035	.006	.047	.008
	Risk management	.003	.009	.015	.013	.435	.213	.218	.031	.059	.331	.031	.396
	Effectiveness resourcing quality individuals	.009	.063	.000	.013	.001	.047	.001	.017	.008	.000	.017	.060
	Effectiveness using relevant tools	.024	.021	.003	.435	.001	.285	.352	.460	.470	.035	.027	.281
	Relationship with peers	.262	.404	.027	.213	.047	.285	.000	.000	.000	.003	.025	.061
	Peers & team support	.018	.349	.008	.218	.001	.352	.000	.000	.000	.000	.001	.012
	Peers & team respect	.010	.163	.013	.031	.017	.460	.000	.000	.000	.007	.026	.058
	Teams trust	.006	.018	.035	.059	.008	.470	.000	.000	.000	.000	.042	.102
	Working atmosphere was satisfactory	.000	.001	.006	.331	.000	.035	.000	.007	.000	.004	.004	.077
	Rev Offshore management C19	.080	.059	.047	.031	.017	.027	.001	.026	.042	.004	.000	.000
	Rev Communication with offshore team C20	.062	.021	.008	.396	.060	.281	.012	.058	.102	.077	.000	.000

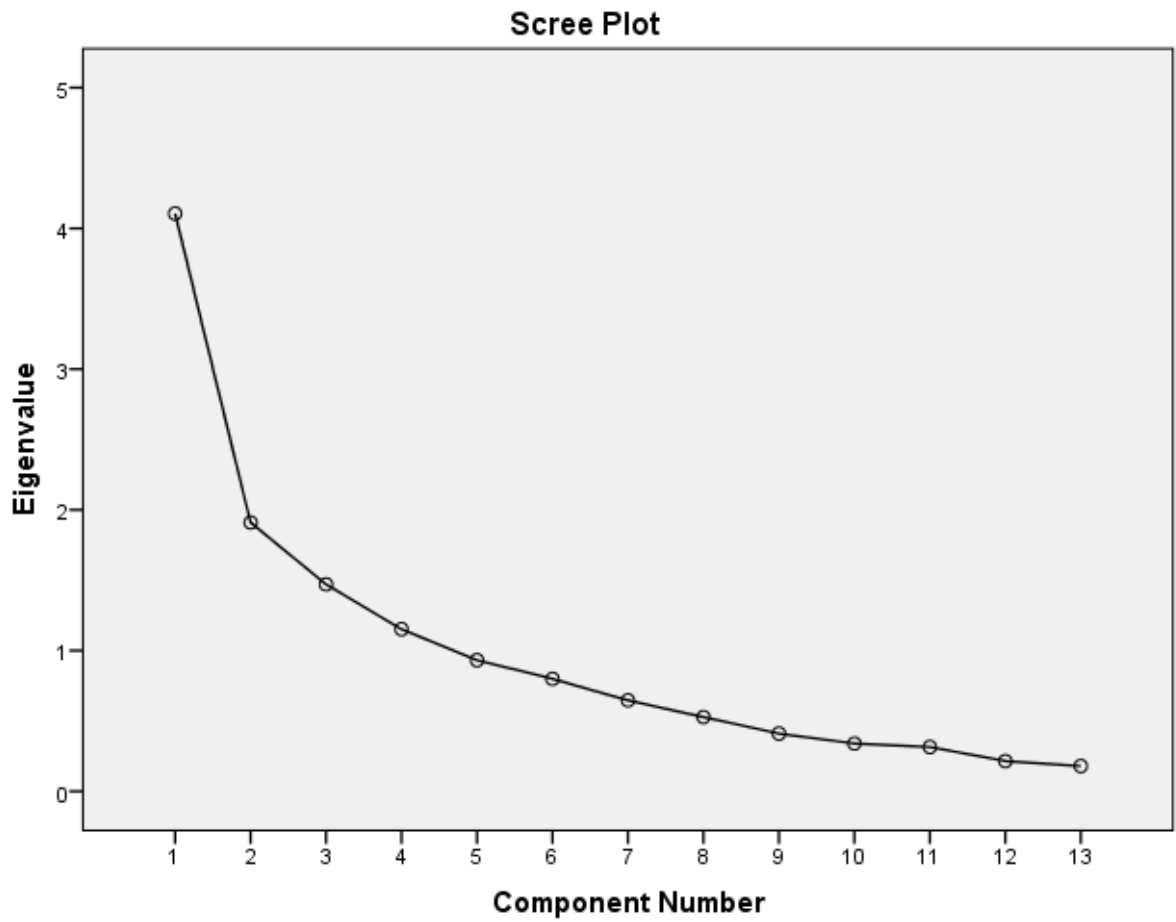


Figure 1: Scree plot – Management Capability variables

Table 3: KMO and Bartlett’s Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.694
Bartlett's Test of Sphericity	Approx. Chi-Square	397.245
	df	78
	Sig.	.000

Table 4: Communalities

Communalities		
	Initial	Extraction
Time management	1.000	.693
Cost management	1.000	.617
Quality management	1.000	.505
Risk management	1.000	.558
Effectiveness resourcing quality individuals	1.000	.520
Effectiveness using relevant tools	1.000	.723
Relationship with peers	1.000	.805
Peer & team support	1.000	.730
Peer & team respect	1.000	.730
Teams trust	1.000	.625
Working atmosphere was satisfactory	1.000	.466
Rev Offshore management C19	1.000	.870
Rev Communication with offshore team C20	1.000	.795
Extraction Method: Principial Component Analysis.		

Table 5: Descriptive statistics for Management Capability variables

Descriptive Statistics								
	N	Range	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic
Time management	83	4.0	1.0	5.0	3.671	0.9114	-0.377	-0.113
Cost management	83	3.0	2.0	5.0	3.475	0.8727	-0.091	-0.638
Quality management	83	3.0	2.0	5.0	3.695	0.8929	-0.296	-0.569
Scope management	83	4.0	1.0	5.0	3.462	0.9266	-0.215	-0.418
Risk management	83	3.0	2.0	5.0	3.708	0.6715	0.185	-0.423
Effectiveness resourcing quality individuals	83	4.0	1.0	5.0	3.463	0.8998	-0.144	-0.264
Effectiveness using relevant tools	83	4.0	1.0	5.0	3.922	0.8234	-0.784	1.200
Relationship with Peer	83	2.0	3.0	5.0	4.414	0.6039	-0.512	-0.575
Peer & team support	83	3.0	2.0	5.0	4.195	0.7721	-0.686	0.005
Peer & team respect	83	3.0	2.0	5.0	4.402	0.6782	-0.956	0.770
Teams trust	83	2.0	3.0	5.0	4.373	0.5922	-0.387	-0.556
Working atmosphere was satisfactory	83	3.0	2.0	5.0	4.097	0.8640	-0.657	-0.295
Managing offshore team	83	4.0	1.0	5.0	3.323	1.1019	-0.570	-0.303
Communication with offshore team	83	4.0	1.0	5.0	3.397	1.0889	-0.628	-0.209
Valid N (listwise)	83							

Table 6: Correlation Matrix: Management Capability variables

Correlation Matrix

Correlation	Time management	Cost management	Quality management	Scope management	Risk management	Effectiveness resourcing quality individuals	Effectiveness using relevant tools	Relationship with peers	Peers & team support	Peers & team respect	Teams trust	Working atmosphere was satisfactory	Rev Offshore management C19	Rev Communication with offshore team C20
Time management	1.000	.565	.506	.325	.301	.260	.218	.071	.230	.254	.273	.381	.156	.170
Cost management	.565	1.000	.249	.270	.258	.170	.224	-.027	.043	.109	.230	.342	.173	.225
Quality management	.506	.249	1.000	.186	.238	.419	.304	.212	.263	.243	.200	.276	.185	.264
Scope management	.325	.270	.186	1.000	.140	.240	.110	.180	.385	.382	.173	.309	.203	.034
Risk management	.301	.258	.238	.140	1.000	.245	-.018	.089	.087	.205	.173	.049	.206	.029
Effectiveness resourcing quality individuals	.260	.170	.419	.240	.245	1.000	.344	.185	.326	.234	.262	.444	.234	.172
Effectiveness using relevant tools	.218	.224	.304	.110	-.018	.344	1.000	.063	.042	.011	.008	.200	-.212	.064
Relationship with peers	.071	-.027	.212	.180	.089	.185	.063	1.000	.716	.635	.578	.297	.215	.171
Peers & team support	.230	.043	.263	.385	.087	.326	.042	.716	1.000	.619	.418	.374	.328	.248
Peers & team respect	.254	.109	.243	.382	.205	.234	.011	.635	.619	1.000	.567	.266	.214	.174
Teams trust	.273	.230	.200	.240	.173	.262	.008	.578	.418	.587	1.000	.358	.191	.141
Working atmosphere was satisfactory	.381	.342	.276	.309	.049	.444	.200	.297	.374	.266	.358	1.000	.289	.158
Rev Offshore management C19	.156	.173	.185	.203	.206	.234	-.212	.215	.328	.214	.191	.289	1.000	.667
Rev Communication with offshore team C20	.170	.225	.264	.034	.029	.172	.064	.171	.248	.174	.141	.158	.667	1.000
Time management	.000	.000	.000	.001	.003	.009	.024	.262	.018	.010	.006	.000	.080	.062
Cost management	.000	.012	.012	.007	.009	.063	.021	.404	.349	.163	.018	.001	.059	.021
Quality management	.000	.012	.000	.047	.015	.000	.003	.027	.008	.013	.035	.006	.047	.008
Scope management	.001	.007	.047	.000	.104	.014	.160	.052	.000	.000	.014	.002	.033	.381
Risk management	.003	.009	.015	.104	.014	.013	.435	.213	.218	.031	.059	.331	.031	.396
Effectiveness resourcing quality individuals	.009	.063	.000	.014	.013	.001	.001	.047	.001	.017	.008	.000	.017	.060
Effectiveness using relevant tools	.024	.021	.003	.160	.435	.001	.285	.285	.352	.460	.470	.035	.027	.281
Relationship with peers	.262	.404	.027	.052	.213	.047	.285	.000	.000	.000	.000	.003	.025	.061
Peers & team support	.018	.349	.008	.000	.218	.001	.352	.000	.000	.000	.000	.000	.001	.012
Peers & team respect	.010	.163	.013	.000	.031	.017	.460	.000	.000	.000	.000	.007	.026	.058
Teams trust	.006	.018	.035	.014	.059	.008	.470	.000	.000	.000	.000	.000	.042	.102
Working atmosphere was satisfactory	.000	.001	.006	.002	.331	.000	.035	.003	.000	.007	.000	.004	.004	.077
Rev Offshore management C19	.080	.059	.047	.033	.031	.017	.027	.025	.001	.026	.042	.004	.000	.000
Rev Communication with offshore team C20	.062	.021	.008	.381	.396	.060	.281	.061	.012	.058	.102	.077	.000	.000

Table 7: KMO Bartlett's Test – Management Capability Variables

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.698
Bartlett's Test of Sphericity	Approx. Chi-Square	426.288
	df	91
	Sig.	.000

Table 8: Communalities – Management Capability Variables

Communalities		
	Initial	Extraction
Time management	1.000	.692
Cost management	1.000	.631
Quality management	1.000	.503
Scope management	1.000	.366
Risk management	1.000	.472
Effectiveness resourcing quality individuals	1.000	.526
Effectiveness using relevant tools	1.000	.731
Relationship with peers	1.000	.789
Peer & team support	1.000	.737
Peer & team respect	1.000	.734
Teams trust	1.000	.585
Working atmosphere was satisfactory	1.000	.458
Rev Offshore management C19	1.000	.861
Rev Communication with offshore team C20	1.000	.814
Extraction Method: Principal Component Analysis.		

Table 9: Total Variance Explained – Management Capability Variables

Component	Total Variance Explained								
	Total	Initial Eigenvalues		Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
		% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.333	30.951	30.951	4.333	30.951	30.951	3.048	21.771	21.771
2	1.911	13.653	44.604	1.911	13.653	44.604	2.041	14.581	36.352
3	1.483	10.592	55.195	1.483	10.592	55.195	2.017	14.404	50.756
4	1.172	8.369	63.564	1.172	8.369	63.564	1.793	12.808	63.564
5	.967	6.907	70.471						
6	.846	6.041	76.512						
7	.759	5.420	81.932						
8	.638	4.558	86.490						
9	.497	3.550	90.040						
10	.375	2.681	92.721						
11	.337	2.405	95.126						
12	.310	2.218	97.344						
13	.205	1.464	98.808						
14	.167	1.192	100.000						

Extraction Method: Principal Component Analysis.

Table 10: Total Variance Explained – Management Capability Variables

Component	Total Variance Explained								
	Total	Initial Eigenvalues		Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
		% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.105	31.579	31.579	4.105	31.579	31.579	2.913	22.404	22.404
2	1.910	14.691	46.270	1.910	14.691	46.270	2.060	15.849	38.254
3	1.470	11.310	57.580	1.470	11.310	57.580	1.867	14.363	52.616
4	1.152	8.859	66.439	1.152	8.859	66.439	1.797	13.823	66.439
5	.932	7.165	73.605						
6	.799	6.146	79.751						
7	.647	4.974	84.725						
8	.528	4.058	88.783						
9	.410	3.157	91.939						
10	.339	2.611	94.551						
11	.314	2.417	96.968						
12	.215	1.654	98.622						
13	.179	1.378	100.000						

Extraction Method: Principal Component Analysis.

Appendix D-4a – Hierarchical Regression - Testing Moderator RAVPRB

Table 1: Coefficients

Model		Coefficients ^a							
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	-0.396	0.942		-0.421	0.675			
	Years of experience	0.067	0.038	0.195	1.772	0.080	0.191	0.194	0.194
	Coded Size of implementation A2	-0.136	0.338	-0.044	-0.403	0.688	-0.028	-0.045	-0.044
2	(Constant)	-3.927	3.667		-1.071	0.288			
	Years of experience	0.051	0.036	0.150	1.421	0.160	0.191	0.165	0.136
	Coded Size of implementation A2	-0.312	0.310	-0.101	-1.004	0.319	-0.028	-0.118	-0.096
	F3 Resource Availability Problems	-0.263	0.213	-0.132	-1.233	0.222	-0.225	-0.144	-0.118
	EQ Total	-0.008	0.012	-0.076	-0.672	0.504	0.237	-0.079	-0.064
	Lp Performance	0.082	0.123	0.093	0.664	0.509	0.407	0.078	0.063
	Follower Comm	0.235	0.122	0.299	1.936	0.057	0.481	0.222	0.185
	F1 Team & Peer Cooperation	0.397	0.236	0.198	1.683	0.097	0.354	0.195	0.161
	F2 Delivery capabilities	-0.093	0.206	-0.046	-0.450	0.654	0.016	-0.053	-0.043
	F3 Project Management knowledge	0.296	0.205	0.148	1.441	0.154	0.266	0.167	0.137
F4 Offshore team relations	0.178	0.200	0.089	0.891	0.376	0.130	0.104	0.085	
3	(Constant)	-2.377	3.662		-0.649	0.519			
	Years of experience	0.043	0.037	0.124	1.156	0.252	0.191	0.142	0.103
	Coded Size of implementation A2	-0.476	0.294	-0.155	-1.618	0.110	-0.028	-0.197	-0.144
	F3 Resource Availability Problems	9.597	3.584	4.799	2.678	0.009	-0.225	0.315	0.238
	EQ Total	-0.015	0.011	-0.149	-1.340	0.185	0.237	-0.164	-0.119
	Lp Performance	0.098	0.125	0.112	0.782	0.437	0.407	0.096	0.070
	Follower Comm	0.274	0.118	0.348	2.326	0.023	0.481	0.277	0.207
	F1 Team & Peer Cooperation	0.543	0.232	0.271	2.342	0.022	0.354	0.279	0.208
	F2 Delivery capabilities	0.266	0.246	0.133	1.077	0.285	0.016	0.132	0.096
	F3 Project Management knowledge	0.463	0.205	0.232	2.261	0.027	0.266	0.270	0.201
	F4 Offshore team relations	0.341	0.213	0.171	1.603	0.114	0.130	0.195	0.143
	RAVPRBxEQ_TOTAL	-0.019	0.011	-2.920	-1.778	0.080	-0.231	-0.215	-0.158
	RAVPRBxLPERF	-0.358	0.157	-4.259	-2.279	0.026	-0.228	-0.272	-0.203
	RAVPRBxFCOM	0.235	0.133	2.336	1.764	0.083	-0.221	0.214	0.157
	RAVPRBxTMPRCOOP	-0.053	0.255	-0.028	-0.208	0.836	-0.081	-0.026	-0.018
	RAVPRBxDLVCAP	-0.301	0.220	-0.155	-1.371	0.175	0.030	-0.168	-0.122
	RAVPRBxPMK	-0.401	0.220	-0.184	-1.821	0.073	-0.238	-0.220	-0.162
RAVPRBxOSTMREL	-0.226	0.213	-0.116	-1.057	0.295	-0.045	-0.130	-0.094	

a. Dependent Variable: Overall Perceived Client Satisfaction

Appendix D-4b – Hierarchical Regression - Testing Moderator OCPRB

Table 1: Correlation Matrix: Effect of OCPRB

Coefficients ^a												
Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	95.0% Confidence Interval for B		Correlations		Collinearity Statistics		
						Lower Bound	Upper Bound	Zero-order	Partial	Tolerance	VIF	
1	(Constant)	-.396	.942	-4.21	.675	-2.271	1.479					
	Years of experience	.067	.038	1.772	.080	-.008	.142	.191	.194	.194	.993	
	Coded Size of Implementation A2	-.136	.338	-.403	.688	-.809	.537	-.028	-.045	-.044	.993	
2	(Constant)	-3.820	3.709	-1.030	.307	-11.215	3.575					
	Years of experience	.060	.036	1.674	.098	-.011	.132	.191	.194	.161	.850	
	Coded Size of Implementation A2	-.271	.311	-.872	.386	-.892	.349	-.028	-.102	-.084	.904	
	F1 Org & Team Problems	-.088	.217	-.403	.688	-.521	.345	-.219	-.047	-.039	.786	
	EQ Total	-.009	.012	-.083	.472	-.032	.015	.237	-.085	-.070	.706	
	Lp Performance	.047	.122	.380	.705	-.197	.291	.407	.045	.037	.472	
	Follower Comm	.272	.119	2.281	.026	.034	.509	.481	.260	.220	.404	
	F1 Team & Peer Cooperation	.357	.244	1.462	.148	-.130	.844	.354	.170	.141	.621	
	F2 Delivery capabilities	-.031	.210	-.147	.884	-.449	.388	.016	-.017	-.014	.841	
	F3 Project Management knowledge	.322	.206	1.566	.122	-.088	.733	.266	.181	.151	.874	
	F4 Offshore team relations	.206	.203	1.014	.314	-.199	.611	.130	.119	.098	.897	
3	(Constant)	-6.405	4.282	-1.496	.140	-14.957	2.146					
	Years of experience	.046	.040	1.155	.252	-.033	.125	.191	.142	.114	.737	
	Coded Size of Implementation A2	-.143	.344	-.414	.680	-.829	.544	-.028	-.051	-.041	.781	
	F1 Org & Team Problems	-3.594	4.136	-1.797	.388	-11.853	4.665	-.219	-.107	-.086	.002	
	EQ Total	-.003	.013	-.243	.809	-.030	.023	.237	-.030	-.024	.581	
	Lp Performance	.104	.137	.758	.451	-.170	.378	.407	.094	.075	.396	
	Follower Comm	.251	.133	1.881	.064	-.015	.517	.481	.227	.186	.340	
	F1 Team & Peer Cooperation	.259	.270	.960	.341	-.280	.799	.354	.118	.095	.535	
	F2 Delivery capabilities	.027	.226	.013	.906	-.424	.477	.016	.015	.012	.768	
	F3 Project Management knowledge	.340	.217	1.568	.122	-.093	.772	.266	.191	.155	.833	
	F4 Offshore team relations	.232	.217	1.066	.290	-.202	.666	.130	.131	.105	.829	
	OTMPRBxEO_TOTAL	.001	.012	.093	.960	-.024	.025	-.219	.006	.005	.003	
	OTMPRBxLPERF	.048	.136	.576	.724	-.224	.320	-.211	.044	.035	.004	
	OTMPRBxFCOM	.103	.172	1.070	.599	-.241	.448	-.203	.074	.059	.003	
	OTMPRBxTMPRCOOP	-.023	.319	-.010	.943	-.660	.614	.076	-.009	-.007	.538	
	OTMPRBxDLVCAP	.162	.280	.074	.579	-.397	.722	-.007	.072	.057	.600	
	OTMPRBxPMIK	-.112	.275	-.050	.866	-.661	.438	-.071	-.050	-.040	.654	
	OTMPRBxOSTMREL	.190	.253	.754	.454	-.314	.695	.006	.093	.075	.750	

a. Dependent Variable: Overall Perceived Client Satisfaction

Appendix D-4c – Hierarchical Regression - Testing Moderator EPPRB

Table 1: Correlation Matrix: Effect of EPPRB

Model	Coefficients ^a										Collinearity Statistics					
	Unstandardized Coefficients			Standardized Coefficients		t		Sig.		95.0% Confidence Interval for B		Zero-order	Partial	Part	Tolerance	VIF
	B	Std. Error	Beta		t	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF			
1	(Constant)	-.396	.942		-.421	.675	-2.271	1.479								
	Years of experience	.067	.038	.195	1.772	.080	-.008	.142	.191	.194	.194	.993	1.007			
	Coded Size of Implementation A2	-.136	.338	-.044	-.403	.688	-.809	.537	-.028	-.045	-.044	.993	1.007			
2	(Constant)	-3.683	3.740		-.985	.328	-11.138	3.772								
	Years of experience	.060	.036	.175	1.680	.097	-.011	.132	.191	.194	.162	.849	1.178			
	Coded Size of Implementation A2	-.300	.319	-.098	-.940	.350	-.935	.336	-.028	-.110	-.091	.861	1.161			
	F2 Offshore and Vendor Partnership Problems	.096	.221	.048	.436	.664	-.345	.538	-.134	.051	.042	.755	1.324			
	EQ Total	-.009	.012	-.090	-.779	.438	-.033	.014	.237	-.091	-.075	.695	1.440			
	Lp Performance	.056	.122	.064	.461	.647	-.187	.300	.407	.054	.044	.475	2.107			
	Follower Comm	.268	.119	.341	2.245	.028	.030	.506	.481	.256	.216	.402	2.485			
	F1 Team & Peer Cooperation	.407	.245	.203	1.661	.101	-.081	.895	.354	.192	.160	.618	1.619			
	F2 Delivery capabilities	-.048	.205	-.024	-.236	.814	-.457	.360	.016	-.028	-.023	.882	1.133			
	F3 Project Management knowledge	.350	.211	.175	1.661	.101	-.070	.770	.266	.192	.160	.835	1.198			
	F4 Offshore team relations	.254	.210	.127	1.212	.229	-.164	.672	.130	.141	.117	.842	1.187			
3	(Constant)	-2.706	3.776		-.717	.476	-10.248	4.835								
	Years of experience	.064	.037	.186	1.715	.091	-.011	.139	.191	.208	.163	.769	1.301			
	Coded Size of Implementation A2	-.201	.322	-.065	-.625	.534	-.844	.441	-.028	-.077	-.059	.826	1.211			
	F2 Offshore and Vendor Partnership Problems	2.848	3.879	1.424	.734	.465	-4.898	10.594	-.134	.091	.070	.002	415.839			
	EQ Total	-.010	.012	-.096	-.809	.421	-.034	.014	.237	-.100	-.077	.649	1.542			
	Lp Performance	.091	.124	.105	.738	.463	-.156	.339	.407	.091	.070	.449	2.225			
	Follower Comm	.173	.125	.220	1.388	.170	-.076	.422	.481	.170	.132	.360	2.777			
	F1 Team & Peer Cooperation	.428	.252	.214	1.700	.094	-.075	.931	.354	.206	.162	.570	1.754			
	F2 Delivery capabilities	.151	.224	.075	.673	.503	-.296	.598	.016	.083	.064	.722	1.385			
	F3 Project Management knowledge	.413	.211	.206	1.956	.055	-.009	.835	.266	.236	.186	.812	1.232			
	F4 Offshore team relations	.316	.228	.158	1.388	.170	-.139	.771	.130	.170	.132	.698	1.432			
	OSVNPBxEQ_TOTAL	.010	.013	1.409	.745	.459	-.016	.035	-.135	.092	.071	.003	395.727			
	OSVNPBxLPERF	-.091	.131	-1.036	-.691	.492	-.353	.172	-.138	-.085	-.066	.004	248.472			
	OSVNPBxFCOM	-.183	.123	-1.743	-1.493	.140	-.429	.062	-.146	-.182	-.142	.007	150.821			
	OSVNPBxTMPRCOOP	.137	.240	.069	.571	.570	-.342	.616	.020	.071	.054	.629	1.590			
	OSVNPBxDLVCAP	.460	.234	.223	1.966	.054	-.007	.927	.250	.237	.187	.701	1.426			
	OSVNPBxPMK	.317	.188	.180	1.682	.097	-.059	.692	.047	.204	.160	.786	1.273			
	OSVNPBxOSTMREL	.217	.215	.113	1.006	.318	-.213	.647	.138	.124	.096	.719	1.391			

a. Dependent Variable: Overall Perceived Client Satisfaction

Appendix D-4d – Hierarchical Regression – Testing Moderator

CULTPRB

Table 1: Correlation Matrix: Effect of CULTPRB

Model	Coefficients ^a											Collinearity Statistics			
	Unstandardized Coefficients			Standardized Coefficients		t		Sig.		95.0% Confidence Interval for B		Correlations		Tolerance	VIF
	B	Std. Error	Beta			t	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part			
1	(Constant)	-.396	.942			-.421	.675	-2.271	1.479						
	Years of experience	.067	.038	.195		1.772	.080	-.008	.142	.191	.194	.194	.993	1.007	
	Coded Size of implementation A2	-.136	.338	-.044		-.403	.688	-.809	.537	-.028	-.045	-.044	.993	1.007	
2	(Constant)	-4.288	3.705			-1.157	.251	-11.674	3.099						
	Years of experience	.064	.036	.186		1.773	.081	-.008	.136	.191	.204	.170	.838	1.194	
	Coded Size of implementation A2	-.371	.328	-.121		-1.129	.263	-1.025	.284	-.028	-.132	-.108	.804	1.244	
	F4 Cultural Problems	.204	.221	.102		.926	.358	-.236	.645	-.026	.108	.089	.753	1.328	
	EQ Total	-.008	.012	-.077		-.672	.504	-.031	.016	.237	-.079	-.064	.703	1.422	
	Lp Performance	.050	.121	.057		.412	.682	-.192	.291	.407	.049	.039	.478	2.094	
	Followee Comm	.293	.121	.372		2.426	.018	.052	.534	.481	.275	.232	.390	2.566	
	F1 Team & Peer Cooperation	.348	.239	.174		1.455	.150	-.129	.824	.354	.169	.139	.643	1.556	
	F2 Delivery capabilities	-.028	.205	-.014		-.136	.892	-.437	.381	.016	-.016	-.013	.871	1.148	
	F3 Project Management knowledge	.302	.206	.151		1.465	.147	-.109	.714	.266	.170	.140	.862	1.160	
	F4 Offshore team relations	.267	.203	.134		1.319	.191	-.137	.672	.130	.154	.126	.893	1.119	
3	(Constant)	-5.053	3.917			-1.290	.202	-12.877	2.771						
	Years of experience	.038	.043	.110		.874	.385	-.049	.124	.191	.108	.086	.603	1.658	
	Coded Size of implementation A2	-.446	.346	-.145		-1.290	.202	-1.137	.245	-.028	-.158	-.126	.756	1.323	
	F4 Cultural Problems	-1.002	4.704	-.501		-.213	.832	-10.397	8.393	-.026	-.026	-.021	.002	577.947	
	EQ Total	-.009	.012	-.085		-.713	.479	-.033	.016	.237	-.088	-.070	.674	1.484	
	Lp Performance	.067	.130	.077		.515	.608	-.193	.328	.407	.064	.050	.430	2.326	
	Followee Comm	.350	.134	.445		2.607	.011	.082	.619	.481	.308	.255	.328	3.048	
	F1 Team & Peer Cooperation	.270	.248	.135		1.087	.281	-.226	.766	.354	.134	.106	.621	1.610	
	F2 Delivery capabilities	-.187	.237	-.083		-.787	.434	-.661	.287	.016	-.097	-.077	.680	1.472	
	F3 Project Management knowledge	.336	.227	.168		1.481	.143	-.117	.789	.266	.181	.145	.745	1.343	
	F4 Offshore team relations	.311	.223	.156		1.399	.167	-.133	.756	.130	.171	.137	.772	1.295	
	CULTPRBxEQ_TOTAL	.000	.015	-.043		-.020	.984	-.029	.029	-.026	-.002	-.002	.002	492.998	
	CULTPRBxLPERF	.190	.177	2.241		1.073	.287	-.164	.543	-.016	.132	.105	.002	455.842	
	CULTPRBxFCOM	-.156	.156	-1.570		-1.003	.320	-.468	.155	-.018	-.123	-.098	.004	256.055	
	CULTPRBxTMPRCOOP	-.082	.346	-.037		-.238	.813	-.774	.609	-.023	-.029	-.023	.402	2.486	
	CULTPRBxDLVCAP	-.049	.198	-.027		-.247	.805	-.444	.346	-.065	-.031	-.024	.781	1.280	
	CULTPRBxPMK	-.175	.219	-.087		-.802	.426	-.612	.261	-.051	-.099	-.078	.660	1.516	
	CULTPRBxOSTMREL	.044	.215	.022		.204	.839	-.385	.473	.085	.025	.020	.786	1.273	

a. Dependent Variable: Overall Perceived Client Satisfaction

Appendix D-5a Hierarchical Regression

Figure 50: P-P Plot and Scatter Plot: Hierarchical Regression DV Overall Perceived Client Satisfaction (PCSAT) with moderator Organizational Change Problems (OCPRB)

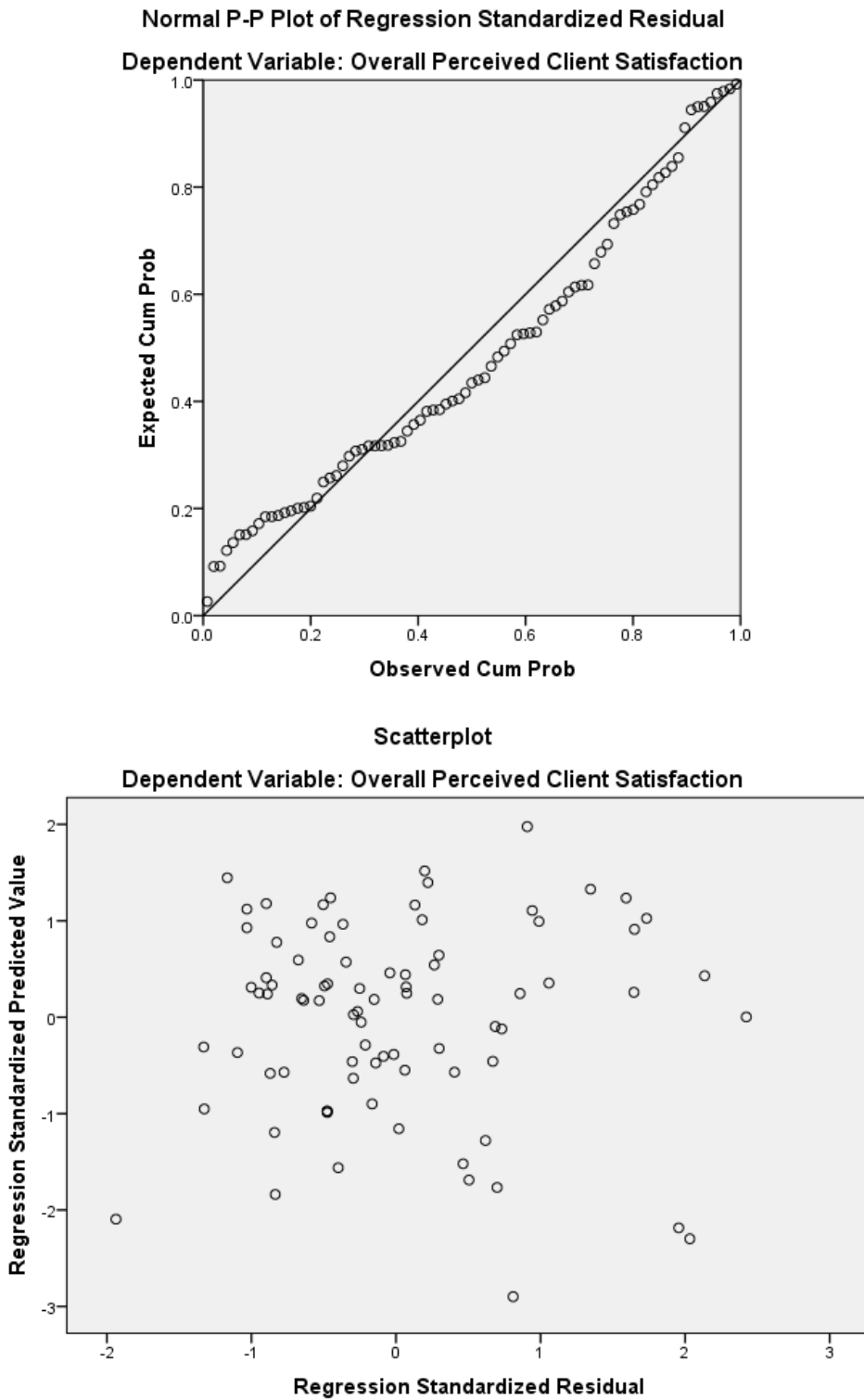


Figure 51: P-P Plot and Scatter Plot: Hierarchical Regression DV Overall Perceived Client Satisfaction (PCSAT) with moderator Resource Availability Problems (RAVPRB)

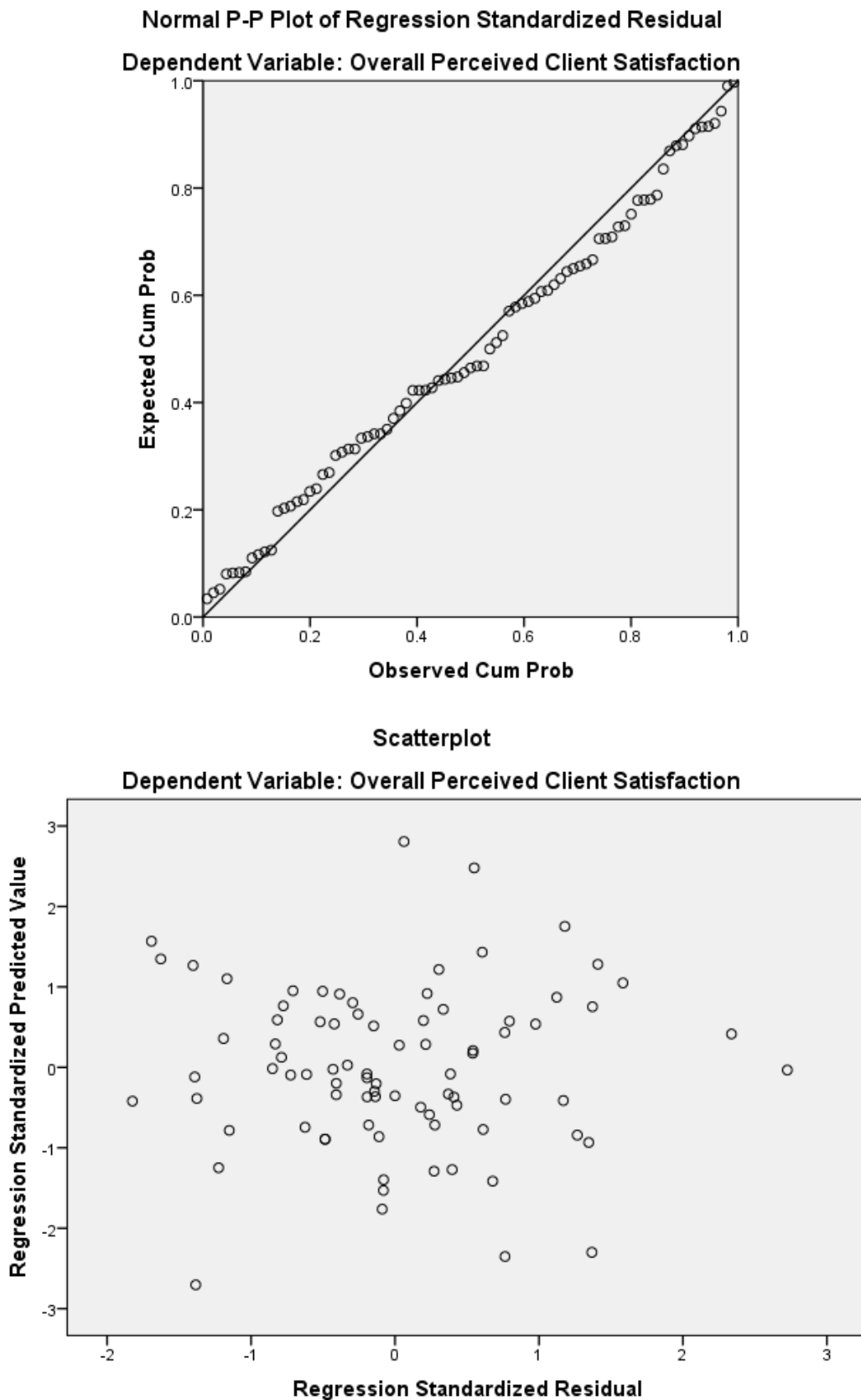


Figure 52: P-P Plot and Scatter Plot: Hierarchical Regression DV Overall Perceived Client Satisfaction (PCSAT) with moderator External Partnership Problems (EPPRB)

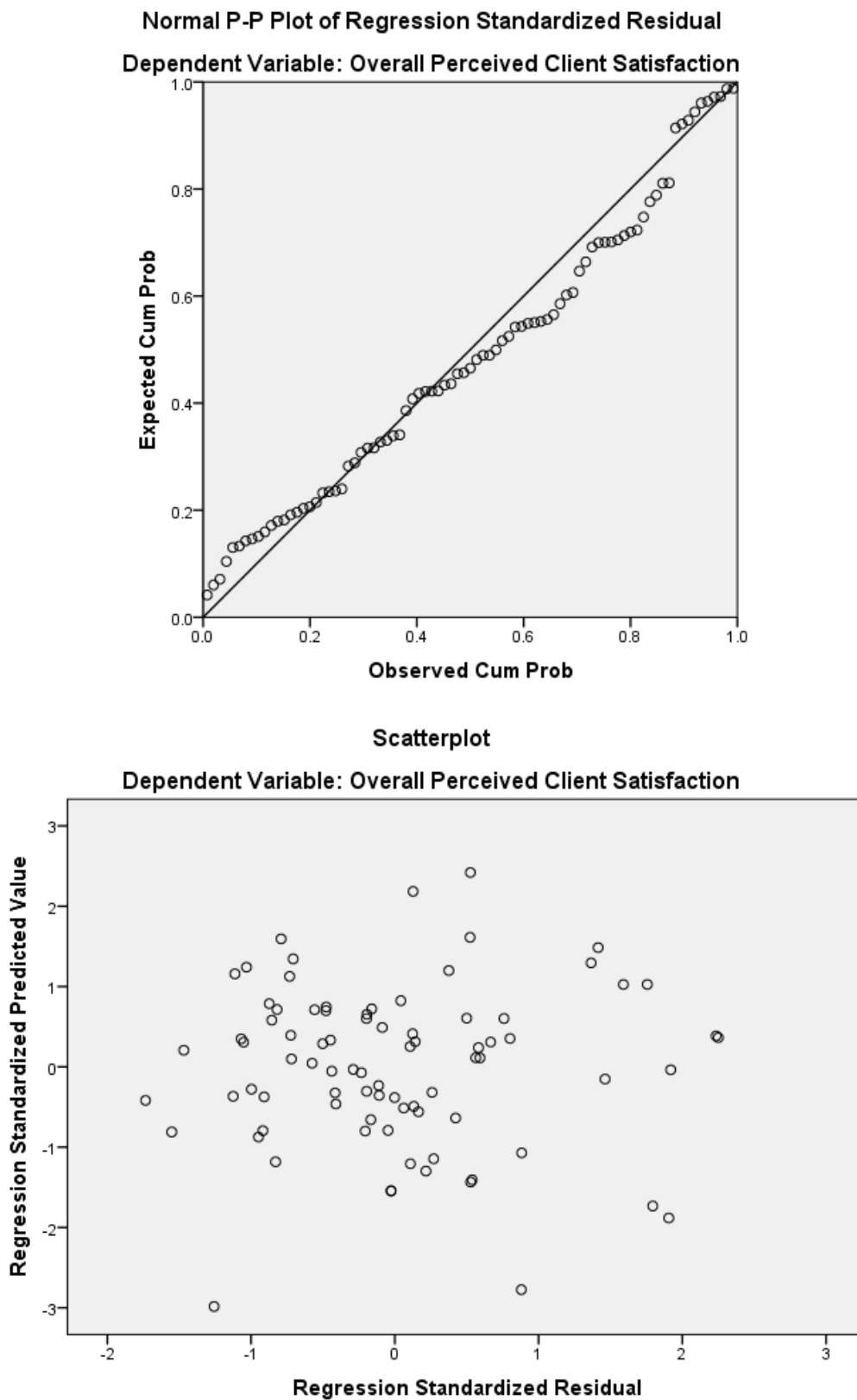
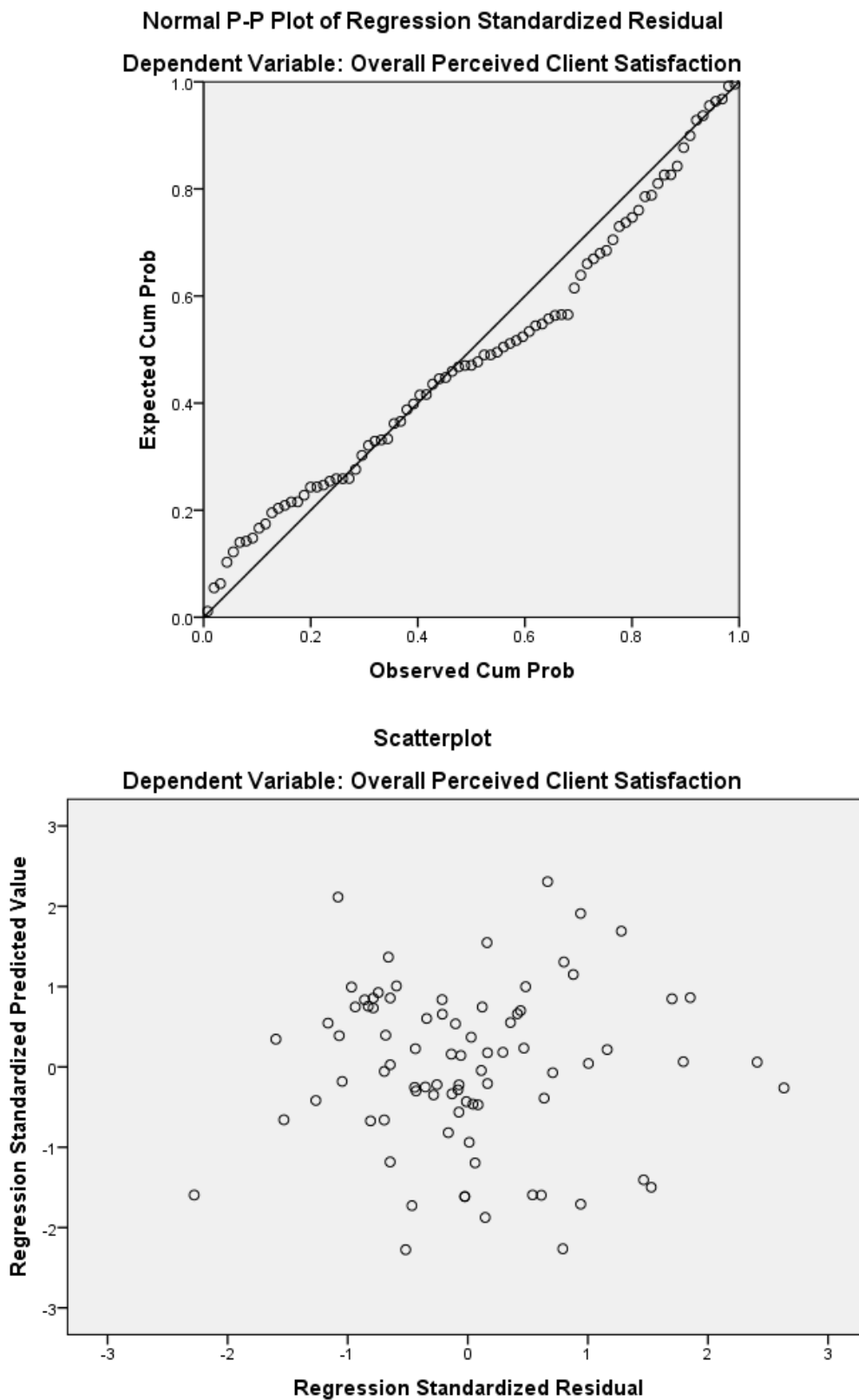


Figure 53: P-P Plot and Scatter Plot: Hierarchical Regression DV Overall Perceived Client Satisfaction (PCSAT) with moderator Cultural Problems (CULTPRB)



Appendix E-1: Harman's Test of Common Method Variance

Table 1: Harman's Single-Factor Test

Extraction Method: Principal Component Analysis.

Total Variance Explained. Initial Eigenvalues > 1

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	15.505	12.709	12.709	15.505	12.709	12.709
2	8.646	7.087	19.795	8.646	7.087	19.795
3	8.074	6.618	26.413	8.074	6.618	26.413
4	6.107	5.006	31.419	6.107	5.006	31.419
5	4.596	3.767	35.186	4.596	3.767	35.186
6	4.237	3.473	38.659	4.237	3.473	38.659
7	4.080	3.344	42.003	4.080	3.344	42.003
8	3.952	3.239	45.242	3.952	3.239	45.242
9	3.437	2.818	48.060	3.437	2.818	48.060
10	3.335	2.734	50.794	3.335	2.734	50.794
11	3.065	2.512	53.306	3.065	2.512	53.306
12	2.902	2.379	55.685	2.902	2.379	55.685
13	2.751	2.255	57.940	2.751	2.255	57.940
14	2.616	2.145	60.084	2.616	2.145	60.084
15	2.428	1.990	62.074	2.428	1.990	62.074
16	2.222	1.821	63.895	2.222	1.821	63.895
17	2.156	1.767	65.663	2.156	1.767	65.663
18	2.039	1.671	67.334	2.039	1.671	67.334
19	1.941	1.591	68.925	1.941	1.591	68.925
20	1.895	1.554	70.478	1.895	1.554	70.478
21	1.686	1.382	71.860	1.686	1.382	71.860
22	1.673	1.372	73.232	1.673	1.372	73.232
23	1.670	1.369	74.601	1.670	1.369	74.601
24	1.565	1.283	75.884	1.565	1.283	75.884
25	1.540	1.262	77.146	1.540	1.262	77.146
26	1.483	1.216	78.361	1.483	1.216	78.361
27	1.443	1.183	79.545	1.443	1.183	79.545
28	1.381	1.132	80.676	1.381	1.132	80.676
29	1.303	1.068	81.744	1.303	1.068	81.744
30	1.182	0.969	82.713	1.182	0.969	82.713
31	1.155	0.947	83.660	1.155	0.947	83.660
32	1.078	0.884	84.544	1.078	0.884	84.544
33	1.052	0.862	85.406	1.052	0.862	85.406
34	1.008	0.826	86.232	1.008	0.826	86.232
35	0.984	0.807	87.039			

36	0.931	0.763	87.801
37	0.904	0.741	88.542
38	0.859	0.704	89.247
39	0.846	0.694	89.941
40	0.772	0.632	90.573
41	0.768	0.629	91.202
42	0.742	0.608	91.811
43	0.651	0.534	92.344
44	0.641	0.525	92.869
45	0.596	0.489	93.358
46	0.543	0.445	93.803
47	0.524	0.429	94.232
48	0.515	0.423	94.655
49	0.483	0.396	95.051
50	0.462	0.379	95.430
51	0.454	0.372	95.802
52	0.440	0.360	96.162
53	0.387	0.317	96.479
54	0.364	0.299	96.778
55	0.330	0.270	97.048
56	0.320	0.263	97.311
57	0.296	0.243	97.553
58	0.288	0.236	97.789
59	0.266	0.218	98.007
60	0.242	0.198	98.206
61	0.230	0.189	98.394
62	0.216	0.177	98.572
63	0.201	0.164	98.736
64	0.195	0.159	98.896
65	0.181	0.149	99.044
66	0.166	0.136	99.181
67	0.153	0.125	99.306
68	0.146	0.119	99.425
69	0.129	0.106	99.531
70	0.111	0.091	99.622
71	0.091	0.075	99.697
72	0.083	0.068	99.765
73	0.073	0.060	99.825
74	0.067	0.055	99.880
75	0.061	0.050	99.930
76	0.054	0.045	99.975
77	0.030	0.024	99.999
78	0.001	0.001	100.000