Critical core competencies for effective strategic leadership in project management

By

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DECLARATION

I the undersigned hereby declare that this doctorate thesis entitled "Critical core competencies for effective strategic leadership in project management" is my own work. This work has not been previously submitted to any institution for the purposes of acquiring a doctorate degree award. I further declare that all sources used in this thesis have been acknowledged to the best of my knowledge.

Name in full ...................... Larry Enoch Jowah

Signature ..............................................................

Date ........................................ 11th January 2013
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1 Bakorinthe 15:10

“Empa ke ka mohau wa Modimo ke leng seo ke keng sona; mme mohau wa wona ho nna ha o a ka wa eba leffeela; empa, ke ba fetisitse bohle hole ka ho sebetsa: empa a seng nna, e leng mohau wa Modimo o ho nna.”
ABSTRACT

Project management is undeniably the fastest growing discipline as organizations move into the euphoria of projectification of their operations. Though projects have been a part of human life since time immemorial, there is a sudden realisation of the effectiveness of the methods used in project management. The enrolment of students studying for project management in tertiary institutions has shown tremendous increase. Yet the project execution process is mired by high failure rates and absence of clarity on the necessary skills required for effective project execution. The authority-gap in project management presents political and operational conflicts, and new innovative ways of authority-gap reduction need to be identified and taught in training programs.

Simultaneously there is a realisation by both academics and practitioners that there is a difference between managers and leaders. Extensive studies on leadership have not allowed for a one-stop-leadership-style to be used in leadership of any form, let alone project leadership. In fact there is no standard definition of leadership as this has been heavily contextualized and thereby disallowing the creation of a universal definition. No cast-in-stone leadership styles are known and thereby leaving the research on leadership to concentrate on critical competencies required for effective leadership of projects.

This study seeks to establish the core competencies needed by the project leaders and other practitioners to reduce the failure rate and maximise the benefits currently sought after by organisations. Studies have shown that the matrix structure within which the embedded projects work is a contributing factor to the failure of projects. Because projects are executed by people, it would be the proper utilisation of people’s talents and competencies that are expected to yield favourable results. Thus, whilst the matrix structure creates the authority-gap that presents a problem for effective project execution, management-by-projects still remains the best way known to add economic value to performance and productivity. The study therefore focuses on those
characteristics of project leaders that will most likely make the difference in the way people perform in the workplace.

The research findings emphasised the importance of empowerment of project managers and the development of their interpersonal skills of the project leader with special emphasis on extroversion, genuineness of senior management, and the responsiveness of the project leaders as important requirements for effective authority-gap reduction. These critical competencies will therefore facilitate the project execution process and enhance the empowered project leader’s ability to reduce the high project failure rate and high cost overruns. These competencies apply specifically to the human element as it relates to the role of the project leader and the interaction with the team members, this new knowledge needs to be introduced into training programs and project practitioners.
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INTRODUCTION AND SCOPE OF THE STUDY

1.1 INTRODUCTION
The study of projects and project management has always been understood in the context of a singular phenomenon. A project, though unique in many ways and singular in its execution, does not operate in complete isolation of other past projects, current projects or existing management theories (Engwall 2003:789-808). Based on research findings it is generally accepted that projects have significantly unique characteristics in contemporary organisations initiated to solve tasks and work assignments of different types and sizes (Whittington, Pettigrew, Fenton & Conyon 1999:583-600). The business world in general is increasingly 'projectified' as management by projects gradually is used to execute management of change. Management by projects has become popular due to an increase in process redesign to improve overall operational effectiveness (Knipe, van der Waldt, van Niekerk, Burger & Nell 2008:52). The traditional project type time-bound structures are constantly used to undertake highly complex and extraordinary projects. McShane and Von Glinow (2009:146) referred to project task teams as multi-skilled temporary teams which are established as effective means to solve problems, realise an opportunity or design a product or service. Du Toit and Van der Walt (1999:201) argued that organisations with such processes acknowledge the effectiveness of certain project management competencies not found in traditional routine management processes.

At the same time there is an increasing academic interest in studying the role of project management. Academically, projects are classified as unique multi-dimensional organisation-integrating processes allowing multi-skilling of the leaders and cross-functioning of the otherwise independent organisational units (Ford & Randolph 1992:267-294).

1.2 LITERATURE REVIEW
The interest of academics in projects is largely based on the structures and the dynamics of individual projects as lonely undertakings, independent of history, contemporary context and a future (Kreiner 1995:335-346). By implication, earlier experience, simultaneous events and future intentions are not included in the
analysis each project is considered to be unique and unrelated to the next. Gray and Larson (2008:139) share the viewpoint that experiences learnt in one project will inevitably affect the decisions made in the next project. Some projects are embedded in the mother or primary organisation, or are components of a large organisation with clearly defined reporting structures outside of the project itself. Doolen, Hacker and Van Aken (2003:285-296) reported their findings on ‘projects within organisations’ by concluding that the project manager cannot decide on the culture and ways of operation, but is still expected to find a way to manage the project within the organisation's power and politics mix. Other projects are stand-alone, both the embedded and the stand-alone structures leave the project manager with an authority-gap, an absence of direct authority over his or her ‘subordinates.’

The absence of direct formal authority threads through all projects regardless of their size, type and structure except for owner managed projects. At any stage of the project, the leadership is influenced by other variables and factors external to it. The study takes the position that every project, though unique, should be analysed according to the following:

- experience gained from past activities,
- politics during the pre-project phases,
- courses of events during project execution,
- ideas about the post-project future,
- institutionalised norms for embedded projects,
- external factors that influence the processes, and the
- inherent authority gap within which a project manager is expected to deliver.

Engwall (2003:789-808) postulated that current project management knowledge is a practitioner-driven theory emerging from practical, past experiences and problems in coordinating the execution of the project. It is these practical problems and how the managers have overcome them in the absence of authority, and yet come up with successful projects, that are the focus of this study.

The foregoing introduction sought to position the project as a unique time-bound undertaking with the project manager being solely responsible for the success or failure thereof. The development of technology has not simplified project execution, it may have simply made it easier to manage or execute certain operations of the
The success and failure of a project hinges largely on the human resource component of the project aided by technological advances that exert pressure on the management and the decision processes (Jones and George 2009:200). The research seeks to identify critical core competencies of this one element, project leadership. During execution, this element of the project success remains a common factor threading through one unique project to another project without changing. Technological and other material resources differ from project to project, but the human resource element remains the same. An understanding of the core competencies required by project leaders will assist both the academia and applications in industry, and provide informed views/approaches on training needs for project leadership development.

The literature describes the role of the project manager as a difficult and complex undertaking characterised by little formal authority and high delivery expectations (Gaddis 1959:89-97). This necessitates the study of these critical competencies expected of the project leader that would reduce the risk of ineffective project management by identifying the necessary critical core competencies for effective project execution. Pinto and Covin (1989:49-60) referred to the project manager's function as a non-legitimate change-agent in a conservative and too often hostile organisational environment. This assertion underscores the presence and possible serious impact on the effectiveness of project execution given the characteristic determinants of successful execution, i.e. the quality as perceived by the customer, time limit as agreed on by all the stakeholders, and the budget limit as forecast and agreed by all the stakeholders from the beginning. A project therefore is characterised by certain distinct features, such as:

- A project is an undertaking with clearly defined objectives, for example the construction of a 20 storey building with 20 apartments at each level starting 1\textsuperscript{st} January 2010 and to be completed by the 30\textsuperscript{th} November 2010.
- The product differs according to the customer’s needs and projects have a variety of specialists managing aspects of the project. The project manager has limited authority over the professionals, most of whom are senior to him or her. This is referred to in this study as the authority gap as it severely limits the project manager’s power forcing him or her to resort to other tools and techniques to get both cooperation and resources.
• The work is non-routine, in other words, from the example above, in one apartment alone work is done according to schedules such as clearing of the ground, construction of civil structures, laying of plumbing systems, bricklaying, roofing, ceiling and painting, all by different professionals.

Projects are easily confused with programmes, it is necessary to differentiate between them early in the study. The difference between a programme and a project is that a programme is a series of coordinated, related, multiple projects that continue over extended time intending to achieve a goal (Gray & Larson 2008:7). Programme management is not the same as multi-project management, nor is it the same with project management (Pellegrinelli, 1997:141 - 149). The relationship between the programme and the project is discussed in point form below.

• Whereas a programme is an organizing framework, the project is a process for delivering specific predetermined outcomes.
• The programme may not be limited by time (no start of end date), but a project as a predetermined start and end date or delivery time.
• Programmes evolve in line with business needs (somewhat adhoc) but projects are determined by set objectives.
• Programmes involve the management of multi-operations that may be related to each other, but a project is a single delivery that will not be repeated.
• Programmes specifically focus on strategic project objectives, but the project is set on changing and change management.
• In the programme, the Programme manager facilities the interaction of numerous project managers; whereas the project manager has a single point of responsibility.

As an example, a government ministry like the Ministry of Public Construction may have one programme manager for all public works that coordinate all projects run by different project managers. That structure on its own allows the programme manager a degree of authority on the project manager and thereby reduces the autonomy of the project manager in the running of the single point-of- responsibility, this creates the authority gap.
In conditions of uncertainty, the authority gap, the constraints coming from the complexity of the projects against the customers' expectations, the time limitations within which the deliverables are expected and the newness of the undertaking, make project management unique and cumbersome. The iron triangle of project management consists of time, cost and quality – the determinants of success or failure (Burke 2010:265). Due to the nature of projects and the differences of the projects in both material requirements, technical requirements and the nature of the specifications, extensive studies have been carried out to try and ascertain possible generic causes of failure in project execution. Baccanni, Salm, and Love (2004:286 - 295) admit that there is an unprecedented high failure rate in project execution for which no adequate explanation can be given. The possible causes summarized from a wide varied of contemporary literature are highlighted below.

- **Unmet clients' needs**: Too often the client's expectations are not understood and the project managers fail to satisfy the customer.

- **Inadequate feasibility study**: Feasibility studies for too many projects are inadequate or done before the project manager is appointed.

- **Unclearly defined scope**: Too many things taken for granted and no proper scope definition leading to unsatisfied customers and excess costs.

- **Project costing**: Improper project costing may result in cost overruns or inadequate finance to complete the project.

- **Time needed to complete**: Too many projects are pushed or compressed unrealistically into too short a time for adequate execution.

- **Supplies procurement**: If procurement is not properly managed in the sense of getting wrong supplies or merely inadequate supplies.

- **Inadequate resources**: Inadequate resources in the form of finance, human resources of technology appropriate for the execution.

- **Inadequate team leadership**: The absence of appropriate leadership of the project which may lead to failure of many aspects of the project.

- **Ill identified quality standards**: Unrealistic or not clearly defined and agreed on quality standards which will create conflicts with customers.

- **Absence of vision and direction**: The absence of visionary leadership that will give proper direction during project execution.
• **Stakeholders’ role:** A not clearly defined and understood stakeholder role and interests which may result in conflicts or interruptions of operations.

• **Poor communication:** The failure to communicate relevant information appropriately and in time may affect operations.

The main areas of concern in project execution are late delivery, overrun costs or under budgeting, under performance, poor quality and the deliverables failing to meet the customer expectations. Project management (leadership) success on the other hand is influenced by numerous factors illustrated below, a distinction is drawn between project success and project management success. Project management (leadership) success focuses on the execution process, but project success goes beyond the project execution process itself. Schwalbe (2006:15) and Cooke-Davies (2001:185-190) in separate studies identified factors that lead to project management success, and these are listed as:

- **The leadership style in relation to project type:** Leadership styles are situational and the best way to lead is switch leadership as the leader needs to be contextual in the leadership given the people, the task and other requirements.

- **Effective management of project scope:** Management is a key component of the recipe for project success, but there is a need to understand clearly the scope of the project to avoid going over boundaries or not meeting customer expectations.

- **Effective management of time schedules:** Project success is also based on the time it takes, and time translates to money. Most costs overruns are directly related to the delays in the execution of the projects.

- **Understanding of the project risks and plan:** Risk planning and management reduces possible failures and increases the success rates. A prospective problem planned for is easier to handle than one that was not anticipated.

- **Adequate resource and cost control:** A good plan needs to work correctly the resources and deliver them in good time.

- **Clarity of mission and objectives to stakeholders:** The team mates need to buy into the vision and mission, the leadership must be visionary.
- **Use of appropriate tools and techniques for project type:** Relevant tools and techniques are needed to effect the execution of the project.

- **Stakeholder management during execution:** A full understanding of stakeholder interest and role may reduce unnecessary problems and failure.

Project management success is a process with many components which when put together correctly, result in a successful project undertaking. Based on the previous discussion, for the purposes of this study, project success is when the project undertaking meets the scope, time, cost and quality stipulations to the satisfaction of the customer, accomplishing the objectives of the project in their entirety (Chan, Scott and Chan, 2004:153 - 155). Project management success is the process of successfully coordinating the different activities and resources and successfully delivering a product that meets all the requirements including a happy workforce, no injuries or deaths, good profit and no other wastages that may be of economic disadvantage.

The life cycle of a project has its own environment and elements around it that influence the project execution (Labuschagne, Brent and Claasen, 2005: 38–54). Two types of environmental factors are identified in the study, namely socio-legal factors and stakeholder relationships. These relate to institutions or social, legal and economic factors in which the project is implemented.

**The economic factors** relate to the general economic conditions of the country and the availability of loans, disposal income and possibly the economic policy of the country (Pomeroy, Oracion, Richard, Pollnac, & Caballes (2005: 360–377) The economic factors relate to the level of development of the country, the condition or economic health of the country, education level and the availability of local suppliers for the project.

**Political factors** refer to the political climate, stability of the country and the type of governance (capitalist, socialist, communist ,etc) and how this impacts on business. The political stability of the country and the neighbouring countries also contributes to the political factors within which the business takes place. (Gary and Larson, 2008:489).

**Legal factor** relate to the laws and by laws that govern business activities and the related issues, affirmative action, employment equity, tax regime or labour relations.
The legal will also relate to local laws and regulations where the project takes place, such as labour laws, strength of labour unions, environmentalist movements, government interference or support, pollution laws and many other related regulations (Gary and Larson, 2008:489).

**Security factors** may include amongst others the safety of the practitioners, their ability to transmit money from place to place and guarantees that they can do business safely. The security element relates to crime due to pilferage or thefts from outside, safety of the people and the by-regulations, these affect the psychological and the physical wellbeing of the stakeholders (Gary and Larson, 2008:489).

**Geography factors** will relate to where the project is to be implemented in relation to other project requirements like the supply of labour, the supply of materials, the expectations of the community where the project takes place, and many such elements (Schwalbe 2006:29).

**The culture** of the people is of critical importance as it impacts on their work ethics and this relates to their performance and expectations. The culture will need to be considered together with the predominant religion and beliefs where the project is to be implemented (Earley and Mosakowski, 2000:26 - 49).

**Infrastructure** relates to the ability or the availability of other factors that might assist in the execution of the project. These may include technology like telecommunications, transport infrastructure, electricity and such elements (Thamhain, 2004:533 - 544).

**International trade** affects the operations of the business and may make it more expensive for local businesses to do business. The movement of cheap goods and the presence of international human resources will also have its positives and negatives to the project environment.

**Environmental** laws create new demands on the execution of the projects and may result in need for heavy investment for more appropriate environmental friendly technology. Some projects may be stopped and others done differently to meet the demands of the ever changing global structures.
Technological factors are caused by the fast-paced development in communication, and equipment and machinery for operational purposes. Quicker and faster means of transport allow for easy communication and movement of goods around the globe faster and cheaper.

Each one of these factors affect project implementation and influence the decision making process of the internal project management process. The effectiveness of the project manager is judged based on how a person relates and balances these challenges and seek to perform optimally, internally, despite the presence of an authority-gap (Cooke-Davis 2002:185-190). Projects integrate organisational structures and resources for the execution to be successful.

There is an on-going relationship between the project leader, and both the internal and external stakeholders throughout the life cycle of a project. This relates specifically to human resources elements from within the organisation and those human elements or institutions from outside the organisation with direct special interests in the project. Different individuals have different personal goals which may be in conflict with the project goals. This difference is a breeding ground for conflict. In addition, projects require combined efforts of a variety of specialists who will have a particular way of thinking in relation to the other stakeholders (Gray & Larson 2008:6). The specialists seconded to a project from other departments may have divided attention between their functional areas and the project. The importance of the project to the organisation as shown from the support or lack thereof by top management also affects the project. These play a critical role in the management of the execution process and significantly affect the decision making process substantially. It is expedient that the project leader knows all the stakeholders, their interests and understands how they may affect project execution and processes. A poor knowledge about the key stakeholders will create problems for the execution of the project if their interests are not taken aboard.
The Project Management Book of Knowledge (PMBOK) cited by Burke (2010:48) identified nine knowledge areas of project management. The knowledge areas are process based, because project execution is done in interconnected stages with certain stages overlapping. Like any management processes, there are plans and designs and documentation that are necessary, but projects pass through forty two processes that are grouped into five stages of initiation, planning, executing, monitoring and controlling, as well as the close-out phase. To effectively achieve any project management program, the nine knowledge areas referred to above, that fall into the five basic stages, are considered indispensible and therefore critical for effective project leadership. The knowledge areas are discussed briefly below:

**Scope management**: the scope of a project is the work to be done as per discussions and specifications as required by the customer. Scope management is the directing, leading, controlling and monitoring of the scope during execution. The scope tells you what exactly is to be done, and can be best understood in the form of specific tasks that will bring specific deliverables at the completion of the project.

**Time management**: Time; measurement of how long it takes to get the work done. Time management involves evaluating, controlling and monitoring operations to allow for completion within the specified period. There is a direct relationship between the time estimated and the costs of delivering the project. The labour costs are one element of cost estimation that may become expensive, if the estimated time exceeds expectations before the project is completed, you still need to pay the labour force past the estimated time.

**Cost management**: Cost; the amount needed to complete the project involves, material, labour, transport costs and other services that may be needed like consultancy for most engineering projects. Cost management involves controlling of expenditure, providing proper resources at competitive prices and staying within the project budget. The inflation rates, labour union salary demands as well as possible delays need to be included in the costing of the project in advance to avoid running out of money or reducing the profits when things change in the market place.

**Quality management**: Quality is sometimes referred to as “fitness of purpose and conformance to specifications,” meeting or exceeding customer expectations.
Quality management is the process of controlling, leading and directing of the execution process to meet the specifications and expectations. It should be understood that quality is not a once off activity, it is a process much wider than often talked of. The quality of the personnel, the quality of materials used, the environment and its suitability for good working and workmanship, the quality of the tools used and the management itself. All these put together create room for the possibility of total quality.

**Human Resource Management:** HR management starts with recruitment, selection, induction, training and the general services provided to the personnel to create a conducive environment. This should not be restricted to the HR department as they do not work with the people at the operations level. The managers and supervisors in different places need to be able to understand basic labour relations principles and Basic Conditions of Employment to avoid unnecessary conflicts which may be destructive. The human being is the single most important asset in an operation, it is people who work to get results. Good HR policies and strategies will go a long way to improve the performance of the employees.

**Communications management:** Project communication is a critical link between; people, ideas and information necessary for success. Communication management entails the communication plan, the distribution process, the performance evaluation reporting, and the administrative closure. The relevant people need to be communicated to timeously, and in a media best suited for the type of message to be passed around. 80% of the manager’s time is spent in communicating in one form or the other.

**Risk management:** the management of uncertainty in the future which could result in failure or success of the project. To be forewarned is to be forearmed. Risk management is identifying, analysing and pre-empting of possible problems or failures caused by uncertainties. It involves minimising the possible negative impact and maximising the prospects for success. During the planning stages extensive effort should be put to identify any possible factors that may cause delays, disrupt operations, or even bring the execution to a standstill.
**Procurement management**: procurement is the process of acquiring the resources, generally referred to specifically in relation to materials needed for project execution. Procurement management involves; controlling, evaluation of the processes and policies required to acquire resources, goods and services from outside of the project. It may involve lengthy tender processes depending on the nature of the project, it should be said that this processes is crowded with high levels of infidelity.

**Project integration**: Project integration; re-directing of project resources; processes and creation of a unified culture to focus on the project objectives. Project integration management involves coordinating all project activities (initiation, planning, execution and closure) and systems (costs, schedules, quality, staffing, and the others) to ensure maximum benefit for both the project and the organization. Besides that, managers generally work in silos (each in their section), project integration brings together all the operations into one entity by use of regular meetings where feedback, progress, challenges and all other activities and problems are discussed.

Project management is in nature a once-off undertaking with no room for re-doing without extra costs in terms of both money and reputation. Too much pressure is exerted to get it right first time. There are too many people with an interest in the project, and their interests are too often divergent from the objectives of the organisation and the purposes for which the project is initiated. From the literature review the researcher is postulating that effective project leadership is influenced by certain factors such as internal factors (resources, the skills necessary and related things) leader behavior (human relations, ability to make prompt decisions, and emotional intelligence), external factors (labour unions, government and the society), and project related processes (size and type of project, and the others).

An aspect of the stakeholders that are critical to project leaders in this study is the human resource element that works with the project leader. It is evident that there needs to be a form of relationship between the project leader and the people who execute the project processes. The project leader works with people to accomplish the objectives, leaders get work done by influencing people through power, and power is the ability to influence people to get work done (Hellriegel, Jackson, Slocum, Staude, Amos, Klopper, Louw & Oosthuizen 2007:287). This power can be classified into different forms of power, namely, legitimate power, reward power,
coercive power, referent power and expert power. Robins (2005:392) suggested that power can be divided into two forms, formal power and personal power. The different forms of power has recorded in the existing literature are highlighted below.

The different types of power are formal and informal power. **Formal power** can be divided into; coercive, reward, legitimate, and information power.

- **Coercive power**: out of fear for punishment if one does not take instructions. Generally used by people in positions of authority where they are able to punish disobedience.

- **Reward power**: the opposite of coercive power, where people act because of the benefits or rewards they get from taking directives.

- **Legitimate power**: stems from occupation of formal position in the organisation, hierarchical in nature and can use the first two if need be. Accepted by followers as having the right to lead.

- **Information power**: this stems from the person’s ability or accessibility to certain information, knowledge or resources making other people dependant on him or her.

On the other hand informal power, or power that resides in a person outside of a formal position of power, this comprises of; expert power, referent power, charismatic power, and cognitive persuasive power. **Informal power** relates directly to the person, to the individual leader and it is discussed briefly below:

- **Expert power**: stems from specialist skills and competencies, technical knowhow and any other unique competencies not easy for the others to copy.

- **Referent power**: due to personal traits or form of publicity due to achievements in special or specific areas.

- **Charismatic power**: derivative of referent power and due to an individual’s personality and interpersonal style, may not necessarily be in formal position.

- **Cognitive persuasive power**: the ability to use logic and consistency to get cooperation to achieve the greater picture for the firm.
Keagan, and Hartog, (2004:609 - 618) stated that the basics of effective leadership include core leader competencies and a follower or followers. Leadership involves influencing and motivating other people to work towards the attainment of organisational objectives and goals. Because leadership involves the leader and the followers, it becomes imperative therefore that the two groups, the leader and the follower, must have an agreeable and satisfying interpersonal exchange process. Whilst leaders have specific powers bestowed on them by the position as discussed above, the powers should be interpreted according to the type of followers and the circumstances under which they lead the followers. The powers of the project manager are limited, the project leader has no direct authority over most of his workmates, thus an authority gap exists. The presence of the authority gap therefore reduces the type of powers that the project leader may resort to in order to influence the colleagues (many times same level or senior to him) to achieve certain objectives with specified times. The circumstances therefore dictate that the project leader may use mostly personal power based presumably in the expertise, the respect because of other achievements, the charisma, and cognitive persuasive power. Toor & Ogunlana (2008:420 - 430). suggested that leadership should be knowledgeable, and a clear effectiveness in leadership enables the followers to take risks for success. The five forms of power as they are known in management literature are authority, control over rewards, control over punishments, appealing personal characteristics, and expertise.

The project leader has no authority because of the nature of the matrix structure in which the manager operates. The nature of the matrix structure is such that strong cooperation is needed from the functional departments. The authority gap features as a hindrance to effective project management. Leadership without power is therefore complex and calls for other competencies outside the ordinary. Keagan, and Hartog, (2004:609 - 618) suggested that transformational leadership as seen in core leadership competencies such as empowerment, intuition, vision, value congruence and self-management, was a key element to effectiveness. Because the powers needed and used vary depending on the structure and circumstances of the leader. Leading is therefore a process and is not static for all purposes. Some of the
core competencies which are essentially overlaps of leadership are empowerment, intuition, self-management, vision and value congruence.

1.3 PROBLEM STATEMENT
The role of a project manager is essentially an integrative function cutting across the organisational 'silos' to coordinate human and material resources, information and operating systems as a way of bridging the authority gap. Project managers need cognitive persuasive power which uses logic and consistency to get cooperation from the functional managers.

The limitations of the project manager and the authority gap demand a different way of achieving the objectives without the necessary authority that is found in formally structured routine operations. It therefore becomes imperative that a project manager uses tools, techniques and competencies that do not reside with traditional management systems and approaches.

The differences in the circumstances under which the general and project managers operate create a need for a closer look at what competencies are needed by effective project managers. The study seeks to identify the ideal strategic leadership patterns, core competencies, and critical core competencies used by effective project leaders.

1.4 RESEARCH OBJECTIVES
The research objectives can be broadly understood as the intentions or the intended deliverables at the end of this study. The research seeks to identify and by way of research seek to construct a model ideal for use by the project managers. The model should enable project managers to reduce conflict in projects, reduce the probability of project failure which results in loss of funds, and instead increase the rate of project management success.

Primary objective

The primary objective of this research is to add to current knowledge through the identification of critical core competencies indispensible for effective project execution.
To achieve this primary objective the following secondary objectives will constitute part of the study.

Secondary objectives

- To establish through research the generic competencies needed for effective project management.
- To establish by means of a survey, indispensible, critical core competencies for successful project leadership.
- To identify from the empirical research leadership styles that may be best for effective project management, and
- To formulate strategies to reduce authority gap for project managers and effective project management.

1.5 RESEARCH QUESTIONS
The following research questions are derived from the preceding literature and problem statement.

- What competencies are generic to reduce authority gap of management?
- What knowledge areas are effective for successful project leadership?
- Does emotional intelligence of the project manager have an influence on effective project leadership?
- Does project manager’s leadership style have an impact on effective project leadership?
- Does project manager’s personality have an impact on effective project leadership?
- What forms of power and networking impact effective project leadership?
- Does effective project leadership reduce authority gap experienced by project managers?

1.6 RESEARCH HYPOTHESES
Hypotheses are tentative assumptions of a relationship or relationships between two or more examinable variables (Katz, 2009:48). These assumptions are to be stated in a format that enables statistical testing by measuring the relationship between the
variables. The following hypotheses are based on information from the literature review.

There are two sets of directional hypotheses.

1.6.1 First set of hypotheses
H₀¹ There is a relationship between communication and effective project leadership
H₀² There is a relationship between leadership style and effective project leadership
H₀³ There is a relationship interpersonal relations and effective project leadership
H₀⁴ There is a relationship between personality and effective project leadership
H₀⁵ There is a relationship between understanding of knowledge areas and effective project leadership
H₀⁶ There is a relationship between emotional intelligence and effective project leadership
H₀⁷ There is a relationship between networking and effective project leadership
H₀⁸ There is a relationship between the type of power and effective project leadership

1.6.2 Second set of hypotheses
H₀⁹ There is a relationship between effective project leadership and authority-gap reduction.

1.7 CONCEPTUAL MODEL AND THEORETICAL FRAMEWORK OF THE STUDY
Further to the preceding literature review and the twenty one years industrial experience in both marketing and project management, the researcher has developed a conceptual framework that explains the circumstances under which project managers work. Without giving a detailed list of all competencies and relationships prevailing in contemporary literature, the researcher presents the theory around project leadership in the firms diagrammatically in Figure 1.1 The diagram illustrates the conceptual and theoretical framework of project leadership, indicating some of the critical variables.
The integrated nature of project management demands efficient passing on of information to stakeholders in time. The overlaps in the processes create problems and possible disruptions if they are not communicated *timeously* and *adequately*. The other project requirements, good networking, good interpersonal relations, good knowledge of the areas that make projects succeed, proper use of appropriate power, all under good levels of emotional intelligence are assumed to facilitate project leadership in the presence of the authority gap.
1.8 RESEARCH METHODOLOGY
Because of the nature of the problem and the primary research objectives that seek to find cause and effect relationship, a combination of qualitative and quantitative research will be used. In spite of the controversies around the positivistic and phenomenological research paradigms the researcher is of the opinion that both will contribute to the required knowledge.

The research method will be undertaken in two stages namely an extensive literature review and an empirical study.

1.8.1 Research design
Research design is the blueprint or the plan and structure designed for the collection, measurement and analysis of the data used to answer the research questions (Blumberg 2008:195). In this study the plan includes the interviews, analysis of records, and the nature of the data collection instrument stipulating both the plan of investigation and the structure of the research problem.

Both the quantitative and qualitative research methodologies will be used with the aid of a questionnaire.

1.8.2 Target population
Population in this study refers to objects or the subjects with specific characteristics, which consist of the total collection of the individuals from which the study will be carried (Welman, Kruger & Mitchell 2008:54). This comprised of internal stakeholders such as project managers, project team members at management functional level and project sponsors. The requirement is that these managers and sponsors be directly involved in the execution of the project and therefore have first-hand experience in terms of what they perceive to be the core strategic leadership competencies for effective project leadership.

- Sampling frames, sampling and sample size
A sample is a part of the population that is selected for the study and sampling is the method used to select that part of the population for the purposes of the study (Blumberg 2008:228). The sample frame in this study is constituted by the correct list of the population members directly involved in project management as either project managers or team members and stakeholders.
Simple random sampling was used to identify organisations involved in project execution. From these organisations all project managers and project team members heading functional units were interviewed. The use of all members in the same organisation is meant to cut down on time and costs.

The sample size for the study has been fixed at a minimum of 450 project managers or professionals in project management in all types of projects. According to Welman et al. (2008:71) the larger the sample the lower the standard error, thus the number of units involved in this study is critical for the proper analysis and conclusion of the study. Maree (2008:179) suggests the consideration of eight factors that influence the decision on the size of the sample, the type of research, research hypotheses, financial constraints, importance of the results, number of variables to be studied, methods of data collection and the levels of accuracy required.

1.8.3 Data collection method and the research instrument

A pilot study was conducted prior to the distribution of the questionnaire. According to Zikmund (2003), it is advisable to test survey questionnaires on a small group of individuals who are representative of the population. The main aim is to identify any possible mistakes and to gather any relevant comments or suggestions. The instrument was initially sent to a minimum of 20 project managers chosen randomly. The pilot study received positive responses from project management practitioners. The feedback from the project managers was then used to reconstruct the questionnaire for the research. The reconstructed instrument was subsequently used to collect data from the respondents. This data further needed to be analysed properly to provide accurate information to compile the empirical findings of the study.

1.8.4 Data analysis

The research process goes through five steps, namely; planning, the data collection or fieldwork, editing of data collecting instruments to eliminate obvious errors during the collection of data, the coding of the information collected (this is captured on to the computer): and data analysis follows as the last step.

The first step in the analysis is descriptive statistics which entails ordering and summarizing of the data through tabulation and graphic representation, this is
followed by the calculation of the descriptive measures. This displays the inherent trends observed from the data collection.

The second step is statistical inference, which entails drawing inferences about the population from which the sample was drawn. This is done by using descriptive measures that have been calculated.

Descriptive statistics and statistical inference are the two main aspects of the data analysis; cognisance should be taken of the reality that information on any population will never be 100% correct. This introduces another concept to data analysis, the theory of probability, this is the bridge between descriptive and inferential statistics.

The objectives of data analysis are essentially to get a feeling of the data, testing the goodness of the data and testing the hypothesis for the research (Sekaran, 1992:282). This is based on statistical regularities in the occurrences of certain elements of the research instrument. This regularity assists in establishing inferences and identifying possible characteristics that may be required as critical core competencies for effective project management. Collis and Hussey (2003:17) postulate that the choice of the methods and techniques used for data analysis depend on the type of data; qualitative or quantitative. The data to be analysed in this study is quantitative, the questionnaire was assigned numerical values to measure the importance of given behavioural expectations by the respondents.

Three principles were used for the actual statistical analysis, namely:

- The data had to undergo exploratory factor analysis to assess discriminant validity of the measuring instrument.
- Testing the measuring instrument’s reliability by measuring internal consistency (Cronbach alpha reliability coefficients).
- The instruments found both reliable and valid is used in the model for regression analysis to assess the independent variables. The STATISTICA (Version 10) computer program was used.
1.9 SIGNIFICANCE AND CONTRIBUTION OF THE STUDY

Brown and Hyer (2010:6) state that there is an increase in the number of projects that organisations get involved in for various reasons. The increase in the number of students wanting to study project management in tertiary institutions, together with the increase in the number of advertisements for project administrators and managers, necessitates focusing on this growing discipline. The current definition of projects includes any undertaking that has a start and end date (Burke, 2007:14), meaning therefore that all such undertakings are projects. The field has become so wide, the demand is great, yet not much is understood about the projects considering the presence of the authority gap. This study seeks to focus on the human element, specifically the leadership, because there is growing realisation of the critical importance of the project leader (Burke, 2010) which was previous ignored. An understanding of the competencies required will assist both the academic (to focus on this area and add more knowledge) and the practitioner in that they will know what is required of them.

The study will contribute tremendously towards the understanding of the requirements from the prospective manager, to be used for both training and practical purposes. The study will also open up more issues for further discussion and research as the comprehension of this fast-growing discipline will increase and get better. Training institutions and company on the job training programs will focus on the critical core competencies required for effective project leadership.

1.10 KEY CONCEPTS OF THE STUDY

Authority: the rights inherent in a managerial position to give orders and expect the orders to be followed. (Robbins, 2005). Often used interchangeably with power, but is distinguished from power in this study, as it specifically refers to the context above.

Authority gap: the absence of the right for a manager to give orders to a subordinate, commonly found in matrix structures where dual loyalty is practiced (Jowah, 2012:1097 - 1106). The authority gap is caused by secondment of personnel to the project manager for a given period, but the project manager does not have the authority to hire, fire, promote or influence remunerations.
Authority gap reduction: activities that the project leader gets involved in which will result in the reduction of the authority gap which impacts negatively on the powerlessness of a project leader in a matrix structure.

Competencies: are sets of or combination of knowledge, skills and behaviour used to perform certain tasks in a given environment, these may include both technical and soft skills that an individual have which will be relevant to the task (Gray and Larson, 2008:47).

Emotional intelligence: the ability or skill to understand and manage self-awareness, identify, assess, ability to perceive, control and evaluate emotions and control the emotions of oneself, of others, and of groups (Goleman, Boyatzis and McKee (2002). This is divisible into five competencies, namely; self-awareness, self-regulation, self-motivation, empathy and social skills. Turner and Muller (2005:149 - 161) observed specific instances where appropriate leadership styles, competence and emotional intelligence of the leader produced effective project leadership.

Interpersonal relationship: refers to the ability of an individual to create association(s) with other people based on inference, or merely regular social interaction or business interactions which involves mutual respect and the building of a friendship or acceptance of sorts. Interpersonal relationships is a state formed by the individual’s choice and can be formed in the context of cultural, kinship, marriage, neighbourliness, business, religious, or other influences that may create an opportunity for interaction and socialisation.

Leadership: is a social process of influencing people to work voluntarily, enthusiastically and persistently towards achievement of common goals and is not restricted to a formal position (Bargrain, Cunningham, Potgieter, and Viedge, 2010:288). The best understanding of leadership can be derived from making comparison with management; managers develop plans and implement them within the vision and mission of the organisation, whereas leaders create the vision, inspire people and propel people to work towards the objectives willingly.

Matrix structure: A structure that creates dual lines of authority and combines both functional and product departmentalization (Robbins, 2005). This type of structure
combines the traditional departments seen in functional structures with project teams. In a matrix structure, individuals work across teams and projects as well as within their own department or function. Thus; a task team established to develop a new product will be comprised of people from marketing, research and development, sales, finance and other relevant sections, all of them reporting to one person for the duration of that task.

**Personality:** is the particular combination of emotional, attitudinal, and behavioural response patterns of an individual or the sum total of how an individual reacts and interacts with other people (Bergh and Theron, 2004:338).

**Power:** is the ability of an individual to influence the behaviour of other individuals or people with or without resistance (Robbins, 2005). Power is known to have power bases, and some of the types of power based on their source are; coercive power, legitimate power, reward power, expert power, referent power, and personal power.

**Project:** a temporary undertaking with a specific start and finish date constituted by teams within or across organizations to accomplish particular tasks under time constraints, quality specifications, budget limits and predetermined scope. Projects are once-off undertaking which will not be repeated and are limited by time which puts a lot of pressure on how they operate. Generally the project manager is not fully empowered to take charge of the whole operation including the supply of the resources.

### 1.11 STUDY OUTLINE

In Chapter One the background to the study including the research methodology, population, sampling, and data analysis are introduced and discussed briefly.

Chapter Two will focus on management theories and their impact on general effectiveness of managers across functional and varying organisational types.

Chapter Three will discuss organisational structures, theories and leadership styles and their impact on management in general and project management in particular.

Chapter Four pays attention to project management success variables across industries and project types.
Chapter Five addresses project knowledge areas and their impact on project success with expectations from an effective project manager.

Chapter Six concentrates on traditional and contemporary challenges in the management of projects.

Chapter Seven addresses conceptual framework and conceptual model of the study with specific reference to the purpose of the new model, the theories and previous research that guided the construction of the new model.

Chapter Eight introduces details in research methodology, research and data collection methods, construction of the instrument, research designs, and the type of data collection instrument and the design of the instrument.

Chapter Nine will provide the research results, the raw data with tables and graphs and explanations of the diagrams emanating from the statistical analysis.

Chapter Ten comprises the conclusion and recommendations, hypothesis evaluation, discussion of limitations, identification of future study areas and overall the new knowledge to be contributed to the body of knowledge.
CHAPTER TWO
OVERVIEW OF MANAGEMENT AND LEADERSHIP THEORIES

2.1 INTRODUCTION
Solid management theories are the only tools that managers can use to plan and forecast future endeavours with any degree of confidence and certainty in an effort to meet organisational objectives (Smit, Cronje, Brevis & Vrba 2007:25). Stoner and Freeman (1989:33) posited that the theories and principles of management make it easier to understand underlying processes that enable the manager to take appropriate decisions. Without management theories, managers are compelled to resort to the use of intuition, hunches and hope, all of which bring serious limitations to effective management in this ever changing and increasingly complex operational environment.

Consequently, solid management theory and management thought seek to describe the circumstances under which certain management activities operate and how the theory should assist in effective decision making (Dessler 1985:14). Cognisance is taken of other decisions that do not need to be officially documented, and may not be based on either theory or organisational structure. Such problems primarily are due to bad communication between functional entities that the manager can select if he / she uses Management By Walking Around (MBWA) (Gray & Larson 2008:366). Peters and Waterman (1982) perceived MBWA as an effective informal face to face interaction technique where a manager walks around a work area without scheduling formal meetings.

It is important to state that these theories bring to the manager a degree of predictability into management, which helps to reduce the impact of certain foreseeable risks in the business. Bateman and Snell (2007:16) defined management as the process of working with people and resources to accomplish organisational goals effectively and efficiently. Jones and George (2009:5) concurred and added that management comprises planning, organising, leading and controlling of resources to effectively and efficiently achieve organisational goals.
Consequently the managers will need both information and structure. As a science, management has evolved over the years passing through many stages (Bateman & Snell 2007). The current management theory was developed mostly in the twentieth century, this period was characterised by rapid changes due to the Industrial Revolution and the two world wars (Smit et al. 2007:26). Bateman and Snell (2007) postulated that a theory is a process that is built in stages, namely:

- gathering of data regarding a phenomenon – what managers do.
- organising data into categories – planning, organising, leading and controlling
- highlighting significant similarities and differences; and
- making generalisations explaining causes and effects

Figure 2.1 is a summary of the different stages of the development of a theory.

Figure 2.1: Development of theory

STAGE ONE: GATHERING INFORMATION

Information gathering by way of observation, research on what the managers do and how they do it. The circumstances under which they operate and reasons why they do what they do.

STAGE TWO: DATA CLASSIFICATION

The data is grouped according to similarities, in the form of activities, circumstances, types of problems, types of solutions, results of decisions taken etc.

STAGE THREE: SIGNIFICANT SIMILARITIES HIGHLIGHTED

The data is categorised into researchable units, interesting observations isolated and documented according to differences, independent and dependent variables, and possible construction of hypotheses.
STAGE FOUR: MAKING GENERALISATIONS

The hypotheses are tested through research (survey or observations) developed into theories that are often used to decide on how to manage or solve problems. The Theory.

(Source: Researcher’s own construct)

By definition, a theory is a principle or set of principles designed to explain the relationship between two or more observable facts (Stoner & Freeman, 1989:33). It seeks to draw or assist in providing predictability given the observable variables. In this context, management theory can be defined as a group of assumptions advanced to explain the relationship between variables that need to be considered in making effective decisions for the effective and efficient functioning of an organisation. The need for effective decisions in an environment of increasing uncertainty necessitates the study of management and its theories (Provitera, 2003:152-154). Theories of management impact on general effectiveness of managers, subordinate opinions about management styles, functional department managers and their effectiveness. These theories are affected directly by the inevitably ever-changing environmental factors (Bateman & Snell, 2007:34). The unpredictable environmental forces, namely: micro, market and macro forces exert pressure on managers to keep shifting in an effort to find the most ideal operational equilibrium, thus contributing to the evolution of management theory.

2.2 EVOLUTION OF MANAGEMENT THEORIES

The study of the evolution of management theory is essential in understanding how managers should manage effectively and efficiently at different times and circumstances (Jones & George, 2009:41). These authors classify the evolution of management into five theories evolving from 1890 to 2000, these are: scientific management theory, administrative management theory, behavioural management theory, management science theory and organisational environmental theory.
It should be understood that not all forms of management are included, nor was there a global study of these theories. Many other theories of management like the Ubuntu and Patriarchal models in Africa, the Abrahamic models, the Chinese Implicit Management models and the Japanese Family Based leadership systems have not been studied to any considerable degree. The management theories discussed in this chapter are primarily what is recorded in literature from Europe and America only. These evolutionary stages are depicted in Figure 2.2

**Figure 2.2: Evolutionary stages of management theory.**

(Source: Jones & George 2009)

### 2.3 SCIENTIFIC MANAGEMENT THEORY

The scientific management theory is a system developed by American industrial engineer and business man Fredrick Winslow Taylor which was used to gain maximum efficiency from workers and machinery. Soon after the industrial revolution of the west during the last decades of the 19th century, there emerged a management thought across all disciplines. Political, educational and economic disciplines tried to find better ways of satisfying customers’ needs. Many technical, economic and cultural changes were taking place and this informed the management thought and the way managers viewed organisations and how to manage them. Small factories run by hand-manufacturers developed, soon
thereafter, with the invention of the steam engine they resorted to using sophisticated machinery.

Consequently, the levels of production increased, the type of skills required changed, and the quality of the products improved and managers were caught unprepared. They had to change to meet the new status quo. The majority of managers and owners were generally engineers who had technical orientations but lacked orientation toward social problems reminiscent of the work environment. Challenges in managing the new-worker-task mix forced managers to focus on new methods to employ to increase performance.

Adam Smith, a Scottish political economist is well known for his monograph: The Wealth of Nations which established the ‘classical school’ of management. He became the father of ‘liberal economics’ and argued strongly in favour of market and competition as main focuses for economic activity and not tariff policies. He is specifically credited with building the modern thought and concepts about business management theory and practice. In the 1700s Adam Smith roamed Europe trying to understand the effects of the Industrial Revolution on management theory (Smith 1982). He established that productivity was higher in factories where there were specialisation of labour. Specialisation implied improvement in productivity and product quality. Skills were accordingly developed due to specialisation, and this contributed to the management thought of the day and the ensuing organisational structures (March & Simon, 1958).

According to Fredrick Taylor’s observations, the time taken by individual operators to produce a unit of finished goods would be reduced by increasing the job or task specialisation and division of labour. Based on his experience and studies as a manufacturing engineer working in the production units, he developed four principles on the basis of which his scientific management theory hinges, these principles are:

- Study the way workers perform their tasks and gather all the informal job knowledge that workers possess, and experiment with ways of improving how their tasks are performed. Based on this, he designed the time and motion study designed to carefully time the actions taken to perform tasks. Taylor
tried to find ways to improve each worker’s ability by performing particular tasks.

- Codify the new methods of performing tasks into written rules and standard operating procedures. Once the best methods were identified, they were recorded and were taught as new methods of improving efficiency in manufacturing.

- Carefully select workers who possess skills and abilities that match the needs of the task, and train them to perform the task according to the established rules, standards and procedures, and

- Establish a fair acceptable level of performance for a task and then develop a pay system that provides a reward for performance above the acceptable level.

2.4 ADMINISTRATIVE MANAGEMENT THEORY

The administrative management concept is the study of how to create an organisational structure and control systems that lead to high efficiency and effectiveness (Jones & George 2009:49). According to Hellriegel and Slocum (1996:48), administrative management theory focuses on the manager and basic managerial functions. Fayol (1949) was the first to group managers into functional units.

Fayol developed fourteen management principles, as cited by Hellriegel and Slocum (1996:49). These principles are detailed in Table 2.1 below.
Table 2.1: Fayol’s 14 management principles

<table>
<thead>
<tr>
<th>Principle</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Division of labour</td>
<td>specialisation allows people to be efficient in their job</td>
</tr>
<tr>
<td>Authority</td>
<td>managers must have the authority to give orders to workers</td>
</tr>
<tr>
<td>Discipline</td>
<td>there must be set rules to be followed by workers</td>
</tr>
<tr>
<td>Unity of command</td>
<td>an individual employee must report to one boss</td>
</tr>
<tr>
<td>Unity of direction</td>
<td>all activities should be aimed towards specific objectives</td>
</tr>
<tr>
<td>Individual interests</td>
<td>the interests of the organisation are given priority first</td>
</tr>
<tr>
<td>Remuneration</td>
<td>payment should be commensurate with service provided</td>
</tr>
<tr>
<td>Centralisation</td>
<td>the ultimate authority should reside with the manager</td>
</tr>
<tr>
<td>Scalar chain</td>
<td>single line of authority through the hierarchy</td>
</tr>
<tr>
<td>Order</td>
<td>workers must be at the right place at the right time</td>
</tr>
<tr>
<td>Equity</td>
<td>managers should exercise friendliness and fairness to workers</td>
</tr>
<tr>
<td>Stability of staff</td>
<td>high labour turnover is not good for the organisation</td>
</tr>
<tr>
<td>Initiative</td>
<td>workers should be allowed to innovate and carry out plans</td>
</tr>
<tr>
<td>Esprit de corps</td>
<td>team spirit gives an organisation synergy and unity</td>
</tr>
</tbody>
</table>

(Source: Hellriegel and Slocum (1996:49).)

The administrative management theory emphasises bureaucracy and authority, as briefly summarised above. Managers in many organisations continue to use some of Fayol’s theories of management even though they may be practising the administrative management theory. Managers tend to use systems they perceive to be relevant to them, depending on their understanding, type and style of management and the type of industries. It is important to acknowledge that Fayol’s theory had foresight in many aspects, such as the division of labour; though he championed job specialisation and the division of labour, he pointed out the negatives for job specialisation e.g. boredom which would cause a fall in product quality, and reduction of workers’ initiatives and flexibility at work.
Rodrigues (2001:880-889) drew a comparison between Taylor’s principles then and their application in today's structure in the industry and concluded as illustrated in Table 2.2 below.

**Table 2.2: Contrast of Rodrigues and Faylo’s management principles**

<table>
<thead>
<tr>
<th>Principle</th>
<th>Then</th>
<th>Now</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Specialisation of worker’s job design</td>
<td>Generalisation in worker’s job design</td>
</tr>
<tr>
<td>2</td>
<td>Managers are empowered</td>
<td>Employees are empowered</td>
</tr>
<tr>
<td>3</td>
<td>Formalised controls</td>
<td>Informal, peer pressure controls</td>
</tr>
<tr>
<td>4</td>
<td>Subordinates report to one boss</td>
<td>Subordinates report to multiple bosses</td>
</tr>
<tr>
<td>5</td>
<td>Functions have one plan and boss</td>
<td>Functions have multiple plans and bosses</td>
</tr>
<tr>
<td>6</td>
<td>Workers are committed to the firm</td>
<td>Symbiotic relationship of firms and workers.</td>
</tr>
<tr>
<td>7</td>
<td>Reasonable pay reward system</td>
<td>Performance based reward system</td>
</tr>
<tr>
<td>8</td>
<td>Trickle-down decision making</td>
<td>Task relevant, ad hoc decision making</td>
</tr>
<tr>
<td>9</td>
<td>Hierarchical formalised structure</td>
<td>Less formalised and flatter structure</td>
</tr>
<tr>
<td>10</td>
<td>Internal information control system</td>
<td>Internal information coordination system</td>
</tr>
<tr>
<td>11</td>
<td>Commitment through kindness</td>
<td>Commitment through sense of ownership</td>
</tr>
<tr>
<td>12</td>
<td>Train and encourage employees</td>
<td>On-going trainee development</td>
</tr>
<tr>
<td>13</td>
<td>Managers conceive and apply ideas</td>
<td>Workers conceive and apply ideas</td>
</tr>
<tr>
<td>14</td>
<td>High morale among workers is imperative</td>
<td>High morale among workers no is not an imperative</td>
</tr>
</tbody>
</table>

(Source: Rodrigues 2001:880 – 889)

The changes in the applicability of the principles postulated by Fayol should be understood in the context of the passage of time. Morley (1974) posited that our society is characterised by rapid growth and a shift from manufacturing to service based industries with enormous growth in the knowledge industry.
This growth is seen in the high levels of affluence, education, and leisure, by instability and uncertainty, by change becoming a way of life. Consequently there is a need for new organisational, political and cultural values at the expense of the old traditional organisational forms of management and politics (Schick 1971). The post-industrial society demands faster organisational decision making systems to be used more frequently and with consideration of more variables and more complex relationships among these variables (Huber 1984:933). Decision making is now much more complex than in the past and there is a need for more effective managers in many organisations, specifically in the large service-based and high-tech organisations (Simon 1973:268-278). In today’s environment where change takes place rapidly, application of the principles enunciated by Fayol is of little relevance; the industry has been taken over by use of robots in place of human beings, use of teams for decision making has become the norm, the project-type-nature of the work requires multi-boss (matrix) structures to produce an organisational based pool of skills for effective performance (Rodrigues 2001:880-889).

2.5 THE THEORY OF BUREAUCRACY.

Bureaucracy in essence is a formal fixed structure or system of organisation designed to improve efficiency in organisational operations. Bureaucratic management is a traditional system that depends on hierarchical structures and rules and procedures with clearly defined labour functions and reporting structures. The emphasis is on reporting and accountability giving authority to higher structures. Webber (1946) described the principles of bureaucracy, shown in Figure 2.3.

**Figure 2.3: Structures of bureaucracy**

- System of written rules and standard operating procedures that specify how employees should behave
- Clearly specified hierarchy of authority
- Selection and evaluation system that rewards employees fairly and equitably
- Bureaucracy should have
- Clearly specified system of task and role relationships

(Source: Adapted from Webber 1946)
The Webber model was developed during the industrial revolution at a time when Germany was striving to be a world power. Weber, a German sociologist was concerned with the more fundamental issues of organisational structure. He posited that any goal-oriented organisation with thousands of employees needed a carefully controlled regulatory system. The theory of bureaucratic management stressed the need for a clearly defined hierarchical structure with clearly defined rules and regulations. Weber postulated five principles of a hierarchy as cited by Jones and George (2009:50) that comprise the following:

- In a bureaucracy, a manager’s formal authority derives from the position he or she holds in the organisation’s hierarchical structure.
- In the bureaucracy, people should occupy positions because of their performance, not because of their social standing or personal contacts.
- The extent of each position’s formal and task responsibilities, and its relationship to other positions in the organisation, should be clearly specified.
- Authority can be exercised effectively in an organisation when positions are arranged hierarchically, so employees know whom to report to and who reports to them.
- Managers must create a well-defined system of rules, standards and operating procedures, and norms so that they can effectively control behaviour within an organisation.
- The rules as set out by this theory are instructions with specific guidelines and actions to be taken to reach specific pre-set objectives of the organisation.
- Standard operating procedures (SOP’s) are specific sets of written instructions on how a specific task is to be performed or how specific goals can be reached.
- Norms are acceptable codes of conduct dictating as to how people should act in certain circumstances, they are not written down.

Webber (1946) believed that the specification of positions, the use of rules and the SOPs would make it easy for the manager to perform his duties; organise and control subordinates. Fair and equitable selection and the promotion systems were meant to improve the manager’s feelings and reduce work stress, install a sense of security and subsequently encourage employees and all stakeholders to
act ethically and promote the interests of the organisation. This bureaucratic management system is based on legal authority, which originates from rules and regulations. The system has worked in many settings and is still used in many businesses in South Africa. It is commonly used in mining where safety rules and regulations are needed to prevent loss of life.

Bureaucracies are widely used today despite the red tape and slow decision making aspects of it. Some of the organisations that continue to use bureaucracies are those where:

- large amounts of standardised information is to be processed
- the customers are known and will not change rapidly
- there is little or no technological advances in the industry
- the organisation delivers a standard product or commodity

However, many problems do occur when bureaucracies are not managed properly, rules and SOPs create a lot of red tape and this slows down the decision making process, creates room for inefficiencies, and retard any possible organisational changes. These rules and SOPs lead to autocratic management styles. Figure 2.4 illustrates some weaknesses of a bureaucratic system.

**Figure 2.4 Weaknesses of a bureaucratic system**

(Source: Constructed from information by Rao, 2010:543)
It should be pointed out that government structures are generally based on bureaucratic structures. Other organisations have used the bureaucratic philosophy successfully, for instance McDonalds with their rules and regulations such as ‘always greet a customer with a smile.’

2.6 BEHAVIOURAL MANAGEMENT THEORY

Behavioural management theory is the study of how managers should behave to motivate employees and encourage them to perform at high levels, and to be committed to the goals and objectives of the organisation in general. Parker (1984:736-745) identified certain issues that needed to be modified, namely:

- the human side of management had been ignored
- the involvement of workers was important
- workers should be allowed a development process
- authority should go along with knowledge
- the knowledgeable should have authority of process development
- departmental managers should communicate with each other

McGregor (1960:33-58) proposed two sets of assumptions about how workers attitudes and behaviour affect the behaviour or style of management. These assumptions dominate the way managers think and behave in the organisation. These two contrasting theories were named Theory X and Theory Y. Table 2.3 below is a summary of McGregor’s assumptions.

Table 2.3: Theory X and Theory Y Contrasted

<table>
<thead>
<tr>
<th>THEORY X</th>
<th>THEORY Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees are inherently lazy, they dislike work and will try to do as little work as possible.</td>
<td>Employees are not inherently lazy and love their work if given the chance to.</td>
</tr>
<tr>
<td>Employees must be closely monitored for them to work. If they are not supervised they will not perform.</td>
<td>If there is an environment conducive to work employees will produce. Managers must allow employees to be creative. Employees can find their own direction if provided the opportunity by management.</td>
</tr>
<tr>
<td>Need strict work rules and procedures for workers to perform. Rewards and punishments should be given to employees for them to perform well.</td>
<td>Managers should decentralise authority and provide employees with the necessary resources. Employees informed about the firm’s goals will work to achieve them.</td>
</tr>
</tbody>
</table>

(Source: Adapted from McGregor 1960).
2.7 CLASSICAL AND CONTEMPORARY CLASSIFICATION

According to Kaplan and Norton (2008) the evolution of the theory of management can be classified into the classical approach and the contemporary approach. The classical approach entails the scientific management school, the administrative school approach, the bureaucratic approach, the human relations, and the quantitative management theory.

Figure 2.5 Management theory development stages

(Source: Kaplan & Norton 2008)

The contemporary approaches comprise the systems theory, the contingency theory, the total quality management theory, the learning organisation theory and the re-engineering theory. Whilst the management theory may be reduced to a handful of theory-stages, there are numerous other approaches that managers have employed in between to address pressing problems that needed to be solved. Some of the practices throughout the years are represented diagrammatically in Figure 2.6.
2.8 MANAGEMENT THEORY CHANGE DRIVERS

This section of the literature review cannot be concluded without mention of the change drivers that brought about the shift in management thought. Since the industrial revolution there has been a rapid succession of management thought caused by the dynamic nature of the business environment. At the hub of these changes are the political, economic, socio-cultural, technological, international and environmental forces (PESTIE), shown in figure 2.7.

(Source: Pascale 1990:20)
Most contemporary managers work in mechanistically structured organisations controlled by policies, specific guidelines, methods, procedures, rules and administrative practices that direct the thinking, decisions and actions of managers (Ehlers & Lazenby 2010:343). The policies prescribe the contemporary management thought in response to the PESTIE.

2.9 LEADERSHIP THEORY
Management is too often confused with leadership, Kotler (2001:85) stated that management is about coping with complexities, whereas leadership is about coping with change. Management focuses on directing others whereas leadership focuses on guiding, encouraging and facilitating in pursuit of those objectives (Elhers and Lazenby, 2010:286). Consistently there has always been misunderstandings about leadership and management, and too often these have been wrongfully interchanged. A closer look at them gives a clear distinction between the two, given, that when can be both or may be just one of the two with elements of the other in their character. Table 2.4 illustrates Griffin’s (2005:551) distinction between management and leadership.
Table 2.4: The distinction between management and leadership

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>MANAGEMENT</th>
<th>LEADERSHIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning</td>
<td>Planning</td>
<td>Establishing direction</td>
</tr>
<tr>
<td>Creating an agenda</td>
<td>Establishing goals and formulating strategies and plans to reach the goals</td>
<td>Developing a vision, mission, and strategies for change</td>
</tr>
<tr>
<td>Organising</td>
<td>Organising and staffing</td>
<td>Aligning people</td>
</tr>
<tr>
<td>Developing a human network to achieve the agenda</td>
<td>Developing a structure for the assignment of tasks and resources</td>
<td>Motivating people and teams to follow vision</td>
</tr>
<tr>
<td>Leading</td>
<td>Managing</td>
<td>Dealing with change</td>
</tr>
<tr>
<td>Executing the agenda</td>
<td>The complexities of policies, processes, and procedures</td>
<td>Adjust and innovate systems and processes to reach objectives</td>
</tr>
<tr>
<td>Controlling</td>
<td>Control media</td>
<td>Steering people</td>
</tr>
<tr>
<td>Checking if the agenda is achieved</td>
<td>Comparing the plan and the outcome of the process or project and taking corrective action.</td>
<td>In the right direction through motivation and checking control mechanisms; checking that subordinates follow new direction.</td>
</tr>
</tbody>
</table>

(Source: Adapted from Griffin 2005:551)

Katz and Kahn (1966:334) defined leadership as any act of influence on a matter of organisational relevance. According to Johns and Moser (2001:115-122) leadership is inducing followers to act for certain goals that represent the values and the motivations, the aspirations, and expectations of both the leader and the followers. The genius of leadership lies in the way the leaders see and act on the values and motivations of their followers with a constant focus on the objectives. ‘The mystique of leadership, be it educational, political, religious or commercial is next to impossible to describe, but wherever it exists, morale flourishes, people pull together toward common goals.’ Hesburgh (1971:763-765) concurred and asserted that such leadership always has a moral and intellectual dimension; it requires courage as well as wisdom, it does not simply know, it cares.

2.10 LEADERSHIP THOUGHTS, IDEAS AND THEORIES

There is no central concept of leadership; this contributes to the absence of a standard definition of leadership (Burns 1978:380-383). Scholars on leadership work in separate unrelated disciplines and with unrelated questions and problems, which create a dilemma in specifying factors to be associated with the study of leadership. As such it is more feasible to study the actual behaviour of a leader and not factors associated with the leadership concept. McDonald (1967)
stated that the way a leader interacts with others, and not personal traits, is more
determinative of how successful the leader will be. Leadership presupposes a
particular capacity in a leader and the followers thus focus on observed
behaviour and not personality traits.

2.10.1 The traits theory
Tead (1935) propagated the theory that leaders possessed certain peculiar traits
not found in non-leaders. These included, physical and nervous energy, a sense
of purpose and direction, enthusiasm, friendliness and affection, integrity,
technical mastery, decisiveness, intelligence, teaching skills, and faith. Empirical
theorists identified leadership as a dynamic process dependent on the situation
as informed by changes in leaders, followers and situations (Hersey & Blanchard
1979). The essence of the trait theory is that strong leaders have certain basic
traits or characteristics that distinguish them from non-leaders. The pillars on the
basis of which the traits theory were based, as alluded to above, are used to
construct a traits model. Figure 2.8 depicts the basic characteristics of the traits
theory.

Figure 2.8: Traits theory model

(Source: Author’s construction using information by Hersey & Blanchard (1979).

Michigan and Ohio universities were adversative regarding the trait theory and
the single-continuum approach to leadership. The universities identified two
dimensions of leadership; the task oriented and the interpersonal-relations-
oriented dimension. These dimensions were identified as being mutually exclusive, enabling the leader to combine the two dimensions (Wren 1979) depending on circumstances and leadership style. These studies observed leader behaviour, the overt, rather than the capacity inferred from this behaviour, the covert. No theoretical assumptions were made that leader behaviour exhibited in one situation may be observed in another situation (Johns & Moser 2001:115-122). Leader behaviour focussed on a description of behaviour. The greatest contribution of the Ohio State University between 1946 and 1956 was the separation of the Consideration and Initiating structures as basic dimensions of leadership in formal organisations. The initiating structure was identified as characterised by planning, controlling, organising, communicating, scheduling and coordinating. The Consideration structure theory was identified as characterised by a leader who portrays a high score on mutual trust, respect for subordinates’ ideas, and consideration of their feelings (Korman 1966:349-361).

2.10.2 Situationalist theory
Stodgill (1974) at Ohio State University pursuing the theory on situational leadership found numerous research findings that led to conclusions contrary to the situationalist leadership concept. The findings led to the postulation that a leader has a strong drive for responsibility and task completion, vigour and persistence in chasing after the objectives and goals initiative in problem solving. Together with this was self-confidence, willingness to accept the consequences of his or her action, willingness to take interpersonal stress, ability to influence behaviour, capacity to structure social interaction systems and willingness to tolerate poor performance, failure and delays in pursuit of the set objectives and goals. Johns and Moser (2001:115-122) stated that Stodgill’s study refuted both the trait and the situational leadership theories. The trait theory atomised personal traits of leaders and made them stand-alone determinants of effectiveness of a leader independent of other factors. The situationalist approach excluded the possibility of individual differences rather attributing variations in leadership styles to fortuitous environmental circumstances. This poses a question as to whether the environment needs to change to suit the leader, or does the leader need to change to suit the situation?
2.10.3 Participative leadership

Wren (1979) reported on the participative leadership theory of human *relationists* and organisational humanists as a formidable and more effective way of leadership. This theory had been formulated by Vroom and Yetton (1973:204). It was meant to reduce the power distance between the managers and the subordinates in the organisations. This prescriptive framework accepted that leadership situations applied in specific situations and circumstances. The comprehensive normative model for participative management was meant to give subordinates a greater role in organisational decision making and problem solving and thereby enhance leader effectiveness. Lahti (1973) concurred and associated it with a creative environment that maintained an atmosphere of involvement which would encourage and empower subordinates to perform for the benefit of the organisation. According to this model the effectiveness of an organisation is based on ‘joint function of situational variables expressed as problem attributes and leader behaviour, expressed as processes for making decisions’ (Vroom & Yetton 1973:204).

Likert (1976) observed that in most productive business organisations, much interaction occurred between individuals and groups. This led to the conclusion that an organisation moving from traditional organisation theory to System 4 theory showed improvement in performance, the costs were reduced and both the organisation and the employees were satisfied. Elbe (1978) stated that where flow of information, down, up, and among peers occurred, there was a general acceptance of communication from below; and generally, there was open and honest questioning. Empirical research could not confirm that participative management was the most effective way to lead. Likert (1976) established that high morale did not always lead to higher production, but could not conclusively establish that a production-centred supervisor always had a low producing section.

The new questions that arose for the researchers were:

- Under what circumstances did an employee work better than the other?
- Could Initiating Structure and Consideration be balanced?
These questions formed the basis for the development of adaptive leadership roles (Wren 1979) questioned the existence of a best leadership style, and began the search for the most effective style for particular situations. Hersey and Blanchard (1979:101) posited that the more managers adapt their style of leader behaviour to meet the particular situation and the needs of their followers, the more effective they will tend to be in reaching personal and organisational goals.

2.10.4 Managerial grid

Blake and Mouton (1978) developed the adaptive leadership model, a Managerial Grid (Figure 2.9) with five leadership styles. These styles relate to concern for production, task and concern for people. The different types of leadership are located in four quadrants. Concern for tasks is on the horizontal axis and relationships on the vertical axis. A nine on the horizontal shows higher task orientation, whereas a leader scoring nine on the vertical possesses higher relationship orientations (Hersey & Blanchard 1979).

Figure 2.9: Managerial grid model

(Source: Blake & Mouton 1978)
According to the Managerial Grid model (Figure 2.9) the five different management styles indicate that:

- The impoverished style (1-1) requires minimum effort to sustain the organisation.
- In the Country Club style (1-9) attention to people’s needs and relationships is needed to create a good work tempo.
- The task style (9-1) denotes that human interference is minimised and task importance emphasised above everything.
- The middle of the road style (5-5) requires a balance between maintaining the employee morale and the need for organisational performance.
- The team leadership style (9-9) work is achieved by committed interdependent people working together for a common cause (Blake & Mouton 1978:11).

2.10.5 Fiedler’s contingency model

The ‘No-one-size fits all’ concept is the basis of Fiedler’s contingency model. Fiedler proposed that a number of leader behaviour styles may be effective depending on the situation (Hellriegel & Slocum 1996:457). The model is illustrated in Figure 2.10 below.

**Figure 2.10: Fiedler’s contingency model**

<table>
<thead>
<tr>
<th>Leader-member relations</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Task structure</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Strong</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Weak</td>
<td>Strong</td>
<td>Weak</td>
<td>Strong</td>
<td>Weak</td>
<td>Strong</td>
<td>Weak</td>
<td>Strong</td>
<td>Weak</td>
</tr>
</tbody>
</table>
Positive power leads to Effective leadership

<table>
<thead>
<tr>
<th>Effective leadership</th>
<th>T</th>
<th>T</th>
<th>T</th>
<th>R</th>
<th>R</th>
<th>R</th>
<th>R</th>
<th>R</th>
<th>T</th>
</tr>
</thead>
</table>

KEY T = task-oriented style R = results-oriented style

(Source: Adapted from Hellriegel & Slocum 1996:458)

This model suggested that effective leadership is determined by the ability of a leader to adjust to situations through an understanding of the manager’s own leadership style. There is a need to diagnose the situation and then match the style to the situation. This model characterises the leader in the form of traits that are difficult to change, hence the situation has to be changed to meet the leadership style.

The module states three contingency variables:
- The relationship between the follower and the leader.
- The task structure, and
- The position of power / legitimate authority.

This model remains controversial, but it’s main contribution was that it redirected research with a focus on situations and how they relate to effective leadership. A leader may not be labelled good or bad, but merely not ideal for particular situations and yet may thrive better in other situations (Potter & Fiedler 1993: 61-70).

2.10.6 The 3D theory
Reddin (1967) embraced the concept of four basic managerial behavioural patterns, arguing that any one of these (integrated, dedicated, related and
separated) could be effective in certain situations and not in others. He postulated that ‘each one of the four basic styles had a less effective equivalent (compromiser, autocrat, missionary, deserter) and a more effective equivalent (executive, benevolent, autocrat, developer and bureaucrat) resulting in eight management styles.’ Leader effectiveness therefore depended on matching these dimensions appropriately to meet the situation and type of task at hand. The two basic tenets of Reddin’s theory were that there is no consistent style of leadership that was effective at all times in all situations. This implied that management training was to focus on flexibility in leadership styles rather than entrenching the values of certain leadership styles.

2.10.7 The life cycle theory

The life cycle theory, developed by Blanchard and Hersey (1970:303-310) was based on the curvilinear relationship between Initiating Structure and Consideration behaviour and maturity. The theory seeks to provide an understanding of the relationship between an effective style of leadership and the level of maturity of the followers. Maturity of the followers refers to the ability to understand the responsibility of an individual or group, independence and motivation to achieve. Maturity of the followers is influenced by many factors, among which are: level of education, understanding of the objectives, experience and relationship to the leader. The life cycle leadership model of Blanchard and Hersey is shown in Figure 2.11.
Figure 2.11: The life cycle leadership model

![Life Cycle Leadership Model Diagram](image)

(Source: Smit, Cronje, Brevis & Vrba 2007:283)

The theory pronounces that when the leader works with immature followers, the leader behaviour should move through:

- high-structure low-consideration stages
- high structure-high consideration
- high-consideration-low structure behaviour, to
- low structure-low consideration behaviour

This would be dependent on whether or not the follower progresses from immaturity to maturity. The ideal leadership structure for matured followers according to this theory is; low structure-low consideration.

2.10.8 Tri-Dimensional Leader Effectiveness Model

According to Johns and Moser (2001:115-122), Hersey and Blanchard (1979) refined the Life Cycle Theory by adding an effectiveness dimension and named their model The Tri-Dimensional Leader Effectiveness Model. In this model any dimension could be effective or ineffective depending on the situation. There were close similarities between Reddin’s 3 D Theory, Blake and Mouton’s (1978)
Managerial Grid and Hersey and Blanchard’s (1982) Tri-Dimensional Theory. Hersey and Blanchard concurred with their theory that
- their model measured observable behaviour;
- Reddin and Blake measured predisposition or existing attitude; and
- their model added the effectiveness factor not in the Ohio model.

2.10.9 Situational leadership theory
This theory focuses on the correctness of leader behaviour as determined by the task and the task-relevance of the followers as shown in Figure 2.12.

Figure 2.12: Hersey and Blanchard’s Situational Leadership model

![Figure 2.12: Hersey and Blanchard’s Situational Leadership model](image)


The model illustrates that as the level of follower maturity improves in relation to accomplished tasks, the leader must reduce task behaviour and increase relationship until the group reaches a moderate level of maturity. When the group
moves to the above average level of maturity, the leader needs to reduce both task and relationship behaviour.

The situational leadership approach is full of controversy as a result of contradicting findings from research (Lee-Kelly 2001:463). The underlying question is whether a manager can be able to change his behaviour and leadership style according to the situation and prevailing circumstances. Behaviourists such as, Reddin (1967) asserted that it is possible for the manager to change his behaviour to suit the circumstances. Fiedler (1967) a contingency theorist held a different view and argued that a manager is either relationship motivated or task motivated. Fiedler's model identified the key situational variables that influence a leader's position as:

- the personality of the leader;
- the degree of control at his disposal;
- the composition of the team, and
- the key project objectives.

There is a modern contingency theory which corroborates Fiedler’s earlier findings that states that changes in the leader under different contexts affects group effectiveness. The leader’s personality and motivation are affected by the degree of perceived control and the degree of uncertainty surrounding the situation, these are expressed as relationships between team members, the clarity of the task and the deliverables, and the leader’s positional power in terms of his legitimate right to give directions (Lee-Kelley & Loong 2002:583-591).

2.10.10 House’s Path-Goal leadership theory

Another contingency theory which withstood scientific critique better than others is rooted in the expectancy theory of motivation. This theory states that effective leaders strengthen the performance-to-outcomes expectancy and valences of those outcomes by ensuring that employees are rewarded for their performance.
As a contingency theory the Path-Goal theory postulates that the effectiveness of the leader is dependent on the situation and the task. Effective leaders are those who will be able to select and adapt behavioural styles that suit the situation in which they find themselves. Leaders can use two or more styles at the same time, they can be both directive and yet participative. This model can be best understood from the illustration by Hellriegel and Slocum (1996:462) depicted in Figure 2.13, in which the elements of the model and the resultant leadership styles are clearly displayed.

The Path-Goal Theory of Leadership describes how leaders encourage, motivate and support the subordinates with intentions of influencing them towards achievement of common goals. The leader-manager therefore clarifies the path for the subordinates to know which way to go, remove any difficulties and show them how to remove the difficulties, and rewards them for their performance. Leaders may opt to be directive if they choose, but this is dependent on the type of task, the leader’s perception of the followers, and the general interpersonal climate between the leader and the subordinates.
The model suggests four types of leadership styles, namely; supportive, directive, participative and achievement oriented. Figure 2.13 below illustrates the model.

**Figure 2.14: House’s Path-Goal model**

![House’s Path-Goal model](image)

(Source: Hellriegel & Slocum 1996:462)

The model above describes relationships, identifies a situation and suggests the ideal leadership style and then prescribes the likely impact on the followers and possible results. This enables the leader to decide on a leadership style to suit the followers he is leading, thus the style may be adjusted to suit individuals in an organisation of people with different personalities. The first contingency variable in this model is the follower or employee characteristic, suggesting that different followers will prefer different leadership styles.

**2.10.11 Transformational leadership theory**

This theory suggests that leaders change teams or organisations by creating, communicating and modelling a vision for the organisation. Barling, Weber and Kelloway (1996:827-832) observed that there were changes in the organisational performance of firms where branch managers had completed their transformational leadership training. This theory is arguably the most prominent
leadership form, but it has its limitations, of which, some of the problems encountered are that:

- some researchers define it in terms of the leader's success, and
- the model seems to be universal not contingency-oriented.

Some researchers have recently explored the idea that transformational leadership is more ideal when the organisation needs to adapt than in stable conditions (Egri & Herman 2000: 571-604). Transformational leadership is empowering in that it provides the subordinates the purpose of their existence and their indispensability through a well communicated vision. The subordinates are made to realise their own needs for self-development and the subordinates are motivated to achieve personal and organisational goals.

**Figure 2.15: Transformational theory model**

(Republish with diagrams)

The model above was constructed from a synthesis of information in the literature as reported above (Barling, Weber and Kelloway, 1996:827-832, (Hellriegel & Slocum 1996:462, Egri & Herman 2000: 571-604, McShane & Von Glinow 2009:235, etc). Transformation leaders through their influence persuade subordinates and followers to see the vision, assist them to adjust to the changes
and give them the will to endure change process. A transformational leader appeals to the critical mass of his followers to accept his vision, then, working with them, he seeks to effect the change (Johns & Moser 2001: 115-122). Project management is essentially management of change, meaning therefore that such a theory may be ideal to the project environment. But this theory does not state possible reasons why there is improvement in productivity, nor what exactly about leadership causes followers to be more willing to cooperate.

2.10.12 Implicit leadership theory

The Implicit leadership theory that states that people evaluate leaders’ effectiveness by the extent to which the leaders fit into expectations and beliefs of the followers. Leadership is not about the leaders only, it is largely about the followers and their perspectives and how they are influenced or prepared to be influenced by the leaders (Epitropaki & Martin 2004:293-310). By implication everyone has a leadership prototype – beliefs and perceptions about what an effective leader should be. These prototypes develop through socialisation which shapes the followers’ expectations and in turn affect the ability of the leaders to influence the followers (Keller 2003:141-160). The effectiveness of the leader should have some congruence with the followers’ prototypes informed by preconceived ideas, experience and understanding of effective leadership (Cronshaw & Lord 1987:97-106).

Recent studies have established that there is a strong link between cultural values and perceived leadership effectiveness. Hofstede (1980:42-63) and Bryman (1987:129-141) took cognisance of the role of culture in leadership and concluded that many of the differences in leadership styles, employee motivation, and organisational structure can be explained from a cultural perspective. Western theories of leadership cannot be transposed into other cultural structures without reaching incorrect conclusions. The evaluation of leadership behaviour is a function of both overt leadership and the evaluator's cultural background (Bass 1990).

Explicit theory of leadership is based on observation and evaluation of observable overt behaviour by the leaders (Ayman & Chemers 1983:21-39).
Whereas the implicit theory explores the covert conceptual structure of leadership based on a pre-existing definition of a leader. Implicit leadership traits are based on personal characteristics and attributes that followers expect from the leader. The experience a follower has with a leader is largely influenced by the follower’s implicit leadership theory based on the prototype. These traits exist as cognitive structures and represent a potential acceptance or rejection by followers (Bresnen 1995:495-513). The implicit leadership theory reflects a resurgence of the traits theory, but the emphasis is on the perceptual processes underlying leadership and not leadership effectiveness (Epitropaki & Martin 2004: 293-310).

The construction below (Figure 2.16) is a personal experience of the impact of religion, culture, political environment, and level of education in relation to leadership in the work environment.

**Figure 2.16: Implicit leadership theory model**

![Diagram showing the impact of religious values and beliefs, political environment and legislation, culture, attitudes and perceptions, level of education and task type on leader effectiveness and behavior.](source: Researcher’s own construction.)

As shown in comparative studies (GLOBE Project) the effectiveness or the perceived effectiveness of a leader is based on the cultural, religious and political structure from which the leader comes. It is people who make leaders, it is therefore people who should judge on the success or effectiveness of a leader based on their aspirations and values. Every leader comes from a socio-cultural background which informs his values, and the people from this structure can judge the leader. It may be important to say that the effectiveness or the success of a leader depends on the stakeholder interest. Senior management may find a manager effective and successful if he drives their agenda well and meet set objectives. The followers may think of him as a cruel manager using coercive
methods and not influence to get work done. In the absence of a clear definition of what leadership is, and what constitutes success (between different stakeholder interests), ambivalence can surround the understanding of effective leadership.

2.10.13 Comparison of four contingency leadership models

Leaders are expected to guide and influence followers to work towards efficient achievement of the set goals and objectives. It would be extremely complex to decide on a leader who will be effective to all followers, specifically in a very diverse work environment like South Africa. The contingency models all agree that leadership is a two-way street involving the leader and the followers. It should be highlighted that such followers should be prepared to be led if any leader is to be effective. Successful leaders of necessity, have to be adept in identifying the needs of their followers and the prevailing situation and circumstances. At the basis of this, they need to adjust their leadership style to suit the situation. A comparison of the different contingency leadership models has been constructed in Table 2.5 below.

Table 2.5: Comparison of four Contingency leadership models

<table>
<thead>
<tr>
<th></th>
<th>Hersey &amp; Fiedler’s contingency model</th>
<th>Blanchard’s situational model</th>
<th>House Path-Goal Model</th>
<th>Leader-Participation Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key Situational variables</td>
<td>Task structure</td>
<td>Level of followers’ readiness</td>
<td>Task characteristics</td>
<td>Eight diagnostic questions concerning time, quality and acceptance</td>
</tr>
<tr>
<td></td>
<td>Leader-member relations</td>
<td></td>
<td>Employee characteristics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leader-position power</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leadership styles</td>
<td>Task-oriented</td>
<td>Telling, selling, participating, delegating</td>
<td>Achievement, directive, participative, supportive</td>
<td>Autocratic I &amp; II</td>
</tr>
<tr>
<td></td>
<td>Relationship oriented</td>
<td></td>
<td></td>
<td>Consultative I &amp; II, Group II</td>
</tr>
<tr>
<td>Implications</td>
<td>Leader’s style is matched to situation or situation is</td>
<td>Effective leaders choose a style to match the maturity level of</td>
<td>If tasks are routine and simple, supportive or</td>
<td>Effective leaders analyse the situation by answering the</td>
</tr>
</tbody>
</table>
changed to suit leader’s style. High or low control situations favour task-oriented leader. Moderate control situations favour relationship-oriented leaders

<table>
<thead>
<tr>
<th>Type of Control Situation</th>
<th>Leadership Style</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>High or low</td>
<td>Task-oriented</td>
<td>Favour team-oriented leader</td>
</tr>
<tr>
<td></td>
<td>Relationship</td>
<td>Favour relationship-oriented leader</td>
</tr>
<tr>
<td></td>
<td>Participative</td>
<td>Favour team-oriented leader</td>
</tr>
</tbody>
</table>

If tasks are non-routine and complex, directive or achievement-oriented leadership is best for team members who want self-actualisation.

If eight contingency questions, then choose among the five styles, depending on the answers.

(Source: Hellriegel & Slocum 1996:469)

The ability of a leader to identify a vision, share the vision with the followers and use leadership styles that have congruence with the followers’ prototype and a deliberate effort to take the followers may constitute effective leadership. However, if the leader is effective in the eyes of the followers, but does not achieve the objectives for which his/her leadership was sought for by the employers, the leadership may not be considered effective by senior management.

The leader at all stages and levels is surrounded by a realistic environment that needs a solution. The modern day manager is surrounded by situational factors that need to be controlled; these factors are; the manager’s personal self and issues relating to the manager – traits, etc, the colleagues that the manager works with – their perception of the manager and the personalities of the colleagues themselves, the politics of the organisation and the manager’s level and political and expert power available to the manager, and the legal aspects of the business – labour unions, customer rights, competition laws etc. The project manager’s environment is more complex than this because of the authority gap, this situation is illustrated in Figure 2.17 below.
Figure 2.17: Situational factors of project managers

- **Personal** = personal traits, experience, gender, level of education, culture, level of self-confidence, intelligence, wisdom, ability to supervise, leadership style
- **Colleagues** = expectations, aspirations, level of education, level of participation, positional relationships, experience, prototype congruence, power they have
- **Organisational** = politics and firm’s structure, authority gap, relations with senior management, importance of project to the firm, interests from internal stakeholders
- **Environmental** = legislation and policies, labour union activities, external stakeholders’ interests, customer interests, suppliers, economy and technology

(Source: Researcher’s own construct)

Project leadership takes place in a mix of philosophy, theories, models and peoples’ beliefs and expectations. Complicated by the absence of authority and the presence of the authority gap, there should be some way of leading or compelling factors that enable project managers to succeed in their execution of duties despite the existence of an authority gap.

2.11 CONCLUSION

Leadership theories date back to the very existence of humanity, for as long as there were tasks to be performed and people to perform the tasks. The study of the evolution of leadership theories contribute to the identification of areas where potential leadership mistakes can occur. Whilst academic effort has been extensive and intensive on the study of leadership, people still believe in and practise different theories of leadership. More disturbing is the inability of research to conclusively formulate a single universal definitive leadership theory or model. From an academic perspective, leadership theories can be summarised as follows:

- Early studies emphasised individual characteristics suggesting that leaders are born with leadership traits like physical features and intelligence, observations show clearly that leaders do not show common traits.
- After that theories focussed on leadership styles as the answer to the quest for effective leadership. Evidence indicates that there are no styles better than others, styles are situation dependent.
• The next consideration was of group dynamics and team building, but still does not explain why certain leaders fail and others succeed in the group settings.

• Recent considerations of leadership emphasise particular situations such as; the environment in which the leadership takes place, the type of power with the leader in relation to the followers, the nature of the tasks to be performed, and the ability of leadership to be consistent with organisational goals.
CHAPTER THREE

ORGANISATIONAL THEORY, STRUCTURE AND LEADERSHIP STYLES

3.1 INTRODUCTION
The organisational development theory and the development of structures, different types of leadership styles and their relationship will be discussed in this chapter.

An organisation, as a tool, enables people to facilitate the implementation of set objectives for a group of people with common interests. An organisation is consciously established with specific intentions and objectives to be met. The organisation concept necessitates the establishment of a structure through which the organisation will execute activities intended to achieve specific objectives. The structure of the organisation is an interpretation of the organisational theory by the management and predetermines and influences the ensuing leadership styles that may be used. Organisations are indispensible entities through which human beings achieve set goals and interact in a coordinated fashion with fellow human beings. Structure is therefore an integral component of an organisation. An organisational structure is the formal system of task and reporting relationships that coordinate and motivate organisational members to work together to achieve the organisational goals (Jones & George, 2009:11). The organisational structure is a result of organising, which by definition is grouping people into task-specific departments resulting in authority and responsibilities assigned to the different positions created (Tempel & Walgenbach, 2006:1-24).

This refers to division of labour, patterns of coordination, communication, workflow, formal power and the direction to be taken by the organisational activities (McShane & von Glinow, 2009:255). The organisational chart outlines the reporting relationships, job design, information flow, work standards, rules and procedures and mostly power relations. An organisational structure is an important item of corporate culture which is a critical tool for organisational change and change management according to Rao (2010:375). Furthermore, organisational structure reconfigures power, communication channels and consequently the organisational culture. Altering the organisational structure is a critical toolkit in the management of organisational changes. Organisational
structures by their very nature fundamentally require division of labour and the coordination of the labour (Mintzberg, 1979:3). Job specialisation makes it easier to match people with specific aptitudes and skills to the job for which they are tasked. The more the jobs become more specialised, it becomes increasingly expensive to coordinate different job specialisations. Three types of coordination are recognised in the organisations, namely; coordination through informal communication, coordination through formal hierarchy and coordination through standardisation. Coordination through standardisation has three distinct forms, namely; standardised processes, outputs and skills. The head of this organisational structure is the manager or leader who directs the activities of the organisation.

3.2 OVERVIEW OF THEORIES OF ORGANISATIONS

Aquinas (2008:4) defined an organisation as a consciously coordinated social entity with a relatively identifiable boundary that functions on a relatively continuous basis to achieve set goals. Hellriegel and Slocum (1996:5) stated that an organisation is any structured group of people working together towards known objectives; the structures differ depending on the goals to be achieved. The foregoing definitions define the context in which this study is conducted.

According to Aquinas (2008:15) organisational theory is a study of how design, development and functions of organisations are established. Organisational theory describes how organisations are structured and how they can be improved as they interact with the environment. Organisational theory is a way of thinking about organisations, it examines the principles that underlie the design, operation, change and redesign of organisations to maintain and increase their effectiveness. The organisational theory can be best understood in the context of organisational structure, organisational design and change and organisational culture. Figure 3.1 below provides details of the organisational theory. The lessons of organisational design and change are essential at all levels of the organisational hierarchy because of their impact on the effectiveness of the leadership and the performance of the organisation towards meeting its objectives.
The unique nature of projects demands a unique and specific project structure informed by the task to be performed as to whether the project itself is part of a large organisation, or is a standalone organisation. In principle the matrix is the ideal project structure (Gray & Larson, 2008:118). Conversely these structures may take long to establish dedicated teams because of divided focus and allegiance but may save costs as personnel are sourced and shared from within the organisation.

3.3 FOUNDATIONS OF ORGANISATIONAL THEORIES

The contemporary organisational theory is a result of an evolutionary process, with the theory developing over the years in different forms and different places. Theories of organisations are as old as the human race itself, and have accumulated with the increase of knowledge, development of production means, increase and development of political structures. Some classifications of the evolutionary process of the theory are - the classical school organisational theory, the human relations school, contingency school and the political organisational theory school.

3.3.1 The classical school of organisational theory
The classical theory has its foundation from sociological explanations of economic circumstances. The age old organisational structures were re-organised to fit into modern business structures. Adam Smith, Fredrick Taylor, Henri Fayol, Max Weber and Ralph Davis contributed to the classical theory of organisations.

3.3.2 The human relations school of organisational theory
This theory recognised the importance of human beings in an organisation and encouraged treating workers as human beings and not machines. It was understood that if workers were treated properly they would cooperate with management to achieve organisational goals. This entailed listening to the complaints and suggestions of the employees as well as allowing them to assist in making certain decisions in the organisation. The main contributors to this theory are Elton Mayo (Hawthorne Studies) and Raymond Mills, according to Smit, Cronje, Brevis and Vrba (2007:35).
3.3.3 Contingency approach to organisational theory

The Contingency theory postulates that managerial actions can be adjusted to the demands of the situations in which performance was expected. The managers were encouraged to study and understand the situation and the surrounding circumstances, on the basis of which they would make decisions on effective management. According to Smit et al. (2007) the proponents of the contingency theory of organisations are Herbert Simon, Daniel Katz, Robert Kahn, Joan Woodward and Charles Perrow.

3.3.4 Political approach to organisational theory

This approach looks at organisations from a political perspective and introduces the limitations that decision making in an organisation too often encounters. When there are conflicting goals, the decision making has to come from finding a satisfactory alternative. These are ‘activities taken within organisations to acquire, develop and use power and other resources to obtain one’s preferred outcomes in a situation in which there is uncertainty or disagreement about choices.’ The approaches to decision making under the political approach to organisation theory, is the bounded rationality model. The model is presented diagrammatically in figure 3.2 below.

**Figure 3.1: Constraints and trade-offs in bounded rationality perspective**

![Diagram of bounded rationality](Source: Janis 1989:40)
Bounded rationality people have limits or boundaries on how rational they can be (Daft 2000:274). The organisation is complex and has too much information, but the managers need just enough relevant information and with limited time in which to make decisions, they resort to satisficing (March & Simon 1958). It is important to state that the bounded rationality model is part of the administrative model, and the administrative model depends on assumptions that are different from those of the classical model. The administrative model focuses on organisational factors that affect and influence individual behaviour and decision making systems and processes. This model is more realistic for complex non-programmed decisions, the decisions taken by a leader are an interpretation of the leadership style the leader subscribes to (Daft 2000:274).

3.4 ORGANISATIONAL DEVELOPMENT

The Organisational Development (OD) strategy as designed by Blake and Mouton (1978) based on the Managerial Grid permits managers to learn management theory and methods step by step. The conceptual base of the Managerial Grid can be applied to organisational styles, team structures and leadership styles. OD as a successful strategy of planned change, has significant positive effects on the total organisation, that is; the behaviour of the individual, the behaviour of the work group and the impact on attitudinal and effectiveness changes (Lau & Shani 1992:516). Essentially, OD seeks to integrate individual and organisational needs with the focus on reaching organisational objectives to the benefit of all in the enterprise (Beckhard, 1969). The OD theory implies therefore that leadership styles, decision making processes and the behaviour of leaders has a relationship to the organisational structure, culture and objectives.

Aquinas (2008) suggested two strategy types, diagnostic and change strategies and these can be subdivided further under separate subheadings.

3.4.1 Diagnostic strategies

- **Constants** - Strategy consists of bringing in objective outsiders (consultants) to analyse and conduct audits of existing policies, procedures and problems.

- **Surveys** - Consist of interviews or questionnaires used to assess the attitudes, complaints, problems and unmet needs of employees. Surveys are conducted by outsiders.
• **Group discussions** - Periodic meetings by managers and leaders to identify problems and their sources and analyse the problems for their impact on performance.

3.4.2 Change strategies

• **Training programs** - On-going training programs to improve skills, change attitudes, and increase knowledge necessary for effective performance.

• **Meetings and seminars** - Gatherings meant to assist in exploring mutual problems with efforts to find amicable solutions. These may be used to prepare people for change.

• **Grid OD** - A six phase program based on the leadership grid, meant for management and organisational development. The phases are laboratory training, team development, inter-group development, organisational goal setting, goal attainment and stabilisation.

French and Bell (1978:14) asserted that it is more accurate to think of OD as a long range effort to improve an organisation’s problem-solving and renewal processes, particularly through more effective and collaborative management of culture and structure. It should be stated that research found numerous cultural barriers to organisational development. Steele (1997:23-31) considered certain UK cultural beliefs that impacted negatively on OD problematic, for instance: ‘certain topics cannot be discussed’ and ‘rocking the boat’. He regarded it as a sense of fatalism and a deeply rooted class structure that goes against the values of ownership of one’s personal space. Bennis (1977:191-215) had a program cancelled in Switzerland, because the program was in conflict with the organisation’s president’s values based on his Swiss army training. In Japan a training program in ‘assertiveness’ was cancelled as it was in direct conflict with the high power distance paternalistic system (Jaeger 1986:178-190). The distinguishing characteristics of OD are that:

• It encourages collaboration and interaction between organisation, leaders and members.

• It focuses on the human side of the organisation and intervenes on structural issues.
• It allows participation in problem solving and decision making at all levels of the organisation, and
• seeks the betterment of both the organisation and the individual, and tries to create a win-win situation.

The assumptions underlying OD are that management acknowledges that they deal with individuals and groups formed from the individuals, which help in designing an organisation. There is an on-going process of organisational development, meaning the organisation is always changing. This creates a different and dynamic environment which may impact on the way leaders behave in the organisation. Further to this, the organisational structure may pre-determine the style of leadership to be followed by management, this however, will not remove the personal attributes and their effects on the leadership style.

3.5 ORGANISATIONAL DESIGN
Organisational design is the process by which managers create a specific type of organisational structure and culture to enable the company to operate in the most efficient way possible (Jones & George 2009:346). Once a firm has decided on the type of structure and culture required for the organisation, managers should work to instil those values and attitudes as stipulated.

According to the Contingency theory, managers design organisational structures to fit the tasks and circumstances affecting the organisation the most, with intentions of maximising productivity and reducing risks and uncertainties (Lawrence & Lorsch 1997). On the basis of this, organisational structures are designed, in a sense the structures are a result of strategy, and the opposite may be true. Yin and Zajac (2004:365-383) asserted that there is a reciprocal relationship between strategy and structure, the relationship emphasises the interconnectedness between strategy formulation and strategy implementation. Research has shown that strategy has a more important influence on structure (Miller & Whitney 1999:5-17). When organisations change their strategy, it is imperative that they change their structures too. The structure in the organisation positions and directs managers as to where they should operate from and bestows them with certain powers which they would use to effect the required change in the organisation. Within these structures is the organisational
architecture which affects or directs the manager in the way he / she should lead. The organisational architecture comprises the structure, the culture, control systems and the human resources that together determine how effectively a leader can lead (Jones & George 2009:345). The organisational architect itself becomes an important factor in the nature of the political activities and the subsequent leadership styles in the organisation.

3.6 ORGANISATIONAL POLITICS AND LEADERSHIP STYLES

The organisational design therefore presupposes certain leadership styles as structured in the organogram of the firm. Hidden and yet real in the nature of management is the effect of organisational politics, the politics of the organisation determines how things will be done. Organisational politics is the struggle for resources and competition for power and the building of personal stature through building coalitions. Sense and Antoni (2003: 487-494) defined politics as the process in which attempts are made to achieve goals through accommodation and the exercise of influence, power and authority.

Specifically in project management, with the temporary nature of projects and the matrix system which does not give the project manager much authority, organisational politics is of critical importance. There has been little discourse on project politics and indeed how those entities do impact project performance (Sense 2003:107-114). Senior and successful project managers have long known the importance of maintaining strong political ties throughout their organisations as a method for achieving project success. Many companies have moved to use management by projects as real solutions to this rapidly changing technology, fierce competitive markets and powerful environmental lobby. Knipe, van der Waldt, van Niekerk, Burger and Nell (2009:208) stated that the project manager’s role is performed in the absence of absolute power. This creates an authority gap and forces the manager to depend on cooperation from functional managers from whence he sources his human resources. Smith, Houghton, Hood and Ryman (2006: 622) held the same view; they posited that this creates a political power struggle and authority limitations as power inequality within a team is positively associated with firm performance. Since projects are becoming increasingly complex in terms of size, details, inter-relationships and changing performance measures, they should be addressed differently to more traditional
straight-forward dyads when approaching the phenomenon of conflict, power, politics and authority (Vaaland & Hakansson 2003:127-138).

It is imperative that leaders understand the impact of power and organisational politics as subjective and yet significant critical determinants of the manager’s effectiveness (Belout & Gauvreau 2004:1-11). Rarely will managers who have no political influence manage to be effective. Leaders need to accept the importance of organisational politics as a reality of leadership which will help address problems; with this acceptance as a starting point, we can begin to address project politics, i.e. power, authority and influence as a necessary part of effective management (Sense 2003:107-114).

According to Irwin (2007: 21-29): managing politics is a type of resource that helps is useful when negotiating in a political environment (Sauser, Reilly & Shenhar 2009: 665-679). Effective managers are willing and able to employ these appropriate political tactics to further their goals by managing the dimensions of politics effectively (Gray 2001:103-109). Liu, Chen, Jiang and Klein (2010:220-227) agreed that power and political behaviour, are some of the most pervasive and frequently harmful elements impacting on management success. Pinto (2000:85-91) concurred with this position. Politics in the organisation therefore impacts on the leadership style that any manager may want to assume, added to this complexity will be the organisational design, the structure, strategy, culture and the competencies of the leadership.

Ram and Prabhakar (2010:40-54) established a relationship between perceptions of organisational politics and the four work related outcomes. Job involvement, job satisfaction, turnover intentions and job stress. In earlier studies, Kacmar and Baron (1999:1-39) established the existence of a relationship between potential organisational politics and leadership styles in the system. Organisational culture is influenced by organisational politics, and these politics are practised at all levels of management in an organisation.

Negative organisational politics causes high levels of absenteeism, turnover intentions, anxiety, stress, and low job satisfaction. Other research results found correlations between political perceptions and largely negative outcomes such as stress (Ferri, Fedor, Chachere & Poddy 1989); uncertainty (Parker, Dipboye &
Jackson 1995); job ambiguity (Madison, Allen, Porter, Renwick & Mayes 1980); organisational ambiguity (Perrewe, Ferris, Frink & Anthony 2000); lack of organisational impetus (Zahra 1986); job anxiety (Cropanzano, Howes, Grandey & Toth 1997); intent to turnover (Kacmar, Bozeman, Carlson & Anthony 1999); and psychological withdrawal (Ferris & Kacmar 1992).

Figure 3.2: Political factors impacting on organisation

As shown in Figure 3.3, these political pressures have a direct impact on the welfare and performance of the employee, and the leader is expected to motivate these people to produce and contribute to meeting the desired objectives. Lussier (2000:307) stated that twenty per cent of employees’ time is spent on organisational politics. Berner (1998) asserted that the level of political involvement of employees increases with the increase in position of power within the organisation. It therefore calls to reason that an effective contingency theory based leader will appreciate that power is the ability to influence the behaviour of others, and politics is the process of gaining and using that power (Lussier 2000:329). The amount and type of power affects or informs the leadership styles that may be adopted by the leader.
3.7 LEADERSHIP STYLES IN ORGANISATIONAL SET UPS

Research on leadership styles has been conducted extensively to the point where the researchers seem to be repeating each other. Leadership style theories have been developed, and like any other theory they served the purpose of trying to establish relationships. Style, or particularly leadership style can be defined as the way or manner in which a leader seeks to influence followers to get the objectives achieved. Leaders use power, or the ability to influence without coercing people into doing what they want done. Although this section of leadership has been researched extensively, there is no leadership style that is the best and none ideal for all situations (Mullins 2005 and Vecchio 2000). The different types of leadership-style theories that have been advanced have been classified differently; therefore, there is no standard classification of leadership styles.

Giritli and Topcu Oraz (2004:253-262) proposed two types of leadership styles: firstly the employee-centred type, participative or democratic, and secondly, the task centred autocratic or authoritarian style.

Tannenbaum and Schmidt (1973) proposed a continuum which identifies the two extremes and defines these extremes as leader-centred (authoritarian) and subordinate-centred (democratic) style. Hersey and Blanchard (1982) described four leadership styles with varying degrees of directive and supportive elements of leadership behaviour. Likert (1967) identified four main types of management styles (exploitative-authoritative, benevolent-authoritative, consultative and participative): he posited that the most effective one in all cases was the participative leadership style. Hay and McBer, cited by Goleman (2000) suggested two broad leadership styles, transactional and transformational, that can be sub-divided to form six leadership styles. Borekci (2009:103-109) suggested a paternalistic leadership style based on national cultures, he asserted that what we see in leadership is a reflection of culture and therefore, hard to change the expectations of the followers. Borekci (2009) admits that the internet environment has compelled people in paternalistic cultures to accommodate themselves. The author asserted that paternalism is a more intricate relationship between the involved parties and not the organisational hierarchy. The two parties are the patrons (who protect, guide and care for the subordinates).
The subordinate is subservient to the patron. The relationship is like that of the father and his children, except the father would treat his children equally, while a patron may show favouritism.

This relationship between the patron or father, and the subordinate or child, is a cultural structure. According to Borecki (2009), it is part of the national culture in Turkey and indeed many other Asian countries. The relationship is largely based on the understanding that fathers are the natural leaders and they will lead and direct society. Though there are many similarities between father and patron, there are also known differences.

3.8 LEADERSHIP STYLES AND ORGANISATIONAL FIT

In view of the preceding literature review, it is evident that there are numerous factors that affect leadership and leadership styles. Oshagbemi (2008:1896-1910) observed that personal and organisational variables impact on leadership styles of managers. Studies to date have concentrated on individual personal dimensions such as the impact of gender, or age, or educational differences (Collard 2001:343-355). Leadership behaviour theory and research are disconnected and show no merging of thoughts and actions with managers doing their own thing and researchers focusing on issues that are not considered important by the manager (Oshagbemi & Gill 2003:93-107). It will be beneficial to both the academic and the industry if there was a solid working relationship.

The disconnected research is as a result of the researchers considering very little of both personal and organisational variables and how they influence leadership styles. A proper research on the most ideal leadership style should comprise both personal (age, gender, education, parental upbringing, culture, etc.) and organisational (organisational structure, politics, technology, resources, managerial competency, hierarchy, organisational objectives, tasks to be performed, mission and vision etc). Mitchell (2000) identified education and age as significant determinants of the likely leadership style to be adopted by managers. Organisational demographic factors such as the age of the person, organisational tenure and type of industry influence leadership styles (Kakabadse, Kakabadse & Myers 1998:35 -388).
Person-organisation value fit affects job satisfaction, job involvement, cooperation, communication and commitment, according to Alstine (2005:18–19). The researcher tested the effects of the two types of person-organisation fit, namely; the fit between hierarchical levels (superior-follower) and the fit amongst peers (members of the same level) and established that there is a link between the person-organisation fit with job satisfaction and involvement. Chatman (1991:459-484) found out that recruits whose values match those of the organisation at the point when they are appointed, adjust easily to the new organisation and are likely to remain with the firm for much longer. In another study both Bowen (1991:35-51) and Chatman (1989:333-349) agreed that a perfect person-organisation fit may be negative as it leads to group complacence and lack of innovation amongst the employees and the leadership in general. Person-organisation fit is one of many determinants and dimensions that may affect the leadership style in an organisation.

Findings from many studies suggest that where there is a person-organisation fit and where the leadership interacts with the followers, there is likely to be a change on the person-organisation fit caused by the leader’s behaviour (Silverhart & Hinchcliffe 1996:4-6). However, the degree of interaction would differ from leader to leader and thus vary in the extent to which the person-organisation fit is affected. The leader behaviours that involve intensive and personalised interaction between leader and followers may have a greater impact on the fit (Meligno, Ravlin & Adkins 1991:481- 495). This agrees with the popular definition of leadership as a set of behaviours associated with responsibility and influence people to contribute towards achievement of the set objectives. This definition identifies certain basics for leadership, which are core leader competencies, followers, a specific situation and power (ability to influence others).

The capacity or ability of an individual, team or organisation to influence others is defined as power (Galinsky 2006:1068-1074). Power is not the act of changing someone’s attitude or behaviour, it is merely the capacity to do so. Ironically, people may have power and may not know they have the power or merely not use it. The basic pre-requisite of power is that one person or a group of people accept dependence on the other person or institution for a needed resource.
Power is a critical element of the decision on what behaviours leaders follow, there is no leadership without followership, hence, power exists when others recognise that someone has a resource they need - there is interdependency between the leadership and the followership (Gulati & Sytch 2007:32-69). Aquinas (2006:301) suggested that there are several sources of power from which a leader will derive influence, and these are, legitimate power, reward power, coercive power, expert power and referent power. Depending on the type of power, if the possessor of power knows that they have power and that there are followers who acknowledge them as the source, this influences the leadership style dependent on the extent to which the followers must follow and the structure in which the relationship plays out.

It is important to identify the contingencies of power, the ability to influence is not universal but depends on the situation and the type of followers. Leadership does not take place in a vacuum, and it should be understood as encompassing personal as well as organisational variables. The style of leadership will depend on the type and relevance of power, the willingness of the leader to use it, or his ability to know that he has the power and apply it according to the circumstances in which he has to lead. According to Thach, Thompson and Morris (2006: 304-319) followers have their expectations informed by their culture, beliefs and values about leadership. Brief definitions and explanations of these four contingencies are listed below;

- **Sustainability** - power is strongest when there is no alternative recourse for the follower.
- **Centrality** - the degree of interdependence between the leader and the followers. The greater the interdependence the less the power the leader has over his followers.
- **Discretion** - the presence or absence of freedom to choose the alternatives to follow, less ability to choose curtails the power and influences the leadership style that may be adopted.
- **Visibility** - the extent to which the others know that you are a custodian of a resource that they are in need of. Followers have to feel the need for them to accept your leadership.
Organisations are multi-functional teams moving towards a horizontal structure and it is important for leadership to understand the follower’s perception about their power and leadership. The leader, must use the power within the limitations of the four contingencies as listed above to enable effective interaction which may influence the behaviour of the followers. The type and amount of power will impact on the leadership style as well as the type of leadership.

3.9 TYPES OF LEADERSHIP STYLES
Leadership is a pattern of philosophy, beliefs, attitudes, feelings and assumptions about how a leader is expected to behave or respond to circumstances and situations. The style relates more to how an individual perceives the power as a leader in consulting, participating or how they will involve other people in the process. The leadership style will largely depend on the leader’s perception about the people they are leading. A theory X leader would behave differently to the employees than a Theory Y leader. This is complimented by the leader’s perception about self, his attitude towards other people and their capabilities, and an understanding of the values held by the followers in relation to his own aspirations.

It is important to re-iterate that leadership styles do not take place outside of the cultural structures, be they societal or organisational. The leadership styles will be discussed briefly. Because there is no standard classification for leadership, there will be different classifications which will overlap. The leadership styles to be discussed are, female (feminine) style, transactional, transformational, participatory leadership style, consultative leadership style, paternalistic leadership style, directive or supportive leadership style, delegative leadership style, empowerment leadership style, situational leadership style, advisory leadership style, forceful leadership style and Path-goal leadership style.

3.9.1 Female (feminine) style
Miller, Taylor and Buck (1991:5-12) suggested a female (feminine) style of leadership where women are the focus of studies on gender based leadership styles; people direct their attention to the adequacy of women’s leadership styles.

Despite all the research on women’s leadership styles, there is little agreement on exactly how women lead. The focus of the studies has been more on the
differences and similarities of female and male leadership styles than they have been on substance (Eagly & Johannesen-Schmidt 2001:781-797). There is an ongoing academic debate on whether or not there are any gender based differences in leadership styles. Those that advocate for differences claim that the leadership style of women is less hierarchical, more cooperative, more collaborative and tends to enhance others. Those with contrary views state that there are no differences or minimise the difference to levels of insignificance. Eagly, Wood and Diekman (2000:123 – 174) discussed certain theoretical frameworks that underlie the differences of the leadership styles based on gender. They held the view that leadership roles like any other organisational roles are judged on the basis of the perception of the followers, they identify two forms of leadership styles; agentic and communal.

The agentic style is characterised by assertiveness, controlling and confidence-tendencies, aggression, forceful, independent, daring and competitive. This characterises the perceived behaviour of male leaders. The communal characteristics considered to be predominantly feminine are, concern with the welfare of people, speaking tentatively, accepting others’ direction, supporting and soothing, strong interpersonal relationships and strongly consultative.

3.9.2 Task-oriented leadership style
The task-oriented leadership style concerns itself with accomplishment of the tasks at hand by providing task related activities (transactional or transformational leadership style).

The distinction between transactional and transformational was first identified by Bales as cited in Eagly and Schmidt (2001:781-797) and confirmed by Hemphill and Coons (1957:6-38). Transactional leadership is characterised by planning, controlling, monitoring and directing. Transactional leaders establish exchange relationships with their subordinates. They manage by clarifying subordinate responsibilities, monitoring their work, and rewarding them for meeting objectives and correcting them when failing to meet the objectives (Bass 1990). Eagly and Johannensen-Schmidt (2001:781-797) stated that men exceeded women on the transactional scales of active management-by-exception, passive management-
by-exception and laissez-faire leadership. These findings suggest that male managers (more than female managers):

- paid attention to their followers’ problems and mistakes,
- waited until problems were severe before attempting to solve them, and
- were absent and uninvolved at critical times.

The researchers concluded that the relatively negative behaviours associated with scales, on which men exceeded women, cannot be regarded as typical of male managers. The people who rated the behaviours perceived relatively low frequencies of these behaviours for both sexes, albeit higher frequencies for male than female managers. According to Goleman (2000:79-90) the transactional leadership style has two sub-styles, namely; coercive (do what I tell you) and the authoritative style (come with me). Transactional leaders may be summed up as traditional managers who change little, manage what they find and make very few mistakes as they abide by existing laws and regulations.

3.9.3 Interpersonally oriented leadership style

This style is leadership is generally referred to in literature as transformational or the charismatic leadership style. It is primarily an interpersonally-oriented leadership style which shows concern for others and their morale. These leaders set high standards for behaviour and become role models by gaining trust and confidence of their followers.

According to Burns (1978) transformational leadership can be seen when leaders and followers cause each other to advance to a higher level of morale and innovation. Through the strength of their vision and personality, transformational leaders are able to inspire subordinates to achieve set goals and objectives. They garner trust, respect, and admiration from their followers (Burns 1985).

Transformational leaders innovate, mentor, empower followers, and encourage development to full potential. Eagly and Johannensen-Schmidt (2001:781-797), both women, asserted that transactional and transformational leadership styles are not exactly gender specific but show tendencies towards aligning themselves to gender. Transactional leaders tend to be more of a male style and transformational leaders more of a female style of leadership. Transformational
leaders are known for strategic vision, unconventional and countercultural management practices involving personal risk, and inspirational management practices (McCarthy 2005:47-50). This is seemingly a contradiction of female personalities which are risk aversive, less aggressive and consultative. Transformational leaders rule from a distance and have as their primary goal a definitive and measurable change in their followers' behaviour and subsequent outcomes.

3.9.4 Leader-follower involvement leadership style

The leader-follower involvement leadership style involves efforts by the leader to create a conducive working environment and encourage participation of followers.

This style entails making decisions together with the followers, which otherwise would have been made by the manager alone. The type of participation will vary, and may include amongst others, revising a provisional decision, or asking the group to make an acceptable decision. There has been no significant results from research, possibly because the nature of participation is not standard, varies according to the situations, or merely the consistency of the leadership to allow participation. This style also needs a manager who is skilled in conflict resolution and one who can be able to sell his vision and objectives effectively and be trusted by the followers.

3.9.5 Paternalistic leadership style

Borekci (2009:103-109) identified a paternalistic style of leadership found in Turkey and other Asian countries. He proposed that this leadership style has abilities to be a catalyst, raise performance, encourages communication, provides guidance, and allows for team loyalty. Cheng, Chou and Wu (2004:89-117) stated that the paternalistic leadership style is predominant in China, they asserted that this mode of leadership exerts powerful authority with consideration for the subordinates and is based on moral leadership. The researchers acknowledged that paternalistic leadership fails to evenly distribute its positive attributes amongst the followers. Paternalism in China stems from the cultural tradition of Confucianism and Legalism. Confucianism stipulates that the father-son cardinal relationship will supersede all other social relations. Farh and Cheng
(2000:94-127) defined paternalism as a style that combines strong discipline and authority with fatherly benevolence and moral integrity couched in a personalitic atmosphere.

3.9.6 Instructing-following up leadership style
This style of leadership is extensively referred to in the literature as a directive leadership style. Little research has been done in this area, and there has been confusion as to whether this is the same as participative or the opposite of a participative leadership style. Leadership is a two-way activity between the leader and the led, and there should be an interest from both parties with clear expectations from each party.

Directive involves giving instructions and following after them, but, if no specific instructions are given and follow up done, some followers will simply sit and wait. In view of this, directive can be divided into four types, these are; directive-autocratic, directive-democratic, permissive-autocratic and permissive-democratic (Muczyk & Reimann 1987:301-311).

3.9.7 Path-goal theory
The Path-Goal theory of leadership pronounces on four contingencies, namely: employee contingencies, leader behaviour contingencies, leader effectiveness contingencies and environmental contingencies. This theory is based on the expectancy theory of motivation. The theory suggests that the effective leaders strengthen the performance-to-outcome expectancy and valences of those outcomes by ensuring that employees who perform their jobs well have a higher degree of need fulfilment than employees who perform poorly. Effective leaders strengthen the effort-to-performance expectancy by providing the information, support, and necessary resources to effect performance. Fig 3.4 illustrates these contingencies and its subdivisions.
Figure 3.3: Path-Goal leadership theory

The leader behaviour suggests four leadership styles, directive, supportive, participative and achievement-oriented. Hellriegel, Slocum, Jackson, Amos, Klopper, Louw, Louw and Oosthuizen (2006:296) identified dimensions of leadership behaviour, such as; initiating structure, consideration, authoritarianism, hierarchical influence, and closeness of supervision. According to their findings, leaders with an initiating structure-approach towards subordinates are highly rated by their superiors and have higher production ratings. Those who use the considerate approach to subordinates have more satisfied workers (Filley & House 1969). Studies have shown that the initiating structure is frequently resented by semi-skilled and unskilled workforce and is a source of discontent, grievances, low morale and high turnover.

The function of a leader as explicated in the path-goal theory is to increase personal pay offs to subordinates for work-goal attainment and make the path to these pay-offs easier by clarifying it, reducing road blocks and pitfalls and increasing the opportunities for personal satisfaction along the process (House 1971:324). An effective leader is one who assists subordinates through paths which ultimately lead to organisational objectives. The need for such a leadership is moderated by characteristics of the environment and the characteristics of the...
followers (House & Mitchell 1974:81-97). Bass (1990:627) observed that a leader needs to complement the weaknesses of the subordinates in particular circumstances to enable the subordinate to be motivated, satisfied and perform well.

3.9.8 The Leadership continuum

Tannenbaum-Schmidt (1973) suggested a continuum of possible leadership behaviours and styles that a manager may exhibit. These are actions that relate to the degree of authority and the freedom to make certain decisions and to the freedom available to the followers. A broad range of leadership styles are depicted on the continuum between two extremes of autocratic and free rein. The continuum can be understood as passing through a continuum of boss-centred (task) to subordinate-centred (relationship) progressing from left to right.

The advantages of this theory are that it:

- allows the manager choices of involvement,
- presents opportunities for delegation to subordinates,
- provides a focus on relevant criteria,
- emphasises employee development, and
- allows for the empowerment of the employee.

Although this theory has many advantages, it also has its weaknesses and limitations.

The disadvantages of this theory are that it does not discuss a process of the development of the subordinate, assumes there are no other factors that affect the subordinate, does not show the full complexity of a management environment, and assumes that workers are at the same level of maturity.
3.10 MATCHING FOLLOWERSHIP TO LEADERSHIP

3.10.1 Determinants of leadership style

A human being is a result of other human beings, and as people ascend to the position of leadership, they are a summation of many interactions with fellow humans and institutions. Each encounter with people or institutions shapes the way the individual understands and values issues.

No leader grows in a vacuum and leadership does not exist in isolation, people grow up to be leaders and are placed there by people. Hartman and Harris (2001:153-167) in a study on the effect of parental influence on leadership concluded that the child’s upbringing influences his values and beliefs which affect his leadership style. The results were in agreement with the longstanding Bible text, Train a child in the way he should go, and when he is old, he will not depart from it. Proverbs 22:6. Psychological literature contains extensive research on early childhood influences, not specific to leadership but relating mostly to values, beliefs and behaviour (Abegglen 1958:101-159). A person’s leadership style should be similar to that of the model from which the person learnt to lead. Fiedler (1967) stated that leadership styles are fixed facets of an individual's personality learnt early in life and reinforced by continuing life experiences. In contrast to this assertion, contingency theorists like House and Dessler (1974) and Vroom and Yetton (1973) are optimistic and posited that leaders are capable of learning and adopting new styles. An individual inevitably learns all the time through formal education or interaction with other people and through reading and training programs enhanced by experience. These shape the values, the perceptions, the attitudes and the character that is portrayed by the leader.

3.10.2 The critical follower’s characteristic

If successful leadership and the appropriate leadership style are meant to effect job satisfaction, job commitment, low labour turnover, person-organisational fit, and motivation of employees, then there is no effective leadership style that will take place without a study of the followers characteristics and expectations (Li 2006:1689-1706). Leadership and the style are a result of the interaction between the leader and the followers. Extensive studies on the effect of good leadership...
on job satisfaction and commitment to organisation are supportive of the notion that the person-organisation fit and hierarchical-subordinate fit, positively relate to job satisfaction. Job satisfaction and commitment lead to a low labour turnover, motivated followership and hence effective leadership (Posner 1992: 351-61).

Where people are involved, culture and upbringing become issues because they shape perception, beliefs, values and attitudes. There are imperatives that force us to examine the impact of culture on leadership if we are to attain organisational objectives that transcend culture (House, Javidan, Hanges, & Dorfman 2002:3-10). There is a direct impact of culture and tradition on leadership styles as these define the norms and acceptable ways of doing things much more than the effect of the organisational structure. Cognisance is taken of the dynamic nature of culture and the effects of education, training, inter-cultural interaction, globalisation and technology on traditional values.

Contingency theories subscribe to the fact that the effectiveness of a leader is not an independent variable but dependent on the characteristics of the followers (Bodla & Hussain 2010:73-81). Depree (1992) asserted that leaders accomplish something by permission of the followers and leaders become effective only because they have been given permission by the followers to become leaders. Much emphasis has been put on the research and development of leaders and leadership to the neglect of followership (Meindi 1987:91-108). The industrial age was characterised by command-and-control structure, the arrival of the information age has introduced the need for more flexible leader-follower relationships.

All human beings need motivation to perform, and the motivation of the follower is a function of environmental and internal factors (Bjugstad 2004). Today’s followers want to define their wants and be treated as they would want and not as leaders think they want to be treated (Bain 1982). As such, the effectiveness of a leader is a function of the characteristics of the followers. Critical to effective leadership and dedicated followership are identification and satisfaction of follower preferences for a specific leadership style. The followers judge leadership according to their personal characteristics and values.
3.11 CONCLUSION

Weick (2005:409-421) advanced another approach to the understanding of leadership theory and styles in the organisational context. The complexity theory, accepting the juxtaposition of order amidst chaotic change is an essential characteristic of the social environment. This theory offers a middle ground between computational analysis of individuals and the resultant structures from the social interactions of the heterogeneous organisation. Within the organisation are individual preferences against organisational goals and follower attitudes to the leader. The ability of the leader and followers to adapt to each other constitutes effective leadership.

More organisations face dynamic environmental changes due to hyper-competition, technological advances and the changing social structure of the communities. The organisation is a microcosm of the society, and these organisations have to keep pace with the unstable environmental structures. Aquinas (2008:17) asserted that change has become the norm in societies and organisations alike. The most successful organisations are those that are flexible with a culture of values, and attitudes that relate to the current circumstances under which organisations find themselves. The nature of the workforce or followers, the technology applied in the particular organisation, the levels of economic shocks and their impact on the organisation, and the social or political trends become the forces of change in an organisation.

The following chapter discusses selected variables that influence project management. These are conditions or factors which impact on other factors. The influence of the variables will primarily be discussed purely as in the context of project management.
CHAPTER FOUR
SELECTED VARIABLES INFLUENCING PROJECT MANAGEMENT SUCCESS

4.1 INTRODUCTION
Project success means different things to different people depending on the interests of the stakeholders concerned (Toor & Ogunlana 2008:420-430). Stakeholders have different interests in the project, and therefore have different perceptions of project success (Bryde & Brown 2005:57-65), particularly in large scale projects where there are many stakeholders with diverse interests. A summary of literature from the researchers above has been synthesised into a model, as shown in Figure 4.1.

Figure 4.1 Different views of project success

<table>
<thead>
<tr>
<th>MACRO-VIEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relevance of project to user</td>
</tr>
<tr>
<td>Satisfaction of the users of project</td>
</tr>
<tr>
<td>Acceptability of the project</td>
</tr>
<tr>
<td>Usability of the project by community</td>
</tr>
<tr>
<td>Satisfaction of the customer</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MICRO-VIEW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was the project done in time?</td>
</tr>
<tr>
<td>Was the project done within budget?</td>
</tr>
<tr>
<td>Does the project meet specifications?</td>
</tr>
<tr>
<td>Did managers meet expectations?</td>
</tr>
<tr>
<td>Are the internal stakeholders happy?</td>
</tr>
</tbody>
</table>

(Source: Own construction synthesised from; (Toor & Ogunlana 2008:420-430, (Bryde & Brown 2005:57-65)
There is a substantial difference between the perceptions of construction executives and project management over Key Performance Indicators (KPIs); hence different participants think differently about what project success is (Cox, Issa & Aherns 2003:142-151). Two viewpoints of project successes are; the macro-view and the micro-view. Project users and beneficiaries look at the macro-view of project success, the internal stakeholders look at the micro-view. Cooke-Davies (2002:185-190) offered a clear distinction between project success (macro-view) and project management success (micro-view) This relates directly to the competencies of the project leaders, and is the purpose for this study.

Success factors are those that contribute to achieving success in project execution which comprise the variables that affect project implementation. The factors influence the success of the project negatively or positively depending on other factors that relate to project execution. They vary from time to time and from project to project. An understanding of their values and good prediction of their changes will allow for effective project management. Success criteria are the measures by which project success or failure is judged, and these comprise the KPIs. Micro-views of project success concentrate mostly on delivering the project on time, within quality specifications and within budget.

Figure 4.2 Key performance indicators for projects

(Source: Adapted from Chan & Chan 2004)
Atkinson added a new dimension to the original ‘iron triangle’ namely, the ‘square root’, which includes both quantitative and qualitative measurements; the benefits that different groups will get from the project. There is no agreement amongst the researchers on project KPIs. The literature reviewed show that the performance measurement of construction projects is slowly moving away from the traditional measures (such as time, quality and cost) towards a mixture of quantitative and qualitative measures (Toor & Ogunlana 2010:228-236).

4.1.1 Specific variables that influence project management success

Croucher (2008:243) defined a variable as an item or quantity whose value changes and can be determined from the value of the other variable with which it is compared. This definition prescribes a relationship between two or more variables, one of which is independent against the other that is dependent. The independent variable is used to predict the value of the dependent variable (s): such data is bivariate or multivariate because there are two or more variables with a relationship with one another (Maree 2008:147). Variables are measurements or observations which potentially vary from unit to unit in direct proportion to changes in activities of the other measurements with which they have a relationship. The selected variables in this chapter therefore, are measurements or activities that affect effective project execution and success.

Atkinson (1999:337-342) suggested the iron triangle of project management, comprising time, quality and budget as critical to the success of a project. Much has been written for and against this assertion. Newman (2006), suggested that the three variables are too restrictive, and expanded the number of variables to five, namely; scope time, process, people, and risk management. There are two broad types of variables in a project, personnel costs and organisational concerns. To effect any change, people are involved and as such they should be the most important variable in project management. After personnel, project management entails spending money to bring about the change, and this change needs an organisation and a structure that is suitable to effect the change. The personnel variable remains the most critical of the three broad variables because it is the ‘personnel’ that decide on a project, plan the project, and execute the project.
In their research, Yu, Shen, Kelly and Hunter (2007:198-213) identified thirteen significant variables affecting project briefing in construction which they used to draft a comprehensive and practical framework for systematic identification and representation of client requirements. Briefing is the process of identifying and articulating the client requirements at the beginning of the project design (Kamara & Anumba 2001:13-14). It was acknowledged that some of the thirteen variables identified required consideration at particular points in the life cycle of the project. Because a project is a change oriented event comprising physical and non-physical activities that include pre-project stage to ensure effective planning and a post-project stage, to ensure absorption into the core business, it is important to identify all the variables that may affect project implementation (Morris & Hough 1987). The thirteen variables identified and tested are listed in Table 4.1 below.

Table 4.1: Thirteen variables of briefing in construction

<table>
<thead>
<tr>
<th>Variables of briefing in construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projects</td>
</tr>
<tr>
<td>1 Stakeholder management</td>
</tr>
<tr>
<td>2 Team and team dynamics</td>
</tr>
<tr>
<td>3 Client representation</td>
</tr>
<tr>
<td>4 Change management</td>
</tr>
<tr>
<td>5 Knowledge management</td>
</tr>
<tr>
<td>6 Risk and conflict management</td>
</tr>
<tr>
<td>7 POE and PPE</td>
</tr>
<tr>
<td>8 Critical success factors and key performance indicators</td>
</tr>
<tr>
<td>9 Types of business and organisational theory</td>
</tr>
<tr>
<td>10 Decision making</td>
</tr>
</tbody>
</table>

88
Communication

Culture and ethics

(Source: Adapted from Yu, Shen, Kelly & Hunter 2007)

There are numerous methods that have been used by researchers to identify and classify project variables. The researcher has included in this chapter all the different variables as listed above; most have been grouped together and renamed. These include amongst others, emotional intelligence, authority gap, the matrix structure, organisational conflicts, organisational culture, project power politics, the role of the team, project tools and techniques, project types, the iron triangle and leadership competencies. Leadership styles were purposely left out as they were dealt with extensively in the preceding chapter.

4.1.2 Project management as a discipline

According to Burke (2007:17) the Project Management Body of Knowledge (PMBK) defined a project as a temporary endeavour undertaken to create a unique product or service. Mantel, Meredith, Shafer and Sutton (2005:2) concurred and added that a project is specific, timely, usually multidisciplinary and always conflict ridden. A project is stated as being unique, hence different from all other undertakings. Besides being a temporal undertaking the project is specific in its technical requirements and dependent on the desires of the customer. The PMBK (2004) defined project management as the application of knowledge, skills, tools and techniques to project activities to meet set project deliveries. Various authors define project management as a process by which projects are defined, planned, monitored, controlled and delivered, such that agreed benefits are realised. Norrie and Walker (2004:47-56) defined project management as implementation of a change program.

Project management is not merely an event, but rather a process involving many interrelated activities and tasks performed to achieve pre-specified objectives and deliverables. Project managers essentially manage uncertainties as they change the state from one condition to another in the creation of a product unique to
itself, though it may be similar to other products. Effective project management is characterised by the use of project-specific tools, skills and techniques, authority gaps, conflicts, use of teams, project politics, high risk, networking and interfering shareholder interests.

4.2 TYPES OF PROJECTS

There are numerous classification methods used for project classification. Projects can be classified in terms of the project type, size, scope, cost and time frame or by focusing on the clarity of the objectives and the project processes. Obeng, Frigenti and Comminos, cited by Burke (2007:19) classified the projects into four distinct types, namely, fog, movie, quest and painting by numbers. The same classification can be used to describe stages that a project will pass through in the process of execution. Table 4.2 illustrates this classification. The type of project impacts on other variables of the project, i.e., predetermines the cost for the project, affects the time required for the task, suggests attainable levels of quality and the scope, the risks dependent on the type of the project, the structure of the organisation that must suit the type of project and leadership competencies should have relevance to the type of project.

Table 4.2: Classification of projects by clarity of objectives

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fog type</td>
<td>Fog-type projects are characterised by a lack of clarity as to the possible results and how to achieve them. The stakeholders and the participants are walking in the dark.</td>
</tr>
<tr>
<td>Movie type</td>
<td>Movie-type projects are projects where participants have a high degree of certainty on execution, but not on the outcome and deliverables.</td>
</tr>
<tr>
<td>Quest type</td>
<td>These are semi-closed projects where the participants know what they want to achieve but do not know how to achieve the desired deliverables.</td>
</tr>
<tr>
<td>Painting by numbers</td>
<td>These are closed projects where the participants and most stakeholders have a high degree of certainty about what is to be done and how to achieve it.</td>
</tr>
</tbody>
</table>

(Source: Adapted from Burke 2007:19)
The difference in size can be used for classification, but this lacks stringent measures on what constitutes, small, medium or large. The researcher hypothesises that project complexity increases with the increase in size and the technical complexity of the project. Project management functions and responsibilities move along a continuum which increases with the size of the project and the ensuing complexity. Small projects are most likely to be straightforward and not complicated, and may be owned and managed by the same person, no authority gap will exist. Medium size projects will most probably be run by the owner depending on the technical requirements and financial viability, otherwise the owner may appoint a technical person to assist in the management of the implementation of the project. The medium sized project will have slightly more requirements in terms of both technical and resource requirements. Large complex projects will inevitably require more technically skilled people and will need higher managerial competencies to effectively execute the project to a satisfactory stage. Therefore, the increase in the complexities warrants a higher demand on appropriate technical as well as human resource management skills, and this requirement moves in a continuum as illustrated in Figure 4.3 below.

**Figure 4.3: Project manager – leadership continuum**

<table>
<thead>
<tr>
<th>SMALL</th>
<th>MEDIUM</th>
<th>LARGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less technical expertise</td>
<td>Moderate technical skills</td>
<td>Need for technical expertise</td>
</tr>
<tr>
<td>Small risk of loss of money</td>
<td>More interest on possible loss</td>
<td>High risk more senior concern</td>
</tr>
<tr>
<td>Less political interest</td>
<td>Increased political interest</td>
<td>High political interference</td>
</tr>
<tr>
<td>Manager works like GM</td>
<td>Command and influence</td>
<td>Need for leadership approach</td>
</tr>
<tr>
<td>Manager makes most decisions</td>
<td>Decisions shared with team</td>
<td>Management team decides</td>
</tr>
<tr>
<td>Structure hierarchical</td>
<td>Hierarchical – matrix</td>
<td></td>
</tr>
</tbody>
</table>
As the size of the project increases, the technical skills requirement, the time and scope increase, the risk levels increase with the increase in complexity and the resources required increase simultaneously along the continuum. The size of a project is therefore an important variable on the demands and or requirements of both tools and skills for the execution of the project. As the size increases, there is a corresponding demand on the skills of the project manager, and leadership increasingly becomes necessary.

Norrie and Walker (2004:47-56) stated that there is a greater need for movement from project management to project leadership as the context of the project becomes more vague, complex, dynamic and challenging. Small projects may be the construction of a house or arranging a birthday party, medium projects may be the construction of 1 000 low income houses for a municipality, and a large project may be the construction of a national hospital or a soccer stadium such as the 2010 World Cup. The resource requirements will be directly proportional to the size of the project and its complexity and technical requirements. Most non-project corporations have moved to ‘management by project’ as project management appears to be more effective in the accomplishment of tasks. As indicated earlier there is no standard against which the size of a project may be classified as small, medium or large.

4.3 EMOTIONAL INTELLIGENCE

Emotional intelligence is the ability or skill to perceive, assess, and manage the emotions of oneself and others (Cabanis-Brewin, 2010:49). This is divisible into five competencies, namely, self-awareness, self-regulation, self-motivation, empathy and social skills. Turner and Muller (2005:149-161) observed specific instances where appropriate leadership styles, competence and emotional intelligence of the leader produced effective project leadership. This is in agreement with Goleman, Boyatzis and McKee (2002) who stated that the ‘leader’s emotional intelligence has a greater impact on his or her success as a
leader, and the performance of the team than does a leader’s intellectual capability. Emotional intelligence is characterised by four dimensions from which six leadership styles emanate, the leadership styles are visionary, coaching, affiliate, democratic, pacesetting and commanding. The domains of emotional intelligence and corresponding competencies are shown in Table 4.3 below.

**Table 4.3: Domains of emotional intelligence**

<table>
<thead>
<tr>
<th>DOMAINS</th>
<th>COMPETENCIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal Competence</td>
<td></td>
</tr>
<tr>
<td>• Self-awareness</td>
<td>1 Emotional self-awareness</td>
</tr>
<tr>
<td></td>
<td>2 Accurate self-awareness</td>
</tr>
<tr>
<td></td>
<td>3 Self-confidence</td>
</tr>
<tr>
<td>• Self-management</td>
<td>1 Emotional self control</td>
</tr>
<tr>
<td></td>
<td>2 Transparency</td>
</tr>
<tr>
<td></td>
<td>3 Adaptability</td>
</tr>
<tr>
<td></td>
<td>4 Achievement</td>
</tr>
<tr>
<td></td>
<td>5 Initiative</td>
</tr>
<tr>
<td></td>
<td>6 Optimism</td>
</tr>
<tr>
<td>Social Competence</td>
<td></td>
</tr>
<tr>
<td>• Social-awareness</td>
<td>1 Empathy</td>
</tr>
<tr>
<td></td>
<td>2 Organisational awareness</td>
</tr>
<tr>
<td></td>
<td>3 Service</td>
</tr>
<tr>
<td>• Relationship</td>
<td>1 Inspirational leadership</td>
</tr>
<tr>
<td>management</td>
<td>2 Influence</td>
</tr>
<tr>
<td></td>
<td>3 Developing others</td>
</tr>
<tr>
<td></td>
<td>4 Change catalyst</td>
</tr>
<tr>
<td></td>
<td>5 Conflict management</td>
</tr>
<tr>
<td></td>
<td>6 Building bonds</td>
</tr>
<tr>
<td></td>
<td>7 Teamwork and collaboration</td>
</tr>
</tbody>
</table>

(Source: Adapted from Turner & Muller 2005:52)

The first four leadership styles are considered good for project team building, whereas the last two (commanding and pacesetting) may cause dissonance and should be used with care (Turner & Muller 2005:49-61). As a variable, appropriate emotional intelligence enables a leader to practice proper judgment, manage the human resources and effect the required change. Such competencies are indispensible in a project environment given the levels of
uncertainties, the nature of conflicts, and the pressure to meet the expectations of the stakeholders.

Managers with a high level of emotional intelligence are most likely going to understand how they are feeling, how others feel, and will most probably manage their feelings so that they do not get in the way of proper decision making and consequently effective project execution (Epstein 1998). Emotional intelligence can also help managers perform their important interpersonal roles such as, figurehead, leader and liaison (Early & Peterson 2004:100-115). As a variable, emotional intelligence of the leader impacts on the success of the project, whilst other factors are critical for the success of the project, effective leadership is indispensable if the multi-disciplinary project should deliver the correct scope, with the right quality, within the stipulated budget and time, and please all the participants and stakeholders of the project. Figure 4.4 illustrates the elements of emotional intelligence.

Figure 4.4: Benefits of emotional intelligence

<table>
<thead>
<tr>
<th>Personal benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 will make rational decisions</td>
</tr>
<tr>
<td>2 will keep low stress levels</td>
</tr>
<tr>
<td>3 understand employees well</td>
</tr>
<tr>
<td>4 have empathy for employees</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Organisational benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 will motivate employees to work</td>
</tr>
<tr>
<td>2 will stimulate employees to work</td>
</tr>
<tr>
<td>3 keep balanced moods at work</td>
</tr>
<tr>
<td>4 allow for good work environment</td>
</tr>
</tbody>
</table>

(Source: Researcher's own construct from Turner & Muller 2005:49-6 and Early & Peterson 2004:100-1151)

Emotional intelligence has the potential to contribute immensely to effective leadership in multiple ways and can help managers to make effective and efficient contributions to society (Begley 1998:74; Goleman 1998). Emotional intelligence enables the leader to retain his self-confidence and enthusiasm which will inspire
subordinates to assist the organisation to reach its objectives; it further assists to awaken employee creativity (Zhou & George 2003:545-568). In reality about 88% of project managers spend more than half their working time interacting with others (Strohmeir 1992:45-48). This high level of interaction demands the ability of the leader to handle subordinate problems, organisational problems and personal problems without breaking down (Loo 1996:6-14). The focus of studies on effective project management should move away from looking for critical tools to lead effectively and rather focus on effective leadership as a critical factor for project management.

A study on the leadership style of construction managers in Hong Kong revealed that human skills are of paramount importance in successful project execution (Rowinson, Ho, & Yen 1993:455-465). Many studies show that a high IQ score is not a guarantee for outstanding job performance and this tool has failed to provide sufficient variance in success criteria both in education and the organisational environment (Dulewcz & Higgs 2000:341-372). Research findings show that emotional competencies (the potential of emotional intelligence (EI) translating into practical capabilities) is twice more important than IQ (Goleman 2001:27-44). Emotional intelligence is therefore an indispensible variable necessary for effective and successful project implementation.

Higgs (2003: 273 – 284) concluded after an extensive study that EI is increasing in acceptance as a critical success factor in the workplace. The emphasis of their study was on the effectiveness of EI in project management and leadership styles for project implementation. The research findings confirm that managers with high emotional intelligence were more proactive, communicated openly and were more delegating and possessed above average interpersonal relationship skills compared to those with low emotional intelligence.

4.4 MATRIX STRUCTURE AND THE AUTHORITY GAP

The matrix structure was first developed in research and development organisations in an effort to minimise human resource costs and capitalise on expertise found within the organisation (Burke and Barron, 2007:11). Resources are pulled from different functional departments and seconded to the project function to produce new unique products specific to the specified requirements at that time. The matrix puts
together two distinct features, the functional and the project organisation structures (Jones and George, 2009:350). Figure 4.5 illustrates the matrix structure for project management.

**Figure 4.5: The matrix structure**

Functional departments are organised around specific disciplines or technologies and this enables technologists to keep in touch with the latest developments in their disciplines. In the process, the functional departments create silos in the organisation which make it difficult for easy interdisciplinary flow of information. The project formed in a matrix structure brings together the expertise from the silos and improves the interdisciplinary flow of information and expertise and brings about total integration of the organisation (Jowah, 2012:1097 - 1106). This does not however translate to an easy relationship between the project and the functional departments, it has its own flaws. The matrix seeks to overcome the inherent divisions in the basic functional structure by drawing from different expertise and integrating them into a form that will produce a new product or process. The advantages and disadvantages of the matrix system are summarised in Table 4.4 below.
Table 4.4: Advantages and disadvantages of the matrix system

<table>
<thead>
<tr>
<th>ADVANTAGES</th>
<th>DISADVANTAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contains both functional and project structures</td>
<td>Increases goal conflicts in project management</td>
</tr>
<tr>
<td>Team based with multiple skills from other sections in the organisation</td>
<td>Dual reporting causes divided employee loyalty</td>
</tr>
<tr>
<td>Allows employees to look at bigger picture</td>
<td>Project managers cannot choose who to work with</td>
</tr>
<tr>
<td>Supports overall cross functional teams and cultures</td>
<td>No one takes direct responsibility over the team’s failures</td>
</tr>
</tbody>
</table>

(Source: Jowah, 2012:1069 - 1106)

The functional department usually focuses on perfecting the operations of the department and high technologies, when the project form is engaged in high risk uncertainties. The matrix structure creates two centres of power in two or more managers which results in conflict in trying to balance the organisational needs (Cleland 1968:78-80). If the two competing centres of power are balanced, the organisation benefits from the matrix structure, but these are never balanced because they compete for resources. In the early stages of developing the matrix as a solution to effective management of resources in complex organisations, Katz and Allen (1985:67-87) identified the conflicting forces of the matrix as conduits that will affect the nature and functioning of the matrix. The deciding factor is the personnel seconded to the project from the different functional units, they hold the balance of the scale and may support or not support the project manager. The power struggle in the matrix concerns technical expertise and decisions regarding the work of the project. The important question that creates loyalty problems is who has the power to decide on salaries and promotions, and the staffing and organisational assignments for the employees caught up in the conflict? This power generally resides with the functional manager since recruitment for the organisation is done by the respective departments that in due course may second their expertise to the project. The project manager remains with little power over both human and material resources necessary for project execution. Numerous factors influence and impact on the matrix system, illustrated in Figure 4.6 below.
Figure 4.6: Factors for support in matrix structure

- manager’s power over salary
- manager’s power over promotion
- manager’s power over staffing
- manager’s leadership style
- manager’s emotional intelligence
- Employee’s professional interest
- duration of the project

(Source: Researcher’s own construct)

Very little is known about the effectiveness of the matrix system in projects, as there is little research results or findings on the relationships between project performance and the distribution of power and influence in the organisation. What is evident is that the matrix structure creates an authority gap (Jowah, 2012:1097 - 1106). The project manager never chooses his team and subordinates, never decides on salary or appointment of team members and has no direct authority over the employees. The employees and team members seconded to the project have dual loyalty. The unit of command principle does not apply in the matrix structure, and too often creates confusion on loyalty amongst the employees. The project manager does not have full control of the people under him, or the team members he works with. This authority gap becomes the critical determinant of the leadership style he or she will adopt for the project. Research shows that managers of high performing projects are very influential outside of the project arena (Katz & Allen 1982:103-110).

4.4.1 The authority gap

The serious limitations in the use of legitimate power imposed on the project manager by virtue of his awkward position where there is no direct authority imposes on the manager, a need to resort to unconventional methods and techniques to effectively implement the project (Hodgetts 1968:211-219). The project managers’ responsibilities exceed their authority; they have no authority to reward, fire or promote in the matrix structure. The project managers have to find ways of increasing their authority by resorting to the use of techniques and tools unique only
to project management. The only other skills available apart from technical skills are soft skills - the human skills. If the project fails they are still held responsible, even though they have to operate with such limitations. Figure 4.7 below summarises the techniques and competency variables necessary for effective leadership at the disposal of a project manager.

**Figure 4.7: Techniques at the disposal of the project manager**

- ability to negotiate / politics
- emotional intelligence
- power of persuasion
- the manager’s personality
- technical competence

(Source: Jowah, 2012:1097 - 1106)

The extent of the authority gap is determined by many factors, such as the size of the project, the source of the resources required, the organisational structure and the extent of the authority given to the project manager in the matrix mix. By implication therefore the extent of the authority gap moves along a continuum dependent on the factors listed above. Some researchers have added ‘reciprocal favours,’ but Hodgetts’ research in earoospace (1968:211-219) in a research in the aerospace, construction and government departments recorded low results on the effectiveness or the usefulness of the application of soft skills by project managers. The manager’s ability to use the techniques at his disposal, the organisational structure, and the culture of the organisation are direct determinants of the likelihood of success in project execution.

The matrix structure is designed to maximise on the organisational resources by sourcing individuals with the relevant skills and expertise to the project whilst they can still perform their regular functional departmental duties (Gray & Larson 2008:65). The structure seeks to achieve the much needed organisational integration by legitimising the project manager, but, provides a divisive dual focus between the
functional technical expertise and the project expectations. A distinction on how these two units differ is shown in Table 4.5 below.

**Table 4.5: Differences of Project Manager and Functional Manager in a Matrix Structure**

<table>
<thead>
<tr>
<th>Project manager</th>
<th>Negotiated issues</th>
<th>Functional manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>What has to be done?</td>
<td>Who will do the task?</td>
<td>How will it be done?</td>
</tr>
<tr>
<td>When should the task be done</td>
<td>Where will the task be done?</td>
<td>How will the project involvement impact normal functional activities?</td>
</tr>
<tr>
<td>How much money is available to the task?</td>
<td>Why will the task be done?</td>
<td>How well has the functional input been negotiated?</td>
</tr>
<tr>
<td>How well has the total project been done?</td>
<td>Is the task satisfactorily completed?</td>
<td></td>
</tr>
</tbody>
</table>

(Source: Adapted from Gray & Larson 2008:65)

The matrix structure moves along a continuum and can be understood as falling into three categories along the continuum:

- Weak matrix-project manager works as a staff assistant drawing schedules, checklists and collecting information on status of work.
- Balanced matrix – the project manager defines what needs to be accomplished and the functional manager decide on how it will be accomplished, and
- Strong matrix. – project manager controls most of the aspects of the project, including the scope, trade-offs, and assignment of functional personnel

**4.5 ORGANISATIONAL STRUCTURE AND CONFLICT**

One project management variable is conflict, and conflict is the 'interaction of interdependent people who perceive opposition of goals, aims, and values, and who see the other party as interfering with the realisation of their goals (Putman and Poole 1987:552). Organisational conflict is a discord that arises when the goals, interests, or values of different individuals or groups are incompatible and the groups block or thwart one another’s attempts to achieve their goals (Jones & George 2009:605). Conflict is inevitable in organisations and between individuals within the organisation; this is a characteristic of the matrix structure in project management. Organising people into project work teams in a matrix form inevitably involves conflict
because the teams are composed of professionals with different technical and competency orientations towards work (Gemmill & Thamhain 1974:216-224). During the life cycle of a project, the causes of conflict change in their nature through the project phases, defining, planning, executing and delivering. Each one of the life cycle phases of the project is divided into seven activities, namely, schedules, priorities, workforce, technical, procedures, cost and interpersonal activities. Conflict by nature calls for effective leadership and high levels of emotional intelligence, and failure to address or resolve them correctly will inevitably disrupt or stop the project altogether. The success of a project is inherently tied to the project manager’s ability to resolve conflict, which, unavoidably, is part of the life of a project manager. The types of conflict and their intensities during different project stages are illustrated graphically in Figure 4.8 below.

**Figure 4.8: Conflict intensity during the project life cycle**

![Graph showing conflict intensity during project life cycle](image)

(Source: Gray & Larson 2008:368)

As a variable, conflict directly impacts on project management success which will affect the completion of the project schedules. In Table 4.6 below the activities as causes of conflict in the project are shown in increasing order, the lowest at the top and the highest cause at the bottom. The types of conflict vary with the different phases of the life cycle of a project (defining phase, planning phase, executing phase and the delivering phase).
Table 4.6: Conflict areas in the project life cycle in ascending order

<table>
<thead>
<tr>
<th>Defining phase</th>
<th>Planning phase</th>
<th>Executing phase</th>
<th>Delivering phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpersonal</td>
<td>Cost</td>
<td>Interpersonal</td>
<td>Procedures</td>
</tr>
<tr>
<td>Technical</td>
<td>Interpersonal</td>
<td>Cost</td>
<td>Technical</td>
</tr>
<tr>
<td>Cost</td>
<td>Workforce</td>
<td>Procedure</td>
<td>Cost</td>
</tr>
<tr>
<td>Workforce</td>
<td>Technical</td>
<td>Priorities</td>
<td>Priorities</td>
</tr>
<tr>
<td>Schedules</td>
<td>Procedure</td>
<td>Workforce</td>
<td>Workforce</td>
</tr>
<tr>
<td>Procedures</td>
<td>Schedules</td>
<td>Technical</td>
<td>Interpersonal</td>
</tr>
<tr>
<td>Priorities</td>
<td>Priorities</td>
<td>Schedules</td>
<td>Schedules</td>
</tr>
</tbody>
</table>


The competencies required by the project leader inevitably depend on the stage of the project life cycle. By implication therefore, the project leader needs to have numerous competencies that are applied according to the demands of the situation and circumstances, which will vary from time to time. Thamhain and Wilemon (2009:31-49) in their study identified several fundamental areas from which conflict emanates, and these are grouped as project priorities, administrative procedures, technical opinions, performance trade-offs, manpower resources, cost estimates, scheduling, sequencing of the work, and personality conflict. These can be broadly viewed as falling under planning and human skills, meaning the human element continues to surface in all aspects of the project.

In a separate study Kilman and Thomas (1975) looked at competencies required to handle the conflicts ensuing from different project execution phases, they identified five conflict handling modes, namely, competing, collaborating, compromising, avoiding and accommodating (Figure 4.9).
Of the two areas where conflict emanates, personality conflicts are the most difficult to resolve because they are relational; this is where the dysfunctional is located. This personality conflict resides in two or more people of differing backgrounds trying to express themselves and thereby cause interpersonal incompatibility. Small though it may be, it is very disruptive and results in coalition within the project or organisation, every conflict should be nipped in the bud. The outcomes of efforts to resolve a conflict are a product of the leadership style and the choice of conflict management strategy (Lather, Jain, Jain & Vikas 2009:19-38). As a variable therefore, the maturity and emotional intelligence required by a project leader constitutes an important part of the interrelationships within the group members and the way they relate to the project leader. A leader who fails to identify correct methods to solve these problems, may eventually lose the power of influence and fail to integrate the different functions of the project. It is critical therefore that the leader has a full understanding of the environment, the culture of the workmates, and where possible their expectations. The conflict resolution modes are illustrated in Figure 4.10 below.
Research indicates that managers spend approximately 20% of their working time dealing with conflicts (Appelbaum, Abdallah & Shapiro 1999:60-77). This ties conflict resolution directly to the leadership style. The manager needs to be able to resolve specifically conflicts that tend to disrupt operations. An appropriate leadership style is needed at each project phase given the circumstances prevailing, a special skill is required to utilise correctly the 20% of work time the leader spends attending to conflicts. The project leader’s leadership style depends on socio-demographic indicators such as the type of work, position within an organisation, the employee’s individual personal traits and cultural background (Omeltchenka & Armitage 2006: 315-338). It should be stated that conflicts are not always negative, and that certain conflicts will assist the management to look at other views and possible solutions to other unrelated problems.

The Conflict Management Mode (CMM) commonly used today was derived from Blake and Mouton’s conceptual scheme used to employ problem solving, smoothing, forcing, withdrawal and sharing. The different modes that can be used for conflict resolution, as identified by Lippitt (1982:70-71), are competing, collaborating, compromising, accommodating and avoiding. The choice depends on the situation. Significant findings have revealed that women prefer more accommodative CMMs against males’ preference for confrontational, aggressive and competitive modes.
Older employees avoid conflict, and at higher levels assertiveness sets in whilst avoiding and accommodating show a decrease (Braham, Margavio, Hignite, Barrier & Chin 2005:197-208). Cultural background, traditional values and social norms can be deciding factors on the choice of the style adopted to resolve the conflict (McKenna & Richardson 1995:56-70). The success of a manager can be judged easily on his ability to solve conflicts to the benefit of the conflicting parties and the organisation at large.

4.6 ORGANISATIONAL CULTURE AND THE ROLE OF THE TEAM

Culture is shared characteristics and values that distinguish the members of one group of people from those of another (Hofstede 1980:25-28). A value is a basic belief about a condition that has considerable importance and meaning to individuals belonging to a group and this is relatively stable over time (Erez & Earley 1993). Culture, as a project management variable, can be observed in three dimensions, either as an individual’s culture, organisational culture or a combination of both. Organisational culture can be profiled on a continuum based on the degree of support for the project, unfortunately this is not reflected in the literature on project management and culture (Morrison, Brown & Smit 2006:39-54). There is a need to develop a conceptual definition of a supportive organisational culture for project management, and subsequent empirical verification of that conceptual formulation. Such verification will provide a diagnostic instrument that can be used to differentiate between supportive and non-supportive project organisational cultures. It should be stated again that implicit leadership, and indeed followership theories are based on cultural beliefs and values as practised by the individuals and as a collective in the organisation. Their perceptions of what constitutes a good leader depend largely on their background which is rooted in their culture and experience. Together these different cultures form a new organisational culture with elements of the different cultural groupings or a new culture altogether. Morrison’s diagnostic tool for organisational culture is shown in Table 4.7 below.

Table 4.7: Cultural diagnostic tool with 14 dimensions of organisational culture
<table>
<thead>
<tr>
<th>Dimension</th>
<th>Description</th>
<th>Approaches supportive of project management</th>
<th>Approaches not supportive of project management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic direction</td>
<td>Clear direction at top level that aligns all projects with organisation’s strategy</td>
<td>Clear mission and strategy. Project justification and prioritisation procedures aligned with strategy.</td>
<td>Little focus, opportunistic goals not measured. Little systematic project portfolio build-up</td>
</tr>
<tr>
<td>External focus</td>
<td>Focus on market and external opportunities</td>
<td>Concerned with customer satisfaction, maintain competitive edge. Always pursue renewal initiatives</td>
<td>Tend to be complacent about own products and position in the market</td>
</tr>
<tr>
<td>Culture management</td>
<td>Shaping the organisation’s culture towards project management</td>
<td>Cross-functional mutual interests, goals, sharing information and interrelation awareness</td>
<td>Low strategic intervention to reform bureaucratic processes and functional solidarity</td>
</tr>
<tr>
<td>Organisational cohesion</td>
<td>Organisational subunits encouraged to support project teams.</td>
<td>Low hierarchy and formality awareness, socialisation to enhance team formation, team based awards</td>
<td>Low application of team formation techniques, individual recognition, team recognition</td>
</tr>
<tr>
<td>Performance orientation</td>
<td>Energy directed and controlled towards high performance</td>
<td>Pro-active, focused, action oriented communication. Stimulate will to complete projects within targets</td>
<td>Re-active focus on avoidance of past failures. Scant incentives to raise performance above minimum requirements</td>
</tr>
<tr>
<td>Conflict resolution</td>
<td>Procedures to resolve conflicts about resource allocation and project priorities in place</td>
<td>Project leaders encouraged to air conflicts. Guaranteed freedom to express differences</td>
<td>Project leaders reluctant to air conflicts. Cautious to act and scared of reprimand</td>
</tr>
<tr>
<td>Disposition towards change</td>
<td>Management willingness to replace old practices with new ones</td>
<td>Workers encouraged to be creative and innovative. Intensive and active interaction and reflection.</td>
<td>Dogmatic orientation about practices that worked well in the past</td>
</tr>
<tr>
<td>Employee participation</td>
<td>Team members perceive themselves to be allowed to participate in decision</td>
<td>Members readily contribute to information for decision making and consensus</td>
<td>Members leave decision making to higher levels, reluctant to question and don’t</td>
</tr>
<tr>
<td>Locus of authority</td>
<td>Making processes</td>
<td>Degree of authority, freedom and independence bestowed on the project leaders</td>
<td>Project leader’s authority concomitant with responsibility and accountability for project</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------</td>
<td>------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Management style</td>
<td>Management provides clear communication, assistance and support to project teams</td>
<td>Visible support from top management in accordance with project priorities</td>
<td>Confusion about project priorities without clear project portfolio procedures</td>
</tr>
<tr>
<td>Process and systems support</td>
<td>Organisation pursues supporting and enabling systems and procedures</td>
<td>Systems and software compatible with that of the organisation; sound knowledge management</td>
<td>System compatibility lacking with knowledge gained from experience not captured / formalised</td>
</tr>
<tr>
<td>People management orientation</td>
<td>Organisation maintains a flexible and innovative character</td>
<td>Focus on innovative, risk taking, entrepreneurial behavioural patterns</td>
<td>Focus on status quo, maintains rules and supervision, risk avoidance</td>
</tr>
<tr>
<td>Decision making rationale</td>
<td>Decision making driven by the interests of the organisation based on systematic analysis of facts</td>
<td>Systematic decision making based on facts and data prevails; the interest of the organisation</td>
<td>Quick gut-feel decision making; often in the interest of individuals / political concerns</td>
</tr>
<tr>
<td>Communication flow</td>
<td>People openly communicates up and down and across lines.</td>
<td>Free distribution of information. High levels of trust and knowledge sharing</td>
<td>Information flow erratic; used for personal advantage. Bad news smothered.</td>
</tr>
</tbody>
</table>

(Source: Morrison 2005:127)

The impact of organisational culture is more pronounced in projects operating within the matrix structure (Gray & Larson 2002:47-56). Most organisations using matrix are hybrid organisations running projects using project structure alongside the traditional management structures.

### 4.7 STRUCTURE, POLITICS AND PROJECT MANAGEMENT

Little is documented on project politics and how its effects on the role of the project manager and the subsequent success of the project (Sense 2003:107-114). Senior and successful project managers have long known the importance of maintaining strong political ties throughout their organisations as a method for achieving project success. Many companies have adopted ‘management by projects’ despite its
limitations due to the authority gap experienced by the project managers themselves. The project manager's role is performed in the absence of absolute power and influence and draws his team members from other managers' functional departments. Kerzner (2009:9-13) posited that the project manager is responsible for coordinating and integrating activities across multiple and functional lines. This weakens the project manager's strength and creates an authority gap as he has to depend on the cooperation from the functional managers. In the view of Smith, Houghton, Hood and Ryman (2006:622) maintained that this creates a political power struggle and authority limitations as power inequality within a team is positively associated with firm performance. Gemunden, Salomo and Krieger (2005:366-373) attested to the fact that, project leaders are to have an influence on project goals in the decision process for setting up a project. Power and politics in organisations are an integral part of organisational life (Belout & Gauvreau 2004:1-11). Political power is necessary to obtain preferred outcomes in situations having disagreement on choices connected to project success (Engwall, 2003:789-808). Muller and Turner (2007:298-307) submitted that project politics should not be seen in a negative light only, when correctly used it will benefit the organisation. Project managers must use politics to influence matters more to their own advantage (Vigoda & Cohen 2002:311-324). However, much depends on the power structures and the political power bases within the organisation, and the ability of the project manager to access those power bases.

4.8 PROJECT TOOLS AND TECHNIQUES

Knipe, van der Waldt, van Niekerk, Burger and Nell (2008:10) asserted that a project is a change-creating human endeavour limited in time with mixed goals and objectives uniquely cutting across organisational structures and projects are not repetitive. The unpredictability of failure or success of projects necessitates the identification of tools and techniques critical for successful project implementation (Papke-Shields, Beise & Quan 2009:1-21). The execution of the change-creating human endeavours or projects, namely, complex human endeavours, bringing about change, mixed goals and objectives, quality expectations and a fixed cost within a specified time executed with use of specific tools and techniques because of its uniqueness requires cross functional skills for successful execution (Dwivedula & Bredillet 2009:1-8). The researcher takes the view that there are generic tools and
techniques inherent in the execution of a project. Mantel, Meredith, Shafer and Sutton (2005:2) added that a project is specific, timely, usually multidisciplinary and always conflict ridden. The conflicts emanate from many sources including the matrix structure and the presence of an authority gap due to the presence of the matrix structure specifically for those projects embedded in large organisational structures (Gray & Larson 2008:68). Projects are therefore unique non-repetitive once off undertakings aimed at producing a specific output or result in a unique environment within a given space of time.

Project management as a process includes optimisation of resources to reduce the risk of project failure, as such it is imperative that certain operations necessitate the use of particular tools and techniques (Martin & Tate 2001:9). The primary purpose of a project is to meet or possibly exceed customer expectations by producing the intended results with little loss of time, resources and the quality as perceived by the customer. The consequence for this quest for perfection in the execution of such a uniquely complex and unrepeatable undertaking is a need for the use of the right tools and techniques.

Tools and techniques as variables are the systems and methods or the equipment and the methods used to execute an undertaking. The tool is only as good as its relevance to the task at hand as well as the expertise of the user of the tool. There are numerous tools that can be utilised, namely; the project plan, complimentary plans of the project, meeting and reporting structures, pre-agreed on performance standards, project and milestone schedules, progress reporting templates, computers and software programs, Gantt charts, work breakdown structures, critical path methods, PERT and milestone charts. The ability of the project leader to know what tool to use, when to use it, and how to use it constitute leadership competencies.

4.9 THE IRON TRIANGLE OF PROJECT MANAGEMENT

Constantly referred to as the triple constraints, the iron triangle is inextricably stated and predetermined in most definitions for project management. Project management is the application of a collection of tools and techniques (such as the CPM and matrix organisation) to direct the use of diverse resources toward the accomplishment of a unique, complex, one-time task within time, cost and quality constraints. Each task
requires a particular mix of these tools and techniques structured to fit the task environment and the life cycle (from conception to completion of the task.

All definitions of project management have not changed in the last 50 years, they directly mention time, quality and cost (TQC). The factors that have been used may be in error (Bernstein 1996:47-51). Wright (1997:181-186) reduced the iron triangle list to two variables, time and budget. Many other researchers however agree that the iron triangle is valid as a criteria to be used to measure success, but not exclusively. Short term measures should be used during project build, using the earned value method to determine if the project is not going off-track by measuring actual costs against budgeted costs.

Costs tend to measure progress, and progress is not the same as success, as success is dependent on the stakeholder and their interest in the project. Some projects are time based (stadiums must be ready 2 months before the World Cup begins). In such projects, meeting the time schedules might be a measure of success. Projects measured against time, quality and costs are measuring the delivery stage and simply refer to doing something right; that is measurement of results (Meyer 1994:95-103).

Other researchers who included the iron triangle criteria (Turner 1993) and Morris and Hough (1987) added other dimensions to the iron triangle as necessary criteria to measure a project management process. Together with the iron triangle the authors added information system, benefits to the organisation and benefits to the stakeholder community. These additions constitute Atkinson’s new criteria, the ‘square root.’ The square root is illustrated in Figure 4.11 below.

Figure 4.11: Atkinson’s Square Route
Time, quality and costs can no longer be treated as the sole determinants of project success, they are however essential as criterion of certain projects depending on the focus. Some projects are focused on being on budget to the detriment of quality, this is common with most community projects where delivery has got to be within the available funds, e.g. community housing projects, and AIDS awareness campaigns for the communities). Some projects are focused on delivery times without concern about the funds (supplies for a wedding ceremony) and sometimes to the detriment of quality (food at a mass rally). Meeting all the three at once is a complex undertaking.

4.10 PROJECT SCOPE
The scope of a project is the sum total of all the deliverables in a project, and this defines the end result of any project execution. The scope is the basis on which an agreement on deliverables is given and scope definition is critical for both project design and project success. Project planning is based on the scope and understanding of the requirements by the customer, and poor scope definition leads
to incorrect planning for the project (Cho & Gibson 2001:115-125). Project planning is the project phase involving all the project tasks from initiation to detailed design. Greater pre-project planning efforts lead to improved performance on industrial projects in the areas of cost, schedule and operational characteristics (Gibson & Hamilton 1994). The Construction Industry Institute has developed an instrument, the Project Definition Rating Index (PDRI) to be used to define the scope for the construction industry, this tool is widely used by the industry. The tool is illustrated in Figure 4.12 below.

**Figure 4.12: Applicability of PDRI in Project Lifecycle: Typical building project**

<table>
<thead>
<tr>
<th>Project Assessment</th>
<th>Feasibility</th>
<th>Programming</th>
<th>Schematic Design</th>
<th>Design Development</th>
<th>Construction Documents</th>
<th>Construction</th>
</tr>
</thead>
</table>

(Source: Adapted from Cho & Gibson 2001)

The project scope definition is a process from which the detailed project planning emanates, this tool enables the planners to identify risks and make plans for risk management in the planning. The extent of the effort and accuracy put into scope definition may lead to successful designing, construction, and the start-up phase of the project. Gibson and Hamilton (1994) established that higher levels of pre-project planning result in cost (20%) and schedule (39%) savings. The PDRI helps in calculating the score of the level of project definition and serves as a structured approach to developing a reliable scope definition package (Gibson & Dumont 1996). The lower the score, the more well defined the project.

In most projects early planning is not carried out with the result that these projects have a poor scope definition. Poor or incomplete scope definition will cause more scope changes during execution which may be costly and time consuming for the project manager and his team (Cho & Gibson 2001:115-125). The PDRI is a user friendly checklist that will assist with the identification of the critical components of the scope definition which in turn assists project managers to better understand the scope of work (SOW). The PDRI serves as a handy tool for easy analysis of the
state of the project during its life cycle. This tool can very easily be integrated into the early planning process when project scope is developed and verified (Dumont, Gibson & Fish 1997:54-60) and can be of significant assistance during the completion of the five major sub-processes of pre-project planning. A summary of these sub-processes is presented in Figure 4.13.

**Figure 4.13: Sub-processes of scope management**

![Sub-processes of scope management](image)

(Source: Researcher’s own construct)

This tool allows project teams to plan effectively and assess the probability of achieving project objectives during the initial stages of the project. As a tool it can assist the team in the following ways:

- as a checklist to determine the necessary steps to be taken during project scope definition,
- providing a standard for rating the completeness of the scope definition to help identify possible risks,
- to monitor progress at different stages of the project’s life cycle from initiation to the closeout phase,
- as a standard tool for team members to reconcile differences from the beginning through the project life cycle, and
- help with risk management planning in the different phases of the project life cycle.

### 4.11 RISK MANAGEMENT
Studies indicate that there is a higher project failure with IT projects than with any other project types (Howard 2001). This indicates that IT projects are high risk and problematic undertakings despite best practice project management processes. The Association for Project Management defined project risk management as the systematic process of identifying, analysing, and responding to risks. A risk is any project related event or managerial behaviour that has the potential of adverse consequences on a project objective. Project risk management is meant to enable project managers to identify, plan and effectively manage the risk and minimise any adverse effects on project execution and deliverables. There is evidence, but no reasons known, that the IT project managers do not apply project risk management processes (Kutsch & Hall 2009:72-79). IT project managers face the difficulty of costs justification, time constraints and uncertainties of the success of the projects.

Risks are potential dangers that will inhibit the project manager from achieving his project objectives, and this may result in the project taking longer, or getting abandoned altogether. The positive aspect about risk is that it can identify previously unidentified risk areas for the project manager (Ward & Chapman 2002:97-105). The PMI recognises opportunities for value enhancement through effective project risk management and classifies risk management as one of its nine knowledge areas. The best practice project risk management processes can be classified into four major stages, these are: planning, identification, analysis and response.

- **Planning** – the project manager will apply risk management planning to define the activities needed to address the uncertainties.
- **Risk identification** – the project manager picks out particular uncertainties which may affect the expected outcomes of the project.
- **Risk analysis** – the identified uncertainties are scrutinised and the manager will evaluate the likelihood of these uncertainties taking place.
- **Risk response** – procedures, policies, processes and plans are developed to pre-empt the effects of the uncertainties.

The most commonly known factors constraining project risk management processes are lack of time, the problem of justification and the unavailability of information required to quantify and qualify the risk. Two out of three managers cite the lack of time as the major holdback to using risk management. Research has identified five
factors that reduce the likelihood of project risk management. These are; the problem of hindsight, problem ownership, the problem of cost justification, lack of expertise and the problem of anxiety. Table 4.8 below is a detailed report on research findings relating to non-use of project risk management.

**Table 4.8: Reasons for not applying project risk management**

<table>
<thead>
<tr>
<th>Reasons for NOT Applying Project Risk Management</th>
<th>Type of problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>We haven't got time left</td>
<td>Cost justification</td>
</tr>
<tr>
<td>No executive call for risk measurements</td>
<td>Cost justification</td>
</tr>
<tr>
<td>Company does not see the value in adding the additional cycles to a project</td>
<td>Cost justification</td>
</tr>
<tr>
<td>Top management did not think they needed it</td>
<td>Cost justification</td>
</tr>
<tr>
<td>Ignorance of the existence of such a thing</td>
<td>Cost justification</td>
</tr>
<tr>
<td>Too expensive decision made by pre-sales team</td>
<td>Cost justification</td>
</tr>
<tr>
<td>At the time no one thought it was important to do. It was the project manager's job to manage all risks himself, without help from others. It was what he was paid the bucks to do.</td>
<td>Cost justification</td>
</tr>
<tr>
<td>An initial risk analysis was done, project manager did not bother to follow it up</td>
<td>Cost justification</td>
</tr>
<tr>
<td>Too many different companies had ownership of different elements; semiformal risk management to work individual packages was applied but was not really effective, as it was not rolled up to the highest level</td>
<td>Cost justification</td>
</tr>
<tr>
<td>A single risk-identification workshop was held early in the project before my arrival. Reason for not following the process was most probably the attitude of the members of the team.</td>
<td>Cost justification</td>
</tr>
<tr>
<td>The principal reason why a formal project risk management process was not applied had more to do with the organisational culture than anything else. The organisation is culturally focused on getting things done. Thus, there was no formal project risk management process required.</td>
<td>Cost justification</td>
</tr>
<tr>
<td>Not enough time to prepare a plan. Accelerated implementation was key, not cost.</td>
<td>Cost justification</td>
</tr>
<tr>
<td>When the project was running, we did not have formal PM education in terms of the process and supporting areas.</td>
<td>Lack of expertise</td>
</tr>
</tbody>
</table>
Too many different companies had ownership of different elements

Risk was the customer's court

(Source: Adapted from Kutsch & Hall 2009:72-81)

4.12 CONCLUSION

There is consensus amongst researchers in project management that the definition of project success is vague with no agreed on criteria to judge success (Jha & Iyer, 2007:527). Criteria is a set of agreed on principles or standards by which evaluation is to be made (Lim & Mohammed, cited in Jha & Iyer 2007:527) and Koelmans (2004:231) conceded that measurement of project success is the most debated topic and yet the least agreed on topic in management. Consequently project success has no accurate measurement and means different things to different people (Toor & Ogunlana 2010:228). A project that seem successful to the client may be a financial disaster to the contractor. Research has established that different stakeholders in a project have distinct interests in the project and therefore their perception of success varies dependent on the stakeholders’ interests (Koelmans 2004:229).

Traditionally project performance is measured against the iron triangle which consists of schedule, cost and quality. Further research proposed different sets of success evaluation criteria in addition to the iron triangle (Dvir, Ben-David, Sadeh & Shenhar 2006:535). Projects are rated as successful if they are near budget, schedules, and have achieved an acceptable level of performance (Toor and Ogunlana, 2010:229). The internal measures of success are misleading, because there are external stakeholders whose expectations are to be met, such as the customer expectations, the end-user of the product, the relevance of the project, and other factors (Yu, Flett & Bowers 2005:429).

Project success is a very illusive concept largely dependent on who is looking at it and what are they looking at. Questions will be asked about the success of the World Soccer Cup in South, and many people have considered it a resounding success. The average dweller in the township did not benefit economically from the world cup,
would they consider it successful? It was thought the world cup soccer would reduce the racial divide in South Africa, it remains as ever, was the project successful?

Chapter Five will concentrate on the knowledge areas of project management.
CHAPTER FIVE
PROJECT MANAGEMENT KNOWLEDGE AREAS

5.1 INTRODUCTION

The association of Project Management Bodies of Knowledge (BoKs) have been involved in extensive publishing for close on 15 years, researching on, and eventually establishing what has become the best practice benchmarks for the profession (Cleland & Ireland 2006:4-5). The associations that are key performers in project management are the Project Management Institute (PMI) and the Association of Project Managers (APM). These associations constantly embark on research and development programmes to test if their standards of BoKs are met in practice during project execution. Results of the different associations’ efforts show significant similarities and agreement on topics that project management professionals should know (Gray & Larson 2008:4). The knowledge areas are derived from the definitions of both the project and project management, with special emphasis on the integration of different activities into the overall organisational strategic plan. Research findings on the perceived important knowledge areas by practitioners are summarised in Table 5.1 below.

Table 5.1 Empirical evidence of required knowledge areas.

<table>
<thead>
<tr>
<th>Knowledge Area</th>
<th>100% agreed on the need for</th>
<th>EMPIRICAL RESEARCH RESULTS</th>
<th>99% agreed on Safety Health and Environment as critical knowledge areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership, Legal Awareness and Procurement</td>
<td>98% agreed on Life Cycles,</td>
<td>agreed 96% on Purchasing,</td>
<td>95% agreed on Risk Management,</td>
</tr>
<tr>
<td></td>
<td>94% agreed on Financial Management as a critical area</td>
<td>93% agreed on Industrial Relations and Scheduling,</td>
<td>89% on the Business Case and Project Organisation</td>
</tr>
<tr>
<td>Hand-over,</td>
<td>87% agreed on the Project Context,</td>
<td>84% agreed teamwork and Quality Management</td>
<td>81% agreed on importance of Project Management Plan,</td>
</tr>
<tr>
<td>General topics</td>
<td>79% agreed on Contract</td>
<td>80% agreed on Post-</td>
<td></td>
</tr>
</tbody>
</table>

118
Planning and Administration  Project Evaluation Review,

78% agreed on Monitoring & Control,
77% agreed on Resources Management and the Launch,
75% agreed on Change Control Management.

(Source: Adapted from Morris 2000:1-24)

The knowledge areas from Morris’ report summarised above are not identical to the associations’ Books of Knowledge. There are other highly rated knowledge areas reported in literature, but surprisingly are considered as less important by practitioners in the survey. There is a clear contradiction between academic emphasis and the actual understanding by the project practitioners. Some of the areas were rated low are:

- Requirements Management (32%)
- Integrative Management (33%)
- Systems Management (36% not surprising: this has long caused difficulty)
- Success Criteria (42% - relatively surprising)
- Performance Measurement-, i.e. Earned Value (44% - this is significant considering how central to Project Management Theory and Best Practice the earned value is considered in literature and by experts)
- Information Management (46%).

5.1.1 Historical perspective for project management

Contemporary project management practice originated with the USA defence aerospace projects of the 1950s. Starting as internally promulgated procedures, policies, tools, techniques and programs, the discipline has now reached maturity. The current trend is projectification by the industry (Burke 2007:30). Initially project management development was based on mechanistic techniques and tools like the Work Breakdown Structure (WBS): Programme Evaluation and Review Technique (PERT): Scheduling, Resource smoothing and Critical Path Method (CPM). Extensive academic publications, conferences and other interactions brought new thoughts to the body of knowledge (Hodgson 2002:803-820). The PMI and APM have developed a curriculum to pronounce on their standards of project management. The PMI formed the Project Management Body of Knowledge (PMBOK) in 1976. Based on the PMBOK numerous other project management associations or chapters were formed. The APM in the 1990s alleged that the
PMBOK did not adequately address the requirements of the profession, they developed their own Body of Knowledge (BoK) which differs markedly from the PMBOK. The APM’s model is largely acceptable in Europe leading to the formation of the International Project Management (IPMA) with provisions to harmonise these different qualifications. Different BoKs define project management, provide the topics, and the relationships to the discipline, and the three BoKs expound different views. PMI focuses on the mechanistic generic aspects that emphasise success based on the requirements of the iron triangle (time, quality and budget). The APM has a tilt towards the behavioural aspects and includes the context of project management, general management, commercial and technological factors.

### 5.2 PROJECT MANAGEMENT INSTITUTE’S BOOK OF KNOWLEDGE

The PMBOK identifies nine knowledge areas and expands on other critical general management knowledge areas such as thinking skills, judgement, integrity, self-confidence, initiative, organisational awareness and leadership. The nine knowledge areas according to Burke (2010:48), are illustrated in Table 5.2 below.

**Table 5.2 Key knowledge areas of project management (PMBOK)**

<table>
<thead>
<tr>
<th>Knowledge area</th>
<th>Definition and explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scope management</td>
<td>Scope - work to be done per specifications. Scope management directs, leads, controls, and monitors the specifications during execution.</td>
</tr>
<tr>
<td>Time management</td>
<td>Time - Time management involves evaluating, controlling and monitoring operations to enable completion within the stipulated time.</td>
</tr>
<tr>
<td>Cost management</td>
<td>Cost - Cost management involves controlling, providing proper resources at competitive prices and staying within the project budget.</td>
</tr>
<tr>
<td>Quality management</td>
<td>Quality - Quality management is the process of controlling, leading and directing operations to meet specifications, fit-for-use.</td>
</tr>
<tr>
<td>HR Management</td>
<td>HR management entails continuous and systematic leading and controlling the dynamic human resource needs and utilisation.</td>
</tr>
<tr>
<td>Communications management</td>
<td>Project communication - critically links people, ideas and information to achieve success, it entails communication and distribution plans, performance evaluation reporting, and administrative closure.</td>
</tr>
<tr>
<td>Risk management</td>
<td>Risk management is identifying, analysing and pre-empting possible problems or failures caused by uncertainties.</td>
</tr>
<tr>
<td>Procurement management</td>
<td>Procurement management involves; acquiring, controlling, and formulation of policies for competitive acquisition of material resources.</td>
</tr>
<tr>
<td>Project integration</td>
<td>Project integration management involves coordination of initiation, planning, execution, closure, costs, schedules, quality, staffing, etc. to ensure maximum benefit.</td>
</tr>
</tbody>
</table>

(Source: Adapted from Burke 2010:48)
The Project Management Institute continuously updates the body of knowledge to keep up with new research findings and cope with the changing environment in which the project exists. The PMBOK focuses on the iron triangle and scope to the exclusion of other elements and factors in the environment.

5.3 ASSOCIATION OF PROJECT MANAGEMENT BOOK OF KNOWLEDGE

The Association for Project Management (APM Bok) subdivides project management knowledge areas into knowledge areas that include amongst others: planning, control techniques, social and ecological factors, technology, economics and finance, organisation, procurement, people and general management (Burke 2007:41). The APM BoK defined its Body of Knowledge as the broad range of knowledge that the discipline of project management encompasses which should be known by professional project managers. The 40 APM key competencies of project management are identified and grouped into four parts comprising a systems management; a high level definition of the different concrete and intangible elements

A systems management approach comprises prime activities of systems analysis, systems design and engineering, and systems development. The knowledge areas are:

- **Part 1: Project Management**
  This section of the knowledge areas deals with project management, the project environment, the project appraisal, project life cycle, project strategy and project success criteria.
  This section focuses on the systems and procedures, project close-out phase, and the post project appraisal.

- **Part 2: Organisation and people**
  This part relates to aspects of the project that focus on the management and leadership of the project - the human element. The knowledge areas stated here are organisation design, leadership, conflict management, control and coordination, delegation, negotiation, communication, team building and management development.

- **Part 3: Processes and Procedures**
In the third part, the APM knowledge areas focus on the processes, procedures and the methodologies that are applied in project execution. These are listed as work definition, scheduling of the operations and resources, cost control (budgetary), risk measurement, change control, planning, estimating, performance management, value management and mobilisation.

- **Part 4: General Management**
  The fourth and final part of the APM knowledge areas is strategic in its approach, looking at phenomena that would generally affect all elements of project management, these are: operations and technical management, information technology, quality, procurement, finance, marketing and sales, safety of the employees, the law and industrial relations.

### 5.4 PRINCE 2 AND ITS RELATIONSHIP TO PMBOK

The absence of one CENTRAL body with authority over the discipline of project management has resulted in a proliferation of other bodies and establishments seeking to define project management. In addition to PMI, APM, IPMA there also was PRINCE2™ which is a process based approach with eight process models for effective project management. The PMBOK seeks to describe the sum of knowledge within project management as a discipline. It is a knowledge based approach of useful referencing applicable to most projects most of the time.

The PRINCE2™ process is applied as a set of steps in a logical sequence during the planning and execution stages of the project. The manual ‘Managing Successful Projects with PRINCE2TM, provides a guide to project managers for effective application of the process model. The components of the manual are comparable to the PMBOK’s nine knowledge areas. A brief (not exhaustive) comparison of PMBOK and PRINCE2™ is illustrated in Table 5.3.
Table 5.3 Comparison of PMBOK and PRINCE2™

<table>
<thead>
<tr>
<th>PMBOK</th>
<th>PRINCE2™</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offers the manager information on proven practices.</td>
<td>Offers flexible and prescriptive set of steps.</td>
</tr>
<tr>
<td>Does not allow for standardisation due to absence of fixed steps.</td>
<td>Causes degree of standardisation the organisation</td>
</tr>
<tr>
<td>Is rigid and somewhat restrictive in its execution</td>
<td>Allows for customisation of the operation due to flexibility</td>
</tr>
<tr>
<td>No fixed-to-be-followed steps allows for creativity during execution</td>
<td>Constrains creativity in the step by step methods prescribed</td>
</tr>
<tr>
<td>Has no standard terminology used across the generic project execution</td>
<td>Uses same terminology and makes training easier</td>
</tr>
</tbody>
</table>

(Source: Researcher’s own construct)

Both the PMBOK and the PRINCE2™ have advantages. The PMBOK is primarily suited to academic resourcing which will enhance the discipline of project management. PRINCE2™ is a user friendly application process model easily adaptable to project practitioners from any background. The guide enables users to achieve the objectives and deliverables effectively with comparative ease.

5.5 SELECTED KNOWLEDGE AREAS

In this section a combined focus is on the key knowledge areas between PMBOK, APM and PRINCE2™. The different associations have different areas of focus, but their sum total gives more accurate information on the knowledge areas. A comparison indicating the processes as identified by PMBOK and APM is drawn in Table 5.4.
Table 5.4: Comparison of APM and PMBOK Project management processes

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Starting and initiating</td>
<td>1 Initiating</td>
</tr>
<tr>
<td>2 Defining and planning</td>
<td>2 Planning</td>
</tr>
<tr>
<td>3 Monitoring and controlling</td>
<td>3 Executing</td>
</tr>
<tr>
<td>4 Learning and closing</td>
<td>4 Monitoring and controlling</td>
</tr>
<tr>
<td></td>
<td>5 Closing</td>
</tr>
</tbody>
</table>

(Source: Researcher’s own construct)

These knowledge areas should be understood within the context of the five processes or phases of the project life cycle which comprises initiation, planning, execution, monitoring with controlling, and closure of the project. APM lists four stages and PMI lists five; the processes are essentially the same. These stages of the life cycle are essentially processes through which the project progresses until final hand over. The PMBOK defined and explained processes to manage these sub atomic processes. The PMBOK (3rd edition) guide lists 44 processes grouped into five process categories as indicated in Figure 5.1 below.

The project knowledge areas should be understood within this context of the life cycle processes. Whatever knowledge is required for efficiently and effectively managing projects should take cognisance of these phases through which the project passes during implementation. A project is unique in many ways yet singular in its execution and it cannot be executed in isolation of the past, the present and the future (Engwall 2003:789-808). The intensification of the projectification of the work place through management by projects puts another demand on academia to try to fully understand the underlying factors of effective project execution (Knipe, van der Waldt, van Niekerk, Burger & Nell 2008:52). Highly complex project type time-bound structures are constantly used to implement routine production work in factories. Du Toit and Van der Walt (1999:201) stated that organisations with such processes acknowledge the effectiveness of certain unique project management competencies absent in the traditional routine management processes.
Projects are classified by academics as unique multi-dimensional organisation-integrating processes which allow multi-skilling of the leaders and cross-functioning of the otherwise independent organisational units (Ford & Randolph 1992:267-294). The interest of academics in projects is largely based on the structures and the dynamics of individual projects as lonely undertakings, independent of history, contemporary context and a future (Kreiner 1995:335-346). By implication, earlier experience, simultaneous events and future intentions are not included in the analysis with each project considered to be unique and unrelated to the next.

Gray and Larson (2008:139) asserted that experiences learnt in one project affect decisions made in the next project, this inevitably influences some of the management behaviour during project execution. Engwall (2003:789-808) postulated that current project management knowledge is a practitioner-driven theory emerging
from practical past experiences. The development of technology has done nothing to change the project management knowledge areas (George & Jones 2009:199), it has however aided the task execution process. The human resource components aided by technological advances are critical for the success of projects.

5.6 PROJECT PLANNING

Project management planning entails project plan development, project plan execution and overall change control. Planning is not an event but a process involving development of the mission and vision, setting out the long, medium and short terms objectives dependent on the level of planning (Niemann & Bennett 2008:89). Yates and Eskander (2002:37-48) investigated a construction planning research project during the scope development and planning phases. The data collected was used to construct a total project management (TPM) delay analyses systems (DAS) that provided guidelines on how to effectively avoid project development delays. The researchers concluded that knowledge of planning becomes an essential indispensible component of effective project execution. Project planning involves identification of project development requirements, control systems, the planning process, budgeting, financing and the program management structure. Planning therefore permeates all aspects of the project from conceptualisation to final hand over.

A typical project manager has one objective, which is to bring a project to completion within the stipulated budget, time and specifications. This can only be possible if the objectives are clearly defined from the beginning, with the assumption that a good plan will yield the expected results if properly executed (Andersen 1996:89-94). Many projects are executed according to plan but never satisfy the user; Such a project is a failure. In Dvir, Raz, and Shenhar’s (2003:89-95) research an analysis of statistical correlations between planning variables and success variables was conducted, and it was concluded that there was a positive relation between the effort put into planning and the probability of success of the project. The planning process can be subdivided into: requirements definition, development of technical specification, and project management processes and procedures. Andersen (1996:89-95) postulated that project planning is complicated by the uniqueness of each project because the project will be new, which makes it difficult to plan the activities. Turner(1993) proposed the replacement of standard planning with
milestone planning to overcome the complexities of planning in project management. Bart (1993:187-197) underscored the importance of project planning but identified too much formal control as a hindrance to effective project execution. The researcher found that the origination and initiation stages where major decisions on objectives and planning are made are crucial for project success. Planning reduces uncertainty and increases the probabilities of succeeding with project execution (Dvir et al. 2003:89-95). According to the PMBOK it is a necessary to emphasise the need to plan projects, and whilst planning does not guarantee success, no-planning will most probably guarantee failure. Central to the planning of the project is the project scope.

5.7 PROJECT SCOPE MANAGEMENT

Project scope management entails initiation, scope planning, scope definition, scope verification, and scope change control. There exists interdependency between the scope and the planning of a project. Planning is mapping out the way to carry out the scope expectations. The scope is the sum total of the work or the tasks to be done to meet the objectives and satisfy the customer: the two are therefore critical knowledge areas for effective project execution. Larson and Gray (2011:102) stated that defining a project scope sets the stage for developing the project plan, on the basis of which the map is to be constructed. The scope definition is a clear definition of the project objectives, goals and deliverables. The scope definition document should state what you expect to deliver to the customer in specific, tangible and measurable terms. A project checklist is proposed. This comprises project objectives, deliverables, milestones, technical requirements, limits and exclusions, and the reviews with the customer.

Griffith, Gibson, Hamilton, Tortora and Wilson (1999:39-45), posited that greater success results in project execution are realised when there is extended effort in pre-project planning. These research findings singled out benefits to the areas of cost, schedule and operational characteristics where scope definition had been clearly defined and understood by all the stakeholders. Cho and Gibson Jr. (2001:115-125) discovered in their research that poor definition of the project scope is recognised by industrial practitioners as a leading factor in causing project failure. Through extensive research in the use and effectiveness of scope definition as an important knowledge area impacting on project success, a scope definition tool was developed for industrial projects - the Project Definition Rating Index (PDRI). A study by Gibson
and Hamilton (1994) concluded that a complete and elaborate scope definition prior to project execution is imperative to project success and they postulated that a high level of pre-project planning effort the benefits resulted in a 20% cost saving and 39%

In a similar study Dumont, Gibson, and Fish (1997:54-60) studied the PDRI for industrial projects consisting of 70 scope definition elements in a checklist, and concluded from a sample of 40 industrial projects, that:

- The average cost savings of 19% versus that estimated for design and construction was achieved;
- Schedule reduction by 13% versus that estimated for design and construction;
- Increased predictability of operational performance, and
- Fewer project scope changes, saving both cost and time.

The benefits derived from a proper scope definition make scope management a critical knowledge area for effective project management and project management success (Gibson, Liao, Broaddus & Bruns 1997). The building industry is considered to suffer extensively from serious lack of pre-project planning (Cho et al. 2001:115-125). The building industry scope management is different from the industry project scope management in aspects such as the way of planning, consideration of the owners’ perspectives and architectural focus. Poor pre-planning and poor scope definition which impact negatively on project success are similar across the different sectors, the researchers observed.

The PDRI can be incorporated into the pre-planning of the project, at which stage the scope of the project is defined (Dumont et al. 1997:54-60). It can specifically help in refining the five major steps of pre-project planning which are, initiation, scope planning, scope definition, scope verification and scope change control. Atkinson, Crawford & Ward (2006:687-698) posited that knowledge on effective scope definition and management assists with the planning process, including risk management, and effective project controls. The scope of a project if not well defined causes great uncertainties which will drastically affect many other aspects of the project management process (Gallagher 1995:21-36). Common risk management practice often fails to identify sources of uncertainty because the deliverables of a
project are not clearly defined. It goes without saying that the scope largely predetermines the cost and time it will take to complete the project, which in turn may affect the quality of the products to be produced.

5.8 PROJECT TIME MANAGEMENT
Project time management encompasses activity definition, activity sequencing, activity duration estimation, schedule development, and schedule. According to Atkinson (1999:337-342) after initially having suggested that project success was measured against the iron triangle (time, cost and quality) argued that time and cost are two guesses and quality is a phenomenon, and that these cannot be used exclusively as determinants of project success. The researcher suggested the square root as an improvement on the previous assertion. The British Standard for project management (BSPM 6079, 1996) defined project management as planning, monitoring and control of all aspects of a project and the motivation of all those involved in it to achieve the project objectives on time and to the specified cost, quality and performance. The PMI defined a project as a temporary endeavour undertaken to create a unique product implying that there is a definite start and end date. End date immediately implies time, thus time is a critical factor in projects and project execution. Whilst time is not exclusively the only factor, it is a critical element of projects, as given by definition. The management of time therefore is of the essence.

Babu and Suresh (1996:320-327) stated that project planning includes amongst other time to be taken to complete the project, and that time taken affects the cost because of fixed costs. Time can be observed in two distinct ways; the planned time it takes to complete the project on the basis of which (partly) project cost estimates are made, and the time-cost trade-off due to project crashing worked against a Cost Benefit Analysis (CBA). During the planning phase, the project is divided into milestones, work breakdown structures and, or tasks that have time allocated to them. Gray and Larson (2008:336) postulated that time is the most scarce resource a project manager often runs out of. Knowledge on the planning of time is critical if the iron triangle is to be used as a measure of both project success and project management success. For effective calculation and time planning many techniques have been developed, the main examples of which are the CPM, PERT, and Gantt charts (Burke 2007:141). The CPM determines the minimum normal time it takes to
complete a project and on the basis of this the project costs are determined, together
with other inputs. Another technique used to determine time for projects is the
Synergistic Contingency Evaluation and Response Technique (SCERT) developed
for time risk analysis and associated cost risk analysis (Gadsdon & Chapman 1983).
Knowledge of management of time is of the essence in project management since
time is part of either the iron triangle or the square root as measures of project
success. Failure to have proper time estimates easily causes the project to overrun
cost, which translates to reduced profitability as more time than budgeted for is taken
to complete the project. Another method could be the use of WBSs in which case
time is allocated to each work package (Chapman, Phillips, Cooper & Lightfoot
1985:19-26). Project time management goes beyond merely assigning time for
completion of tasks or the project in general; there is a need for time risk analysis
and the option of crashing during execution. Crashing may have a negative impact
on both the cost and quality of the project (West & Levy 1977). There is a linear
relationship between time and cost; when time is crashed, the costs will most
certainly go up. Assuming that the direct cost of an activity varies with time,
mathematical programming models have been used to minimise the project direct
costs for a given project completion time (Babu & Suresh 1996:320-327). This
method was developed by assuming that project activities and their precedence
relationships are assumed (Khang & Myint 1999:249-256). Every activity has a
normal and crash time of completion and the normal time is associated with the
normal cost and normal performance quality. The cost and quality of an activity
therefore change as linear functions of the completion time.

5.9 PROJECT COST MANAGEMENT
Project cost management comprises resource management, cost estimating, cost
budgeting and cost control. Project costs can be categorised according to three
different types of cost, namely; direct costs, project overhead costs and general
administration costs (Gray & Larson 2008:131). Direct costs comprise labour,
materials, equipment and other costs that are fixed over a period of time and are
directly traceable to a specific task or activity. Project overheads often called direct
overhead costs consist of the cost of the resources which can be directly pinpointed
to the project such as the project manager’s salary. These costs, though they are not
immediate out of the pocket expenses, still have to be paid at a certain point in time.
Costs of a project can also be viewed in two ways, cost accounting and cost management, and both these two branches of accounts are important for the project (Garrison & Noreen 1994:18). Cost management requires that managers consider how effectively resources are used towards the attainment of the deliverables as detailed in the project scope. The use of absorption costing may enable a more accurate cost estimation of the project based on an activity based costing model (Jowah 2011:112). As mentioned in the preceding sections, there is a direct relationship between time, cost and planning in the allocation and determination of resources. Due to this relationship, it is important that the project manager understands the cost behaviour during the execution of the project. A large portion of the fixed costs that is measured directly against time and volume has a direct relationship with the time taken to complete the project. A clear relationship can be determined between the scope or size of the project, the cost of the the project, and the time required to complete the project. The budgeted costs have an effect on the type of resources that will be procured, the workmanship that may be used, the time that may be allowed, and the size (scope) of the project; all these affect the quality of the product.

5.10 PROJECT QUALITY MANAGEMENT

Project quality management includes quality assurance and quality control. Quality is often defined as ‘fitness for use,’ but it is important to note that the quality of a project, like success is dependent on the interests of the stakeholder or the end user. Gitlow, Oppenheim, Oppenheim and Levine (2005:18) defined quality as predictable uniformity and dependability at low cost and fit for the market. It is imperative therefore that, managers always ensure that there is quality in their products to satisfy the needs of customers. The customer is the ultimate determinant of the quality of any offering, meaning if the customer is satisfied, that is quality. By implication what this means is what may be quality to one person may not be to the other, because quality is fitness for use. According to Goldman, Maritz, Neinaber, Pretorius, Priilaid and Williams (2010:99), the key to a customer-facing strategy is to understand what your customer’s needs are. This requires that we build the product from the outside in starting with the customer and ending with the technology. Doing it the other way round leads to entrepreneurial narcissism and customer alienation. In practice, each organisation that uses the project approach must develop and
document its own procedures to ensure quality in its product (Andersen, Grude & Haug 2004:157). According to Phillips (2002:340) quality is the good, the worth, the profitability gained from and during the implementation. Quality is also the level of excellence within the project process.

Evans and Lindsay (2005:12) stated that quality can be a confusing concept because people view quality in relation to differing criteria based on their individual roles in the production-marketing value chain. Consequently the meaning of quality continues to evolve as the quality profession matures. No consultants or business professionals agree on a universal definition for quality. Some of the items listed when quality, as a generic term, is used are: perfection, consistency, eliminating waste, speed of delivery, compliance with policies and procedures, providing a good usable product, doing it right the first time, delighting or pleasing customers and, total customer service and satisfaction. Because the project is executed to meet the customer expectations, there should be a deliberate program to work towards meeting those objectives (Wood 2007:9). The total capability of the organisation must be marshalled to delight customers by determining and fulfilling their talent as well as manifest their needs (Kubr 2002:475). For this reason quality management is important in project execution, and the success thereof. To bring about quality in the product it is necessary to consider both the quality management system and the quality control system which test and inspect the product. If this system is perfected, it becomes easy to pick up shortfalls in the quality of the tasks performed during execution (Burke, 2007:254). A project manager must have the keen sense to manage both the expectations of the deliverable and his/her own process to obtain the deliverables. The quality of the process is directly related to the quality of the deliverables. Managers have to be able to measure the cost against the quality that they bring in product or project deliverables (Phillips 2002:326). Focusing on the customer and the customer’s requirements and expectations is neither new nor revolutionary (Dahlgaard, Kristensen & Kanji 2002:26).

The project manager must build his project around the needs of the customers and this reduces the failure rate and removes unnecessary delays. Customer focus is a key element of ISO 9000:2000. For example, in the Management Responsibility section, one requirement is ‘Top management shall ensure that customer requirements are determined and are met with the aim of enhancing customer
satisfaction’. This aspect of project execution places the project manager outside of his internal operation structures. There is no element of quality that can be envisaged without consideration of the quality of the workmanship. The scope of the project, the time taken to complete the project, the determination and control of costs, and the quality of the product, all reside in the type of human resources at the firm’s disposal.

5.11 PROJECT HUMAN RESOURCES MANAGEMENT

Project human resource management involves organising, acquisition and team development. Burke (2010:243) asserted that human resource management sets the framework for the human factors and consists of two major types of documents, the planning documents and the control documents (Globerson & Zwikael 2002:58-64). These documents comprise the project organisational structure, responsibility assignment matrix, work procedures, and job descriptions. The control documents are the time sheets and the performance evaluation forms.

Belout and Gauvreau (2004:1-11) in their study of human resource management with special reference to project management, identified the problem of multicollinearity and sought to establish the importance of human resources. Numerous research findings have established that human resources are one of the critical elements in the success of an organisation. Belout and Gauvreau (2004) suggested that human resources have minimal effect on project success. Pinto and Prescott (1988:5-18) after studying ten critical success factors across the four stages of the project life cycle, confirmed these findings and posited that the ‘personnel factor’ is marginally significant in project management. These unexpected results were strongly contradicted by Belout (1998:21-26) who expressed a need to retest Pinto and Prescott’s findings.

Projects comprise the human, budgetary and technical variables and it is generally accepted that they have distinct characteristics like, limited budget, schedule, quality standards, and complex interrelated activities (McCollum & Sherman 1991:75-78). Projects have always been executed as mechanistic technical operations and not behavioural systems with a need for soft skills. The approach has always been mechanistic and focused on meeting dates, budgets, and technical specifications. It is however also accepted that stakeholders comprise a critical success factor as they
differ in their definition of project success (Baker, Tjosvold & Andrews 1990:269-276). There is therefore a serious contradiction in the findings as literature on organisational behaviour and on management indicates that a motivated workforce is more productive (Jones & George 2009:467).

Literature on general management emphasises the strategic nature of human resource management and postulates that it is strategically critical to the realisation of organisational goals and objectives (Clifford 2001:140). The Six Sigma initiatives stipulate that employees must be motivated to be able to effectively work towards the organisational objectives of meeting the quality specifications in time and within budget (Quinn, Anderson & Finkelstein 1996:71-80). For it to be effective, strategic human resource management commences with a proper job description, clarity on technical requirements, followed by recruitment and selection processes. Managers must employ people with the right capabilities, skills and experiences that will position the organisation at an advantage to achieve its objectives competitively (Hertzberg 2006). An appropriately structured organisation, with correct human resource parameters, well positioned for effective communication, would be more productive.

5.12 PROJECT COMMUNICATIONS MANAGEMENT

Project communications management entails communication plans, information distribution, performance reporting, and administrative closure.

Project management is a set of managerial activities needed to lead and guide the execution of the project from conception to completion. Guiding the project requires the application of knowledge, skills, tools, and techniques to project activities to meet project requirements (Shenhar et al. (2007:5). The objectives of these activities are essentially to meet stakeholders’ needs and expectations (Burke 2002:3). The process further involves allocation, tracking, and utilisation of resources to achieve a particular objective within a specified period of time (Harvard Business Essentials 2004:xi). The nature of the processes involves working with human beings. Taylor (2006:19) observed that the ability to communicate effectively with other people is pivotal to effective project execution and meeting the set objectives. Communication is all the means applied to transfer information, emotions or thoughts between the people and the systems within which the project operation is undertaken (PMBOK
2004:354). It entails the exchange of information and data among persons using a common system of symbols, signs or behaviours. This information must be disseminated to the right person, in the right format and in the most effective way possible (Kerzner 2006:229).

Communication channels and formats must be clearly defined from the beginning to avoid any form of ambiguity of information or understanding of the essence of the process. Effective communication should be at the heart of all project management functions, project execution is done through people, and people need information for them to act responsibly. Consistency at delivering messages and tailoring the communication for the level and interest of the recipient is a necessary skill for effective communication management (Milosevic et al. 2007:167).

Schwalbe (2006:207) stated that 90 per cent of the project managers’ job is spent in communicating. According to (Phillips 2002:269-271), five key concerns in a project are:

- measurement and evaluation of data collected which has to be communicated promptly,
- data collected needs to be acted on immediately it becomes available,
- the communication must include or ensure the recipients understand the data or information given to them,
- the information should be properly constructed and effectively delivered, and different people, and
- different levels need the same information in formats relevant to their needs (Phillips, 2002:269-271).

There are a variety of tools and techniques that can be used to communicate the project activities, these include among other tools and techniques, automated software, checklists, forms and templates that assist in performing project management activities (Hill, 2004:22).

A communication plan is necessary to avoid delayed project completion, conflict within the project’s stakeholders, cost overruns, poor project quality and possible project failure (Frigeti et al. 2002:327). Young (2006:9) listed inadequate project
definition, lack of general information, poor scheduling and allocation of resources, resistance to change due to poor communication, lack of clarity of the scope, confused roles and responsibilities as problem areas in communication. The project communication plan should include protocols for meetings, agenda meetings, report back on work assignments, feedback formula and plan for all meetings and reportbacks and feedbacks for all meetings. Adequate easy to use and appropriate information and data storage facilities need to be put in place. Poor communication puts the project at risk, a good communication plan and management are essential for the success of the project.

5.13 PROJECT RISK MANAGEMENT
Project risk management encompasses risk identification, risk quantification, risk response development, and risk response control. Howard (2001) identified IT projects as more problematic than other projects. McGrew and Bilotta (2000:293-300) stated that this problem is common in the implementation of systems and solutions, including a variety of hardware and software products. Risk is any project-related event or managerial behaviour not known in advance yet potentially will affect negatively the execution of the project (Kutsch & Hall 2009:72-81). Derived from this definition, risk management is a systematic method used to identify, analyse and pre-empt possible negative occurrences that may impact on the project. According to Kutsch and Hall (2009:72-81) project risk management claims to enable project managers to effectively manage the risk and minimise the adverse effects on the project outcome. If this statement is true, given the high failure rate of projects in general, knowledge of risk management and assessment is important for effective project management. IT project managers have a problem in terms of cost justification and time constraints to the detriment of project risk management. Proper and timely risk identification and management offers opportunities for the project that were previously not considered at operational level (Ward & Chapman 2002:97-105). According to Gemineoich and Sauer (2007:29-38) in a reversal on the reports from the Standish Group, 67% (up from 35%) of projects are delivered close to budget, schedule and scope. The 33% failure rate is worrisome as the bulk of these projects are abandoned and money is lost. PMI recognises the potential of the risk to either adversely affect the project execution or provide hitherto unknown opportunities for
the enhancement of the value. Key risk management elements from different associations are shown below.

Table 5.5: Overview of main project risk management processes

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning</td>
<td>Risk management planning</td>
<td>Context</td>
<td>Focus</td>
</tr>
<tr>
<td>Identification</td>
<td>Risk identification</td>
<td>Risk identification</td>
<td>Define</td>
</tr>
<tr>
<td>Analysis</td>
<td>Risk analysis</td>
<td>Risk analysis</td>
<td>Identify</td>
</tr>
<tr>
<td>Response</td>
<td>Risk response planning</td>
<td>Risk treatment</td>
<td>Structure</td>
</tr>
<tr>
<td></td>
<td>Risk [monitoring] control</td>
<td></td>
<td>Estimate</td>
</tr>
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<td></td>
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<td>Evaluate</td>
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<td>Plan</td>
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<td>Ownership</td>
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<td></td>
<td></td>
<td></td>
<td>Manage</td>
</tr>
</tbody>
</table>

(Source: Adapted from Gaulke 2002)

All the associations in Table 5.5 above agree on the importance of risk management and the planning activity, but differ on phases. (Ben-David & Raz 2001:14-25). Risk management is classifiable into stages like, planning, identification, analysis and response. Firstly, a project manager can apply risk management planning to define what activities should be undertaken to approach project uncertainties. Secondly, risk identification allows project managers to single out uncertainties that may affect the project objectives. Thirdly, risk analysis helps the project manager to evaluate quantitatively the likely consequences of risk as well as the likelihood that the risk will take place. Fourthly, risk response (fire-fighting) helps the project manager to develop procedures and techniques to mitigate the defined risks and to keep track of the identified risks and provide risk-response tasks. In Table 5.6 lists some of the reasons provided by project managers that do not apply risk management.

Table 5.6 Reasons for not applying project risk management

137
<table>
<thead>
<tr>
<th>Reasons</th>
<th>Type of problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>We haven't got time left</td>
<td>Cost justification</td>
</tr>
<tr>
<td>No executive call for risk measurements</td>
<td>Cost justification</td>
</tr>
<tr>
<td>Company does not see the value in adding the additional cycles to a project</td>
<td>Cost justification</td>
</tr>
<tr>
<td>Top management did not think they needed it</td>
<td>Cost justification</td>
</tr>
<tr>
<td>Ignorance of the existence of such a thing</td>
<td>Cost justification</td>
</tr>
<tr>
<td>Too expensive decision made by pre-sales team</td>
<td>Cost justification</td>
</tr>
<tr>
<td>It was the project manager’s job to manage all risks, by himself, without help from others. It was what he was paid the bucks to do.</td>
<td>Cost justification</td>
</tr>
<tr>
<td>An initial risk analysis was done, project manager did not bother to follow it up</td>
<td>Cost justification</td>
</tr>
<tr>
<td>Too many different companies had ownership of different elements; and the risk was not rolled up to the highest level</td>
<td>Cost justification</td>
</tr>
<tr>
<td>A single risk-identification workshop was held early in the project before my arrival. There were no follow up meetings.</td>
<td>Cost justification</td>
</tr>
<tr>
<td>The reason why a formal project risk management process was not applied has to do with organisational culture. We are focused on getting things and not managing risk.</td>
<td>Cost justification</td>
</tr>
<tr>
<td>Not enough time; Accelerated implementation was key, not cost.</td>
<td>Cost justification</td>
</tr>
<tr>
<td>When the project was running, we did not have formal PM education in terms of the process and supporting areas.</td>
<td>Lack of expertise</td>
</tr>
<tr>
<td>Too many different companies had ownership of different elements</td>
<td>Ownership</td>
</tr>
<tr>
<td>Risk was the customer's court</td>
<td>Ownership</td>
</tr>
</tbody>
</table>

(Source: Adapted from Kutsch & Hall 2009:72-81)

The knowledge, ability and experience (the competencies) of the project manager determine the expected utility, responses and choices that will be taken by the manager. This is based on the weighted average of the utilities of all possible outcomes that flow from a particular decision (Borge 2001). Kahneman and Tversky (1979:263-291) posited that the expected utility theory (EUT) is generally accepted as a model for rational choice for taking risk decisions and provides critical assumptions that underline effective project risk management. The theory propagates unambiguous problem identification, perfect information about the variables, an exhaustive list of possible solutions, specified and quantifiable
objectives, the resources required, and rational, analytical decision makers with cognitive abilities (Ritchie & Marshall 1993:29).

5.14 PROJECT PROCUREMENT MANAGEMENT
Project Procurement Management comprises the procurement plan and policies, solicitation and solicitation planning, source selection, contract administration and contract close-out. Fourier (2009:626) stated that an effective procurement system requires well defined policies to ensure that all transactions are performed in the open, with a proper audit trail. According to Bovis (2007:11) the primary objective of an effective procurement policy is to promote efficiency and to ensure that the supplier offering best value for money is awarded the contract. The theory around such activity has been broadened to encompass transaction management, tendering, contract letting and contract management (Gershon 2004:5).

The South African government uses a targeted procurement policy to facilitate affirmative procurement meant to redress the skewed practices of the past (Tjiamogale, Manchidi & Hammond 2002:2). In the public sector, the process of procuring goods and services is designed primarily to apply public policy and ensure proper use of public funds with disadvantaged people in mind. The government is the single largest buyer of goods and services in the country. The management of procurement involves identifying the requirement, the buying process, managing the contract, and the end of requirement or disposal (Hall 2010:12).

Public procurement is the link between public requirements and private sector providers to satisfy the complex needs of a country’s citizens (Fourier 2009:1). It involves integrity, accountability, the national interest, effectiveness and efficiency (De Bruijn & Dickie 2006:79). In project management, procurement is a source of competitive advantage to maximise profits, and meet stipulated quality requirements within the budget. This area needs special management skills since resources are subject to abuse (Wittig 2002:5) Apart from being susceptible to misconduct and corruption it is important that good management, integrity and awareness be maintained in the procurement environment because of the strategic nature and impact on the success of the undertaking (Fourier 2009:626; Matechak 2009:5). In projects where the operation is limited by time, budget and specified technical requirements effective project procurement becomes indispensible. The design of
the precise features of the competitive bidding process can also have a significant influence on the efficiency of the outcome. Resource determination, allocation and management affects every aspect of the project, hence the critical strategic importance to meet scope, budget, time and quality. Most conflicts in projects relate directly to resource allocation due to project interdependency impacting on labour, material resources and the process of prioritizing (Gray & Larson 2008:30).

5.15 PROJECT INTEGRATION MANAGEMENT

The manager is the single point of responsibility coordinating all these critical project knowledge areas, such as project integration, re-directing of project resources, processes and creation of a unified culture to focus on the project objectives (Barki, Rivard & Talbot 2001). Project integration management is required to ensure that various elements of the project are properly coordinated towards common objectives (Andres & Zmud 2001). This involves coordinating all project activities (initiation, planning, execution and closure) and systems (costs, schedules, quality, staffing, etc.) to ensure maximum benefits for both the project and the organisation. Figure 5.2 illustrates the relationships and the interdependence of all the knowledge areas discussed above.

**Figure 5.2: Interface between knowledge areas**

- **Scope management**
  - Initiation, scope planning, definition, verification and change control

- **Time management**
  - Activity definition, activity sequencing, scheduling, time estimation and time control

- **Cost management**
  - Cost estimation, planning, budgeting management, and controlling

- **Quality management**
  - TQM planning, assurance, customer liaison, and control

- **HR Management**
  - Staff recruitment and selection, planning of HRM allocation, training and development, team building and maintenance

- **Communication management**
  - Planning, info distribution, project progress, coordination between operations and other stakeholders

- **Risk management**
  - Identification, analysis, estimation, response planning, monitoring and control

- **Procurement management**
  - Planning, solicitation, supplier selection, contract management, and closeout
At the centre of all these activities will be the planning based on the project brief and scope with clearly defined deliverables. Planning is continuous throughout all the phases of the project. The nine different knowledge areas suggested by the PMI and the 40 areas by the APM are all essential components of effective project management. Project integration management, the ninth knowledge area is the hub from which all the operations flow. It should be understood that all these activities are taking place in one project, either simultaneously or one after another. Intermingled with the knowledge areas above are the general management knowledge areas expected of any manager; these are planning, organising, budgeting and controlling. To this should be added interpersonal skills, thinking skills, judgement, integrity, initiative, self-confidence and organisational awareness.

5.16 LEADERSHIP
The bodies of knowledge have reached levels of maturity that require continuing assessment of their contributions to the evolving project leadership concept (Cleland 1995:83-88). New team-based leadership strategies have been added to the body of knowledge to effect project management. This is compounded by the projectification of the industry. New technologies have enabled easier and more effective methods of communication thereby changing the method of interaction between leader and project teams (Pinto 2002:22-37). Consequent to the communication technologies virtual project teams have altered the leader-follower relationship and interaction processes. Competencies are ubiquitous (Bolden & Gosling 2006:147-163) and have been unsurprisingly incorporated into the leadership domain thereby affecting both leadership and leadership development in project management. Carroll, Levy and Richmond (2008:363-379) stated that effective project leadership is not mechanistic because of the presence of competencies, but is rather subtle, emotional and relational, loaded with soft skills. These requirements over and above what a manager can do should be understood as knowledge areas which give a leader an edge over a manager (Chia 2004:29-34).
Research conducted on projects in financial services, community and professional research in science concluded that habits, consciousness and awareness were critical elements in the development of the knowledge areas on leadership (Alvesson & Karreman 2007:1270). Seven areas identified as critical to the knowledge area development are habits, process, consciousness, awareness, control, everydayness and identity. Whittington (2003:117) stated that leadership was ready to throw off the epistemological straightjacket of modernism that has valued ‘scientific detachment’ over practical engagement of leadership and its evolving needs. Studying leadership from a practice perspective will assist in exploring the synergies that may be derived from complementary efforts when both practitioners and academics work together. Wilson and Jarzabkowski (2004:15) suggested a serious disjuncture between project management industry practice and the academic activities in this field. A coming together of these would enhance the development of the requisite leadership knowledge for the project management bodies of knowledge.

5.17 ACTION MANAGEMENT

The iron triangle of project management is a part of the comprehensive determinants of success or failure (Burke 2010:265). The factors that influence this result as shown in Figure 5.3 below.

Figure 5.3: Summary of factors influencing project failure
The main areas of concern in project execution are late delivery, overrun costs or under-budgeting, under performance, poor quality and deliverables that fail to meet customer expectations. As shown in the diagram above, there are numerous factors that build up to the eventual failure of a project, starting from the conception of the idea to the handover phase of the project. Project failure is therefore a process, and the process has many possible causes, this increases the risk of failure. A proactive approach to the project execution could avert possible failure through effective project risk management. Risk management; the identification, assessment, and prioritization of possible occurrences is one of the knowledge areas as defined by PMBOK, and these unforeseen events or activities that impact on project processes. Risks can be assessed by use of two factors; impact and probability. A probability of 1 is an indication that the incident will happen and a zero probability means the incident or activity will not occur. Figure 5.4 is a summary of factors that affect project management success.

Figure 5.4. Summary of factors influencing project success

(Source: Adapted from Burke 2010:265)
Project success is a process with many components which when put together correctly, results in a successful project undertaking. Based on the previous discussion, for the purposes of this study, project success is when the project undertaking accomplishes the objectives of the project in its entirety, meeting the scope, time, cost and quality stipulations to the satisfaction of the customer. And project management success is when the project team and the internal stakeholders are pleased with the results and the organisation makes a profit.

The life cycle of a project has its own environment and elements around it that influence the project execution process. Two types of environmental factors are identified in the study, namely socio-legal factors and stakeholder relationships. Project leadership may not be effective and efficient without due consideration to these factors. The socio-legal factors are represented in Figure 4 below. These relate to institutions or social, legal and economic factors of the environment in which the project is implemented.

**Figure 5.5: Socio-legal factors impacting project execution**

(Source: Adapted from Gray & Larson, 2008:490)
The economic factors relate to the level of development of the country, the condition or economic health of the country, education level and the availability of local suppliers for the project. The legal and political factors relate to local laws and regulations where the project takes place, such as labour laws, strength of labour unions, environmentalist movements, government interference or support, pollution laws and many other related regulations (Gray & Larson, 2008:489). The security element relates to pilferage or thefts from outside, safety and the by-regulations (Gray & Larson, 2008:489). Geography relates to where the project is implemented in relation to project requirements like labour, the supply of materials and community expectations (Schwalbe, 2006:29).

The culture of the people is of critical importance as it impacts on their work ethics and this relates to their performance and expectations. The culture will need to be considered together with the predominant religion and beliefs where the project is to be implemented (Earley and Mosakowski, 2000:26-49). Infrastructure relates to the ability or the availability of other factors that might assist in the execution of the project. These may include technology like telecommunications, transport infrastructure, electricity and such elements (Thamhain, 2004:533-544).

Each one of these factors affect project implementation and influence the decision making process in the internal project management process. The effectiveness of the project leader is judged based on how a person relates and balances these challenges and seek to make the best internally in the presence of an authority-gap (Cooke-Davis, 2002:185-190).

5.18 CONCLUSION

The project management process comprises interrelated activities with a beginning and an ending, with differing requirements at certain stages of the process. Central to all these processes will be the need to plan continuously to manage the change process and keep to the budget, the time and the quality as prescribed. The knowledge areas are meant to enable the project leader to facilitate the implementation process effectively. The extent of the requirement of the application of these knowledge areas will depend on the complexity of the project, the resources required, the duration and the relevant tools and techniques to be used. It is critical to understand that the processes of the project are characterised by inputs and
outputs. The study of the project knowledge areas is the process of understanding how project knowledge facilitates the process of successful project execution and end product usability.
CHAPTER SIX

TRADITIONAL AND CONTEMPORARY CHALLENGES IN THE MANAGEMENT OF PROJECTS

6.1 INTRODUCTION

Flyvbjerg, Garbuio and Lovallo (2009:170-193) stated that only a fraction of projects undertaken are completed successfully, indicating a high project failure rate. The failure rate is much higher in software development with records of up to 31.1% of all corporate software development projects cancelled before they are completed (Linberg, 1999:177-192): and 52.7% of those completed costing 189% of their original estimates. Ironically, the industry at large is turning to the use of projects as a more viable way of doing business, generally known as management by projects (Gray & Larson, 2008:5). The growth rate of project management as a subject is seen in the increase of enrolment in the institutions of higher learning across the world.

A study of 97 failed projects identified managerial factors as directly responsible for the failure rate (Pinto & Mantel, 1990:269-276). It is understood that project failure is nebulous given the absence of a universal definition of project success (Belassi & Tukel, 1996:141-151). The absence of an absolute definition is further complicated by the difficulty of carrying out empirical studies on the causes of project failure; most conclusions on project failure are anecdotal. It is therefore difficult to generalise the causes of project failure and determine a generic cause for the failure of projects. It is therefore important to highlight that the causes of failure will also depend on the type of project, complexity and leadership. McDonough III (1993:241-250) asserted that the age and experience of a project manager would determine the outcome of a project, implying therefore that the challenge for the project manager would be to be of the appropriate age, experience and possibly education.

It is appropriate at this point to differentiate between project success and project management success. Project success is measured against the overall project objectives, whereas project management is measured against the traditional performance based on costs, quality, time and possibly the absence of injuries. Another distinction is between the measures against which the success or failure of
the business will be judged, and the inputs to management that may lead to failure and or success. In this regard, Cooke-Davies (2002:185-190) posited that though systems, tools and techniques have been consistently blamed or praised for the failures and successes of project management, it is clear that it is people and not systems that deliver projects. This means therefore that the failure or success of a project has a human element to it, and all the challenges found in project management are directly or indirectly linked to the ‘human element’ either in the form of the leader or the subordinates in the operation. Since the 1950s most academic work in the study of project management focused on tools, techniques and other systems as critical for the success of projects, but success still means different things to different people (Belassi & Tukel, 1996:141-151). Instead of ‘individualising’ the factors responsible for project success or failure, it should be understood that different factors acting simultaneously or at different stages of the life cycle of a project have different effects that are causal for either success or failure. Challenges in project management can be classified into strategic (e.g. top management support and project scheduling) and tactical (e.g. client consultation, personnel selection and training) as critical challenges common in project management. The use of these different classes of challenges depends on numerous other factors like stages in the life cycle of a project, the type of project, the source of the challenges (external or internal): and the iron triangle of the project.

6.2 SUCCESS AND FAILURE FACTORS
Belassi and Tukel (1966:141-151) constructed a comprehensive model which illustrates the different factors that impact on the success or failure of a project. These factors constitute the sources of challenges the project manager contends with during project execution. Clearly, there is no single cause for failure or success of a project as the execution is extensively integrated with causal relationships. The suggested framework below, which is not exhaustive, groups together critical factors and their interrelationships and the ensuing challenges caused by such factors. The generic external environmental factors of businesses are the basis on which the framework is modelled: these are the political, economic, social, and technological environments (PEST). The internal factors are grouped as project manager factors, project team factors, project related factors, and organisational factors (Figure 6.1).
6.2.1 Project manager factors

The project manager is a critical factor in the effective implementation of the project, and brings to the project challenges that need consideration. The project practitioner’s ability to delegate, to coordinate, to negotiate, and to lead in general has an impact on the way the project will be implemented. The project managers’ relationship with the followers and understanding of how they feel and want to be treated may add to the effectiveness of the team. The leadership styles, the ability to
influence other people to change their behaviour and work towards the achievement of the goals is critical for the success of any enterprise (Bass & Bass, 2008:102). Because project management is the application of knowledge, skills, tools, and techniques of project activities, the project manager becomes a critical requirement to coordinate and oversee the integration of all these aspects of project execution (Pearlson & Saunders, 2006:132). Contrary to the above, Turner and Muller (2005:48-61) in their literature review on project success factors did not find any such supporting evidence about the importance of a project manager as a success factor in projects. General Management literature however, extensively covers the importance of good leadership as a success factor for company performance. The incompetency of a project leader is a serious challenge to effective project leadership and execution.

### 6.2.2 Project team factors

Teamwork is crucial for project performance as long as the management will understand the essence of such a tool for project performance. Establishing and maintaining an environment conducive to promoting full use of the professional needs of team members is an on-going challenge for management (Thamhain, 2004:35-46). The challenge arises from the need for engaging in multiple activities spanning numerous organisational lines which involve a broad spectrum of personnel, support groups, subcontractors, vendors and other interested stakeholders. The diversity of the people involved calls for special skills and creates specific problems that may not be easy for a project manager to understand, control and manage within the limited time given to complete the project. Zhang, Keil, Rai and Mann (2003:115-129.) add that in the field of information technology the team compositions are characterised by, and the situation exacerbated by, the high speed, high change and high levels of uncertainties. The concept of teamwork has always been part of human operations, but as a business concept in this heavily technology-based and industrialised set-up the profit-based team concept is considered crucial for project success (Williams, 2002). The complexities of the team are therefore extensive, and the diversity caused by culture, discipline, rights, the political and economic environments presents challenges to management. Increasingly the use of teams with expanded roles and limitless boundaries are indicative of an ever-
learning organisational structure with openness and self-directedness (Senge & Carstedt, 2001:24-38).

6.2.3 Project related factors

Project characteristics are critical success factors and essential dimensions of the performance of a project. Some of the characteristics of the project are the duration and urgency of the project, the size and value of the project together with the uniqueness of the project activities, the density of the project network (the ratio of total number of precedence relationships to the total number of activities), project life cycle, and the urgency of the project outcome (Sauer, Gemino & Reich, 2007:79-84). Tukel and Rom (1995) posited that projects with 100 activities or more almost certainly exceed their set project time and have overrun costs posing a serious challenge to effective project execution. The urgency of the project has constantly become a critical challenge as many project deliverables are compromised to meet the deadlines for the project to be put into use (Park, Im & Keil, 2008:409-431).

6.2.4 Organisational factors

Organisational factors include among others top management support, the internal resources (human and material), the culture and politics of the organisation (given the task at hand), as well as the relationship between the functional managers, the top management and the project manager, taking into account the levels of interest and importance of the project (Belout & Gauvreau, 2004:1-11). The level of support from the functional managers is largely a reflection of how top management view and support the project. In a matrix organisation or pure project forms, acquiring resources may be cumbersome and require coalition, negotiation skills and certain amounts of positional powers to facilitate and implement the strategies effectively (Swink, 2000:208-220). Projects are change instruments and the greatest challenge faced by management is trying to change the status quo by using status quo. The project manager together with senior management needs a full understanding of the operational dynamics at the levels where change is required. Until the culture and the vision has been changed at that level, change management becomes a nightmare. Kerzner (2009:224) identified organisational factors that affect effective project leadership as critical in the operation of a project; these are personality, past experience, organisational climate, characteristics of the followers, the expectations
of the peers, the requirements of the task in question, and the expectations of senior management. Figure 6.2 below illustrates the relationships that lead to effective leadership.

**Figure 6.2: Factors that influence effective leadership**

(Source: Adapted from Kerzner, 2009:224)

The environment in the organisation itself inclusive of the political activities, procedures policies and practices creates a climate that may breed challenges or lessen challenges for the project manager. The type of challenges will consequently impact on the performance of the project manager, calling for his experience and personality to meet the challenges. The ability to withstand certain challenges is a function of the personality of the project leader, which is informed by many things, amongst which can be the level of education, the knowledge at hand or required, the emotional intelligence and maturity, the desperation and economic conditions of the leader and the presence or absence of alternatives.

**6.2.5 Project Managers’ performance on the job**

The first challenge encountered by the project manager which will determine his effectiveness will inevitably be personality issues. A strategy or management style is appropriate only in a particular set of circumstances (Burns 2008:1-10). In addition the project manager’s challenge is to fit into this climate and be able to perform in the existing circumstances. Muchinsky and Monahan (1987:268-277) submitted that the concept of person-environment congruence is grounded in the *interactionist* theory of behaviour. The theory asserts that neither personal characteristics nor situational
constraints alone determine the variance in behavioural and attitudinal variables. Understanding behaviour therefore entails making a detailed assessment of personal variables and situational variables whereby mapping the conditions under which the two sets of variables, taken jointly, result in selected outcomes. Therefore, person-environment congruence, refers to the degree of fit or match between the two sets of variables in producing significant outcomes. Gordon (2002: 8-9) posited that effective managers are team players responsible for working with and through others to reach organisational objectives. Consequently the project manager has to adjust to the expectations of the team, a challenge often too difficult for most leaders. The challenge is for the project manager to fit into the organisational structure and culture and still produce the desired product as per mandate.

The manager has to understand the organisation in its totality and be able to influence aspects such as tasks, technology, structure and the people involved. (Bargrain, Cunningham, Potgieter & Viedge, 2010:8). By implication, good matches between firm and employees are imperatives for a conducive climate within which performance can be enhanced. Such organisational environments providing a perfect fit for the project manager and the organisation are rare; the manager needs to change to fit the environment, or change the environment if the manager has the power to. By implication therefore the organisational culture and the values and beliefs have a strong impact on the style of project leadership together with the type of competencies that will be required for effective leadership. The literature alluded to above from Burns (2008:1-10), Muchinsky and Monahan (1987:268-277) and Gordon (2002: 8-9) was used to construct an ideal model for effective project management. Table 6.1 illustrates a model for good project manager performance.

| Table 6.1: Project manager performance model |
Critical performance areas

| Communication       | - give prompt feedback to top management  
|                    | - communicate expectations to workmates  
|                    | - communicate roles and responsibilities  
| Political alliances | - identify key personnel to depend on  
|                    | - develop alliances at all levels of project  
|                    | - understand importance of coalitions  
| Soft skills        | - interpersonal skills must be developed  
|                    | - show concern for fellow workers  
|                    | - culturally sensitive and accommodating  
| Emotional intelligence | - never lose focus of goals and objectives  
|                      | - understand people’s emotions and behaviour  
|                      | - manage your own emotions correctly  
| Stakeholder knowledge | - identify and critically classify stakeholders  
|                      | - identify dependencies and pre-empt problems  
|                      | - keep good relations with all stakeholders  
| Tools for the trade | - use tools and technologies for processes  
|                      | - familiarise oneself with all applications  

(Source: Construct from summary of factors from literature review)

The project manager in the matrix system has serious limitations pertaining to critical issues like recruitment and selection, compensation and rewards and decisions on work design and tools available for use. The project practitioner needs extra soft skills to be able to manoeuvre around the conditions and still meet the stakeholders’ expectations. Skulmoski, Dhabi and Hartman (2009:61-80) identified key categories of soft competencies as: personal attributes (e.g. eye for details), communication (e.g. effective questioning), leadership (e.g. create an effective project environment), negotiations (e.g. consensus building), professionalism (e.g. lifelong learning), social skills (e.g. charisma), and project management competencies (e.g. manage expectations).

6.3 PRELIMINARY SOURCES OF CHALLENGES
Elonen and Artto (2003: 395-402) posited that projects where the organisation uses management-by-projects, with constantly changing mix of large and small projects present new challenges to management. They state that adherence to time, scope, and cost requirements in single projects may provide the organisation with increased income. The critical challenges identified are; resource planning, prioritisation and monitoring. Together with this should be the introduction of the project portfolio which will assist in identifying the right projects and create a link between the projects and the organisations strategy. Figure 6.3 below illustrates the preliminary problem areas responsible for the challenges that may lead to project failure.

Figure 6.3: Prioritised graph of preliminary problem areas

![Graph of preliminary problem areas](image)

(Source: Elonen & Artto, 2003:395-402)

6.3.1 Inadequate definition, planning, and management of single projects.
The project scope has to be clearly defined and understood by all parties concerned before the planning commences. Too often the scope definition is not clear and this creates planning problems. Planning involves the setting of goals, choosing the strategies and tactics, allocation of resources to achieve set objectives (Hellriegel, Jackson & Slocum, 1999:218). Planning is the road map that tells the project manager where the project is and where it is going to and how. Poor planning creates serious challenges for the practitioner to manage the resources well and meet schedules as expected.

6.3.2 Resource shortage and allocating resources improperly.
Resource allocation is the most common cause of conflict in projects. The project manager’s problem is allocating the resources equitably amongst the different task leaders without delaying the project. Many methods have been used to provide enough of this scarce item in projects, some of the methods used are resource levelling, resource smoothing, and sometimes with the aid of the Enterprise Resource Planning (ERP) package. The latter tool has its own shortcomings as it is not universally applicable. Some of the human resource issues stem from the use of one expert in too many projects, thereby causing both divided attention and unavailability when needed by the project manager.

6.3.3 Lacking commitment and unclear responsibilities
Too often project objectives and project borders are not clearly defined. Project managers always have serious authority gap problems stemming from the matrix structure. In these cases it is not clear who has the stop and go decision powers for most of the activities. Because the team members belong to a functional department and are seconded to the project, their loyalty and commitment is inevitably divided.

6.3.4 Inadequate portfolio level activities
There are no clearly defined priorities and too many projects from the same portfolio working as silos, uncoordinated and un-integrated. Even though they source their resources from one pool. In such cases operational work is given priority over projects, which is a frustration to the project practitioner who has to deliver the product on time, according to specifications and within budget.

6.3.5 Inadequate flow of information
Information is a critical component of effective management as it allows for effective decision making. Too often there is no clearly defined communication strategy to enable the right people to get relevant information at the earliest possible times, and in the most ideal format for their use. This may be as a result of portfolio level activities which are not clearly defined, or purely because there is no adequate communication strategy.

6.3.6 Inadequate strategic planning
Inadequate strategic planning comprises the analysis of external and internal
environments, identifying general strategies to be followed on the basis of which resource allocation will be made.

6.3.7 Matrix organisation – authority from functional managers
One serious limitation for the project manager is the absence of authority over his subordinates and team members because they are seconded to him from other departments. It is consequently difficult for him when there is a conflict, he can neither hire nor fire them as they permanently report to departmental or functional managers. Management-by-projects is increasing in industry, and governments are running large infrastructure development programs. As a result there is a new trend which needs attention as it poses serious challenges to effective project management. It is important to briefly review some factors as reported by Elonen and Artto (2003) as shown in Table 6.2.

Table 6.2: Summary of challenges in managing multi-project environments

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>EFFECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project level activities</td>
<td>Improper implementation of the project phase, infrequent project progress monitoring, too long projects</td>
</tr>
<tr>
<td>Management of project oriented business</td>
<td>Project work given second priority, no defined owner, business or personnel strategy for portfolio, rapidly recurring changes in roles and responsibilities or organisational structure. Many bodies entitled to start a project</td>
</tr>
<tr>
<td>Commitment roles and responsibilities</td>
<td>Unclear roles and responsibilities, no clear distinction between decision makers, no open support of project by management, roles and responsibilities not clear at project level,</td>
</tr>
<tr>
<td>Portfolio level activities</td>
<td>Overlapping non-integrated projects, no clear distinction between roles of portfolios, Resources, value and priority for the project, no feedback at project level by senior management.</td>
</tr>
<tr>
<td>Information management</td>
<td>No information on project to project manager, no defined flow of information between portfolios, no common project-database</td>
</tr>
<tr>
<td>Resources, competencies and methods</td>
<td>Inadequate evaluation systems, shortage of human resources and competencies at project level, too many people involved in steering committees.</td>
</tr>
</tbody>
</table>

(Source: Adopted from Elonen & Artto, 2003:395-402)

6.4 UNREALISTIC DEADLINES AND DELAYS IN PROJECT COMPLETION
Completing a project within the time frame, budget and specified quality is an obvious indicator of efficiency on the part of the project manager. Chan and Kumaraswaamy (1997: 55-63) identified and evaluated 83 potential challenges and found five principal factors causing operational challenges to project execution. These were classified as: poor risk management and supervision, unforeseen site conditions, slow decision making, client-initiated and work variations. Assaf and Al-Hejji (2005:349-357) in an extensive study on challenges that cause delays in construction projects identified 73 such challenges. They defined delays as normal occurrences in engineering type projects which experience time overruns beyond completion date specified in the contract or beyond the delivery date as agreed on. Table 6.3 below is a summary of Assaf and Al-Hejji's findings, the challenges have been classified under 9 causal factors.

Table 6.3: Sources and types of challenges common in projects

<table>
<thead>
<tr>
<th>FACTORS</th>
<th>TYPES OF CHALLENGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project</td>
<td>Too short contract duration, legal disputes over scope, etc, unclearly defined scope, ineffective delay penalties, type of project, size of project, complexity of project and type of contract.</td>
</tr>
<tr>
<td>Owner</td>
<td>Delay in progress payment, delays in showing the sites, change orders, delayed design approvals, delay in supply of documents or materials, poor communication, slow decision making process, disagreement with owner, suspension or termination of work.</td>
</tr>
<tr>
<td>Contractor</td>
<td>Financing difficulties, conflicts with sub-contractors, work error and rework, conflicts with owner, poor site supervision by contractor, poor communication with other stakeholders, poor planning, poor work scheduling, not well skilled technical staff, changing of sub-contractors by contractor.</td>
</tr>
<tr>
<td>Consultant</td>
<td>Delays in performing inspection, delay in approving changes to scope, inflexibility, poor coordination with other stakeholders, delays in submitting documents, conflicts with engineers, inexperienced consultants.</td>
</tr>
<tr>
<td>Design</td>
<td>Discrepancies in design documents, unclear drawings, complexity of the designs, insufficient design information, inadequate experience, disagreements with engineers.</td>
</tr>
<tr>
<td>Materials</td>
<td>Shortage of materials, inefficient procurement strategy, damaged stock, confusion on technical requirements for supplies, materials that do not meet the customer specifications, poor quality material in</td>
</tr>
</tbody>
</table>
market, and escalating material prices.

**Equipment**
Breakdown of equipment, obsolete equipment, equipment not relevant to needs of the project, unskilled machine operators, lack of efficient machinery, and no finance for modern highly technical equipment.

**Labours**
Little skilled labour available, low labour productivities, personnel conflicts, no time to train labour to meet requirements, labour union demands, affirmative action and BBEE considerations, gender equity in the work place.

**External**
Delays in obtaining required permits from authorities, acceptance of project by community, physical conditions on the site, problem with facilities at site.

Source: Adapted from Assaf & Al-Hejji (2006:349-357)

Projects that entail any change affecting activities are based on estimates, the assumption of which is ‘all things being constant.’ Unrealistic deadlines are made with the end and not the operation in mind. Deadlines should be made with space for possible delays in the supply of materials, lack of resources, discrepancies between design and construction (Faridi & El-Sayegh, 2006,1167-1176) as well as a lack of proper management practices, variation orders, communication lapses, cultural issues, absenteeism from work and labour stay-aways (Abdul-Rahman 2006:125-133). The time estimates should be made with possibility delays, admittedly, certain projects are governed by time-lines, like national elections (Kaming, Olomolaiye, Holt & Harris, 1997:83-94).

**6.5 POOR SCOPE DEFINITION AND RESULTANT CHANGES**
The scope is the total amount of work to be done, the deliverable in its complete form as expected by the customer. The scope needs to be clearly defined and understood in the same way by both the supplier and the customer to avoid conflicts and changes (Gray & Larson, 2008:92). Clearly there will always be changes in the scope during the process of a project. This is probably due to change of mind by the customer, in which case the customer pays the extra cost and not as a result of a misunderstanding. To this end, it is important therefore that the scope be defined. A clearly defined project scope checklist will identify clearly the project objective, deliverables, milestones, technical requirements, limits and exclusions, and the reviews with the customer (Burke, 2007:82). The challenge with poor scope
definition is that work may have to be redone, the costs will inevitably increase and more time may be needed to correct what could have been avoided.

6.6 DEPENDENCIES AS CHALLENGES

The project manager needs to know whose cooperation will be needed, whose approval is required to carry on with work, and whose opposition may disrupt project implementation (Gray & Larson, 2008:323). Relationships are a critical element of a good working environment for a project manager, and good political connections are indispensible. Elias, Cavana and Jackson (2002:301-310) suggested the concept of stakeholder dynamics and asserted that their status and importance changes with the passage of time or in tandem with the different stages of the life cycle of a project.

It is important that the project manager identifies correctly the different stakeholders and the type of interests they have in the project to avoid surprises. Some projects are interrelated to other projects or activities outside the control of the project leader; the project therefore depends on the delivery from sources external to the project in question. Examples of such external sources may be consultants who have special services to provide during the execution of the project, they may not be under the same pressure to complete the project. Because there are different types of stakeholders with different, and too often unrelated interests, the project manager needs to understand these differences. The researcher is constructing a conceptual model of the different types of stakeholders as known from practical experience and literature available. A typology of stakeholders on whom the project depends is illustrated in Figure 6.4 below.

Figure 6.4: Typology of generic project dependencies for the project manager
Mapping of dependencies enables the project manager to pre-empt possible risks and challenges that would otherwise cause problems. Too often project managers do not identify strategic dependencies and alliances in time, the project manager must understand stakeholders' interests. Elias et al. (2002:301-310) posited that stakeholder attitudes and the salience of the stakeholders change with time and the project manager needs to have full knowledge of all of this.

6.7 MANAGEMENT OF CHANGE

One element of project management is the management of change, the production of new structures, products, new working systems, scope change in the form of design or additions, implementation of contingency plans or improvements. The change processes and challenges are shown in Figure 6.4 below.

Table 6.4: Challenges encountered by project manager when effecting change in the project
Table 6.4 above illustrates the difficulties that the contemporary manager will encounter to effect change in the project. In the South African context, some of the changes will relate to implementation of Affirmative Action (AA) and Employment Equity (EE) programmes. There is the likelihood of significant resistance and the
possible assumption that AA or EE candidates bring about the lowering of standards. Such beliefs and assumptions may impact negatively on the workforce; the manager therefore needs to provide strategic vision and direction.

6.8 INSUFFICIENT TEAM SKILLS

Industry captains constantly talk of critical shortages of skilled personnel, if that be true, then the project manager inevitably has challenges obtaining the required skills. In the matrix, team members for projects are assigned based on their availability, and not as determined by the project manager. The quality of the knowledge within a team is an indispensible necessity for the project manager (Yoo, Vonderembse & Ragu-Nathan, 2011:329-343). Any project manager without the requisite knowledge in the team is challenged and may need to outsource, depending on both the urgency and the complexity of the project concerned. In traditional project or matrix structures interdisciplinary teams are charged with the responsibility to execute a project, thereby cutting costs of hiring extra person-power. Such teams may be rich with knowledge and expertise, but too often difficult for the manager to bring the expertise from different disciplines under his control.

The more technical and complex the project is, the higher the chances for the team to leverage unique insights and probably effectively bring the project to success (Tiwana & McLean, 2005:13-43). Functional diversity may be fortuitous toward the achievement of set goals as determined by the requirements of the project. However, different members may perceive issues differently causing personality clashes too difficult for the project manager to handle (He, Butler & King, 2007:261-292). The higher the technical expertise required for a project, the less the control the project manager will have over people seconded from different departments and disciplines. Where there are no skilled team members, the project manager has the serious task of trying to get work done efficiently. Without the correct knowledge in the team, the challenge for the project manager is that there will be constant task re-does, delayed projects, conflicts with the customer over quality, all of which will be blamed on the project manager. It is necessary that all the core skills needed to accomplish the expected task be identified at the planning stages, in many instances project managers are brought to the project after all the decisions have been taken. Their function becomes merely undertaking with direct influence from senior management and thereby complicating the work of the project manager.
6.9 CHALLENGES IN MANAGING DIVERSE TEAMS

The traditional project workforce structure in a matrix organisation comprises the project manager as the head of the team and project. Experts in different aspects of the project will be part of the team, responsible for those specialised aspects as per project requirement. Rickards and Moger (2000:273-283) contested the idea of the importance and indispensability of the heterogeneity of a team as leading to effectiveness. They considered the assertion to be prescriptive and theoretical. The assumption of positive benefits from team diversity ignores too many underlying and unresolved issues in the relationships. The contingency effects of the coming together of specialists from different departments, professions and culture under a powerless project manager may be counterproductive. In a construction project, for instance, the electrical engineer, the architect, the quantity surveyor, the civil engineer, and the building inspector may constitute the team. These team leaders have their own labour force reporting to them, and may not be directly accountable to the project manager. Too often they are seconded to the project as a team from a departmental head. Horwitz and Horwitz (2007:987-1015) observed that while team diversity is potentially a synergy source for effective project execution, in practice the diverse nature of the teams causes unique challenges resulting in suboptimal performance.

The same ‘idiosyncratic expertise and experience’ meant to positively affect project execution, brings with it personality clashes, tension, coordination and conflict that may affect the project adversely. The heterogeneous nature of the team may cause dysfunctional cooperation and exacerbate for the project manager’s problem. Managing a project team requires extra unique approaches which are not common in traditional and routine management operations.

6.10 AFFIRMATIVE ACTION

Affirmative action (AA) refers to specific steps that are taken to promote equal opportunity for all employees and redress the discrimination of the past which brought about great imbalances in the workplace (Swanepoel, Erasmus, van Wyk & Schenk, 2000:155). The challenge for the organisation and specifically the project
managers who have the power to appoint, is to address the imbalances of the past. Firstly; even if they do not have power, they will work with a despondent workforce which may feel treated badly as they have no prospects of rising. Secondly the challenge for the project manager may be the manager’s racial grouping and possible attitude towards those who are different, thereby causing operational issues to become personalised race issues. The employment statistics of South Africa shows significant skews in favour of whites as shown in Table 6.5.

Table 6.5 Employment by occupational level, race and gender

<table>
<thead>
<tr>
<th>Occupational level</th>
<th>Black</th>
<th>White</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top management</td>
<td>13</td>
<td>87</td>
<td>87</td>
<td>13</td>
</tr>
<tr>
<td>Senior management</td>
<td>19</td>
<td>81</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>Professionally qualified / experienced specialists; middle management</td>
<td>44</td>
<td>56</td>
<td>62</td>
<td>38</td>
</tr>
<tr>
<td>Skilled technical, junior management</td>
<td>2</td>
<td>18</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>Semi-skilled</td>
<td>82</td>
<td>18</td>
<td>61</td>
<td>39</td>
</tr>
<tr>
<td>Unskilled</td>
<td>98</td>
<td>2</td>
<td>71</td>
<td>29</td>
</tr>
<tr>
<td>Non-permanent employee profile</td>
<td>83</td>
<td>17</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

(Source: Department of Labour 1999-2001)

The project manager may not be directly involved in the selection of employees or in rewarding good performance for all project participants, but the manager will certainly be affected by the underperformance emanating from the despondent AA candidates who are not represented in the management structures. A workforce with grievances is easily ‘unionised.’ The project manager, like any other manager, cannot stop any form of legal union activities. Union activities will disrupt operations and cause delays on completion of the project, which may result in profit loss, cost and time overruns. This is a challenge beyond the control of the project leader.

6.11 DIVERSITY IN THE PROJECT WORKFORCE
Smit, Cronje, Brevis and Vrba (2007:240) defined diversity as a 'mosaic of people who bring a variety of backgrounds, styles, perspectives, values and beliefs as assets to the groups and organisations with which they interact.' The project manager does not have much choice but to abide by the stipulations of the Employment Equity Act No 55 of 1998 to remove discrimination in the workplace. The changing demographics of the South African labour force necessitates a need for change in management style to accommodate the different cultural and belief structures in the workplace. The complex dimensions of diversity are presented in Figure 6.5.

**Figure 6.5: Dimensions of diversity in the workplace**

![Image of Figure 6.5: Dimensions of diversity in the workplace](source)

Diversity of the workforce compels the project manager to change leadership and management styles to respond to the challenge of diverse groups, opinions and approaches to doing certain things. Inevitably challenges will be prejudices, ethnocentrism, racial and gender discrimination, barriers to effective communication, stereotyping, language differences, low team cohesion, mistrust and tension amongst the workforce followed by a high labour turnover. The disparities in racial
distribution of positions as is current in the South African work place, requires extraordinary leadership skills from the project manager. The manager has to lead the project workforce under such conditions.

The imbalances brought to the workplace by these diverse groups become the concern of the project manager in that the manager will lead people who are not motivated. The aspirations from the disadvantaged groups seem too distant to reach, and the aspirants will look for any opportunity to move to other prospects. Besides the problems with diversity, the labour turn over in projects, specifically contract based employees, is extremely high towards the completion of the project. The hygiene factors as specified in Hertzberg’s two factor motivation model (Figure 6.6) are critical elements in the effectiveness of a project manager where organisational policy may not be seen to be working towards meeting the expectations of the subordinates.

Table 6.6: Herzberg’s two factor motivation model

<table>
<thead>
<tr>
<th>Satisfied</th>
<th>MOTIVATOR FACTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Areas of satisfaction</td>
</tr>
<tr>
<td></td>
<td>Achievement</td>
</tr>
<tr>
<td></td>
<td>Recognition</td>
</tr>
<tr>
<td></td>
<td>Work itself</td>
</tr>
<tr>
<td></td>
<td>Responsibility</td>
</tr>
<tr>
<td>Not satisfied</td>
<td>Advancement</td>
</tr>
<tr>
<td>Not dissatisfied</td>
<td></td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>HYGIENE FACTORS</td>
</tr>
<tr>
<td></td>
<td>Areas of dissatisfaction</td>
</tr>
<tr>
<td></td>
<td>Organisation policy</td>
</tr>
<tr>
<td></td>
<td>Supervision</td>
</tr>
<tr>
<td></td>
<td>Salary</td>
</tr>
<tr>
<td></td>
<td>Working conditions</td>
</tr>
<tr>
<td></td>
<td>Interpersonal relations</td>
</tr>
</tbody>
</table>
6.12 CHALLENGES OF CULTURAL DIVERSITY

Another challenge for the South African project manager is the cultural diversity which manifests itself along racial and language groupings. The cultural complexities are a consequent of the presence of whites, Asians and Africans (Booysen, 1999:31-54). The indigenous population which outnumbers the rest of the other groupings is the poorest and least represented in management. Table 6.7 below illustrates the fundamental differences between the African and European approaches to life in general and to the work environment in particular. These differences become a challenge to the project manager.

Table 6.7: Cultural dimensions in South Africa.

<table>
<thead>
<tr>
<th>DIMENSIONS</th>
<th>AFROCENTRIC</th>
<th>EUROCENTRIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social orientation</td>
<td>Collectivism</td>
<td>Individualism</td>
</tr>
<tr>
<td>Power distance</td>
<td>Large power distances</td>
<td>Large power distance</td>
</tr>
<tr>
<td>Uncertainty avoidance</td>
<td>High uncertainty avoidance</td>
<td>Low uncertainty avoidance</td>
</tr>
<tr>
<td>Goal orientation</td>
<td>Quality of life [femininity]</td>
<td>Career success [Masculinity]</td>
</tr>
<tr>
<td>Relationships and rules</td>
<td>Particularistic</td>
<td>Universalist</td>
</tr>
<tr>
<td>Degree of involvement and</td>
<td>Diffuse and effective</td>
<td>Specific and neutral</td>
</tr>
<tr>
<td>expression of feelings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>How status is accorded</td>
<td>Ascription</td>
<td>Achievement</td>
</tr>
<tr>
<td>Time orientation</td>
<td>Past, present, future</td>
<td>Present as means for future</td>
</tr>
<tr>
<td></td>
<td>[Synchronous]</td>
<td>[Sequential]</td>
</tr>
</tbody>
</table>

The African concept of socialisation is based on the principle of *muthu, kemuthu kabathu* (you are who you are because of other people). Commonly referred to as ‘ubunthu’ meaning humanness, this philosophy allows for collectivism and team work (Smit et al. 2007:255). In project management, the use of teams is a critical and effective method for project execution, meaning therefore that theoretically the concept of *ubunthu* can work as a positive for production purposes. An analysis of table 6.7 above, clearly indicates the extremes of workforce characteristics a project
The manager has to work with in executing the project. The challenges may be compounded by the ethnicity of the project manager given the manager’s possible perception of the other groups. Contrary to the assertions by Butler (1995:8-10) and as indicated in Table 6.7 above, Africans have low uncertainty avoidance because they have never experienced a predictable life in the last 300 years of apartheid, they have never had ultimate control over their destiny. Smit et al. (2007:262) suggested synergistic solutions to bridge the cultural diversities in the South African workplace. Table 6.8 below illustrates the suggestions to the challenges that may result from this cultural diversity. These cultural complexities are contemporary challenges the project leader has to overcome.

**Table 6.8: Towards cultural synergistic outcomes**

<table>
<thead>
<tr>
<th>Differences to be recognised in relationships</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>By Afrocentrics</strong></td>
<td><strong>By Eurocentrics</strong></td>
</tr>
<tr>
<td>Greater emphasis on the non-personal</td>
<td>Seek out and develop long term relationships in all aspects of people’s lives.</td>
</tr>
<tr>
<td>Eurocentrics focus on the problem or product</td>
<td>Focus on relationships more than the rules. The ‘get-to-know-you’ attitude and phase is crucial.</td>
</tr>
<tr>
<td>Clear separation between work and family</td>
<td>Negotiations are focused on people and relation-ships first.</td>
</tr>
<tr>
<td>Eurocentrics concerned with immediate career success and individual achievement</td>
<td>Recognise the importance of the extended family in life and work.</td>
</tr>
<tr>
<td>Work is not accomplished through relationships but needs individual motivation</td>
<td></td>
</tr>
</tbody>
</table>

**General conduct and demeanour**

<table>
<thead>
<tr>
<th><strong>For Afrocentrics</strong></th>
<th><strong>For Eurocentrics</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Be prepared to be specific and timely when working towards an end goal</td>
<td>Be prepared to be patient with randomness and free flow when working towards an end goal.</td>
</tr>
<tr>
<td>Each participant may not have several realities on an issue</td>
<td>Each participant may have several realities on an issue depending on the particular situation.</td>
</tr>
<tr>
<td>Schedules are not subordinate to relationships.</td>
<td>Schedules are typically subordinate to relation-ships.</td>
</tr>
<tr>
<td>Appointments are usually not approximations.</td>
<td>Appointments are usually</td>
</tr>
</tbody>
</table>
your extended families in times of need or duress.

approximations.

Be prepared to assist employees and their extended families in times of need or duress.

<table>
<thead>
<tr>
<th>What to do</th>
<th>For Afrocentrics</th>
<th>For Eurocentrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get appropriate information on the culture.</td>
<td>Be patient. Negotiations may take longer.</td>
<td></td>
</tr>
<tr>
<td>Be on time. Watch out which contract you sign.</td>
<td>Build relationships. Emphasise politeness.</td>
<td></td>
</tr>
<tr>
<td>Don’t expect close relationships from colleagues.</td>
<td>Be flexible, even regarding time schedules.</td>
<td></td>
</tr>
<tr>
<td>Assume differences until similarities are proven.</td>
<td>Use team approach.</td>
<td></td>
</tr>
</tbody>
</table>

(Source: Adapted from Smit et al. 2007-262)

If a platinum rule for diversity management has to be designed, then it will have to be; treat people as they would want to be treated. The challenge for the project manager is to be able to be everything to all people, employees want to be accepted and respected for who they are. Stoner, Freeman and Gilbert (1995:198) argued that proper management of diversity entails changing to a positive mind-set about diversity, teaching tolerance, valuing of differences, avoid stereotyping and make a special effort to understand women employees and their dual family and work responsibilities. Bagraim et al. (2010:42) suggested three cornerstones of managing diversity as indicated in Figure 6.6 below.

**Figure 6.6: Cornerstones of managing diversity**
6.13 MANAGING WOMEN AND WOMEN MANAGERS

Gender diversity is increasingly becoming a norm in workplaces and in different professions globally. It is however interesting that women in senior positions continue to be few. Studies indicate that there is little evidence of gender differentiated leadership traits which show a difference in productivity between male and female leaders (Ali, Kulik & Metz, 2009:1-6), yet women continue to be underrepresented in the workplace. When the number of women increases in an organisation, collaboration, solidarity, conflict resolution, reciprocity, self-sustaining action, work group effectiveness and levels of interpersonal sensitivity increase accordingly (Westermann, Ashby & Pretty, 2005:1783-1799). The absence of women in project management, specifically engineering enterprises, creates a challenge for a project manager when women join the workforce.

Firstly, there is the stereotyping of women because the environment has been characterised as ‘macho’ and predominantly male. Female managers are believed to be incompetent, lack leadership, are too soft for the tasks. Research shows that women are prone to resort to a transformational leadership style and are less autocratic, believe in consensus, show empathy, and have good interpersonal relations with subordinates (Neuhauser, 2007:21-32).
Secondly, a female project manager has serious challenges of acceptance in a male dominated environment as she is not taken seriously and considered more as an affirmative action appointee.

The challenge for the male project manager is not to regard women employees as less important but to accept individuals on their merits. Dependent on experience, the manager may have difficulty believing the commitment of women to be as productive as men, depending on the task. Where women are in management, the challenge is for them to exert their authority and take the reins. What is critical for all project managers is to adjust their leadership styles to suit the culture of the organisation and adjust their leadership styles to be congruent to the circumstances. Most men may not be interested in the democratic and soft approach to issues portrayed by women, this is interpreted as indecisiveness and incompetence.

Herbert (2006:29) said about Hilary Clinton When the crunch comes, the toughest issue for Clinton may be the one that so far has been talked about least. If she runs, she will be handicapped by her gender. Dobryznyski (2006:16) reported that male directors in the United States are simply afraid to take unnecessary risks by selecting a woman into a senior position. In the contemporary culture of the United States, women on the one hand are lauded as having the right combination of skills for leadership, yielding superior leadership styles and outstanding effectiveness. On the other hand, there appears to be widespread recognition that women often come in second to men in competitions to attain leadership positions. Women are still portrayed as suffering a disadvantage in access to leadership positions as well as prejudice and resistance when they occupy these roles. Women project managers have to contend with this, sad to say that even the other women themselves believe more in management of men and not of fellow women.

6.14 WRONG USE OR NO USE OF TOOLS TO MANAGE TASKS

Knipe et al. (2008:10) defined a project as a change-creating human endeavour uniquely cutting across organisational structures. The unpredictability of the failure or success rate of these projects necessitates the use of tools and techniques critical for successful project implementation (Papke-Shields, Beise & Quan’ 2009:1-21). The execution of the project is a complex human endeavour executed with the use of specific tools and techniques (Dwivedula & Bredillet, 2009:1-8). Mantel and Meredith
stated that project management as a process includes optimisation of resources to reduce the risk of project failure, as such it is imperative that certain operations necessitate the use of particular tools and techniques. Tools and techniques are the systems and methods or the equipment and the methods used to execute an undertaking. The tool is only as good as its relevance to the task at hand as well as the expertise of the user of the tool. Project managers find that what determines the success of their projects is not merely correct sequencing of a critical series of activities, but the prioritising of resources across the portfolio of multi-programs (Knipe et al. 2008:65). The resultant experiential effect is the indispensability of relevant project management tools that accommodate both the project driven metaphor and a resource based metaphor simultaneously. Of particular interest is the use of tools and techniques almost exclusive to project management, namely; Gantt charts, work breakdown structures, critical path methods and milestone charts.

(a) Gantt Charts.

This is a graphic presentation of the activities in the execution of a project depicted as a time scaled bar line. Burke (2007:277) referred to it as a scheduling tool where the time of each activity is represented as a horizontal bar with the length of the bar proportional to the duration of the proposed activity. Too often the average project manager does not know how to use the Gantt chart which would allow for time, resource and cost analysis in one single spread-sheet and tracking up to eight tasks in one row. With the modern use of Microsoft-Excel as an add on, the Gantt chart has numerous advantages such as its ability to show activities, time scale for the project, start and finish dates for tasks or activities, actual activity progress, milestones, interdependency of the tasks and clearly stated resource requirements for the tasks. The inability to use this tool may be a challenge for the project manager.

(b) Work Breakdown Structures

Gray and Larson (2008:571) defined the Work Breakdown Structure (WBS) as a hierarchical method that successively subdivides the work of the project into smaller work packages and checklists easier to manage, plan, control and allocate to specific individuals. Cost-centre costing is more effective using WBSs as they allow
for maximum focus on specific sections of the project. Burke (2008:96) referred to the WBS as the backbone of the project. The purpose of the WBS is to subdivide the scope of work into manageable work packages, this is not a straightforward task and many new project managers seek to avoid the use of the tool. The work packages are described in Table 6.9 below.

**Table 6.9: WBS Work Packages**

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality requirements</td>
<td>Procurement</td>
</tr>
<tr>
<td>Estimate (man hours)</td>
<td>Resources / responsibility</td>
</tr>
<tr>
<td>Budgets</td>
<td>Equipment / materials</td>
</tr>
</tbody>
</table>

(Source: Adapted from Burke 2008:97)

The WBS can best be defined as the map of the project (Gray & Larson 2008:97) which ensures that all the work elements are identified. It helps integrate the project with the whole organisation and thereby create a basis for control. It is essentially the deliverables beginning with the project that is divided into work packages divided according to the type of work at the most minimum sub-deliverable cost account showing work progress, cost centres and responsibilities. The WBS is illustrated in figure 6.10 below.

**Table 6.10: The hierarchical structure of a WBS tool**

<table>
<thead>
<tr>
<th>WORK BREAKDOWN HIERARCHICAL STRUCTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level 1</strong> – whole project with project plan</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Level 2</strong> – identified deliverables for the different project components</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Level 3</strong> – different components identified according to similarity of tasks</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Level 4 – the work centre itself whose completion leads to the next component

Level 5 – each unit allows for effective project management in unit form

Work package

Cost centre  Work progress estimates  Specific manager

(Source: Adapted from Manning & Curtis 2009:333)

Work packages have the shortest duration or they are the minimum tasks or elements of the project with a definite start and end time. At this point it is easier and more accurate to work out the costs, assign a specialised skill and monitor the progress of the execution. A work package manager therefore sees to the completion of the respective tasks within a specified time and budget according to customer expectations and technical specifications. Thus the work package comprises the most basic unit for planning, scheduling, and controlling of the project. A poorly designed WBS tool may not provide accurate information for costing to the project manager, care and accuracy is needed in using the tool.

(c)Critical Path Method

The critical path of a project is the path that determines the longest duration through the project network that it takes to execute the project from start to finish. Cain and Wong (2007) define it as the estimated project duration whose period equals the longest path through which the project network passes. This tool is essential for effective project management, it serves many critical functions in effectively executing a project, amongst which are the costing of the project, and the time estimation. Any endeavours to crash the activity are based on the ability of the project manager to identify the number of activities that may be reduced. Depending on the choices available to the project manager, crashing may be through asking employees to work overtime, or employing additional temporary staff to expedite the work. The CPM assists in identifying these different sets of activities and show their
dependence and the duration therefore assisting in the proper estimation of the time required and the budget for the purpose.

(d) **Milestone Charts**

Efficiency means optimisation of the resources to achieve maximum intended results. Project management tools are the guide that supports the process to deliver as dictated by the firm’s strategy for competitiveness and profitability, and techniques are what to use in order to achieve those (Milosevic 2003:20). It is important to have workable business practices and procedures in place (Van der Walt 2000:58). For this, the facilitators need to be both managers and individual contributors on a variety of projects. This tool is critical for time management by the project manager. Effective project management practices encompass the use of methodologies, procedures and standards to determine the roles and responsibilities of the project team. Unfortunately most project managers do not make use of the full complement of project tools and techniques for many unknown reasons. Some consider the tools to be too mathematical and therefore difficult to understand or use. Wrong tools or methods are applied and thereby working on a project without full understanding of the map the execution should follow and how that can be converted to the manager’s advantage. The tools essentially allow the manager to measure the progress of the interrelated parts of the project simultaneously. If you cannot measure it, then you cannot manage it properly and efficiently.

6.15 **LACK OF SUPPORT FROM SENIOR MANAGEMENT**

The decision to embark on a project is taken by top management, or at least the permission to get involved in a project. The decisions may not always be agreed on by all senior managers sitting, or the decision on who should be appointed to run the project may be taken amidst controversy. Whatever the circumstances, the commencement of a project is because senior management will have an interest in the undertaking. Top management support is a critical success factor in that the management will assist in attainment of the resources depending on how important the project is to them. The support is strongest when there is a project sponsor in senior management, because top management controls the project manager’s resources.
The extent of support from functional managers in a matrix, is based on the level of support from top management (Belassi & Tukel 1996:141-151). The absence of support from the top management poses a serious challenge for the project manager as it will be increasingly difficult to get the necessary resources in time. The level of motivation amongst the project members will also be low leading to less productivity and sub-optimal performance. If the stakes are considered too high, the senior management will try to determine what competencies are expected from the project manager thereby leading to micro-management of the project manager’s operation. Research findings show that there are differences between the views of senior management and project managers over the necessary competencies of a project manager. This may become a source of problems for the project practitioner leading to senior management intervening in the operations.

For far too long project management has always been associated with a person’s ability to use technical skills and thereby making it an engineering orientated profession. The growth of the profession in industry has opened the subject to more scrutiny, and research findings clearly identify the multi-skills nature of the profession (Pant & Baroudi 2008:124-128). A mixture of skills such as a blend of interpersonal skills, high levels of emotional intelligence, technical skills, and a cognitive attitude are required to manage a project effectively. An effective project manager in a specialised project environment needs to understand the importance of both soft and hard skills to succeed as a practitioner (Suikki, Tromstedt & Haapasalo 2006:723). Work is done by people regardless of the technical nature of the project. This makes it imperative therefore that whatever skills a project manager has, soft skills are a critical component of that skills base. Eighty per cent of the working time of the manager is spent in meetings, mentoring, and resolving problems with people.

The challenge for the project manager, particularly those with technical or hard skills, is to adjust to the reality that projects are executed through human beings. Most technical university graduates who eventually end up as project managers realise the need for the soft skills later in their working life (Sukhoo, Barnard, Eloff, Van der Poll & Motah 2005:16-19). According to Gillard (2009:723-730) and Wohlin and Ahlgren (2005:189-205) soft skills are a critical component of project management, and the soft skills were constantly referred to by different names such as soft factors, interpersonal skills, people skills, personal skills, social skills, critical skills and
human skills. Project managers from technical backgrounds especially grapple with the soft skills thereby creating performance problems. Even those who do not come from technical backgrounds, need a lot of the working knowledge, most of which may be seen in project managers with high emotional intelligence. These skills will assist with conflict resolution and motivation of employees to perform well, this is a serious challenge for all would be effective project managers.

6.16 THE AUTHORITY GAP

Power is central to the influence that people use to direct their followers toward the achievement of intended goals. Influence is essentially any behaviour by one person that is meant to influence the attitude and behaviour of the other person (Atuahene-Gima & Li 2000:451-470). Applied differently, influence is power in action or as seen in the subsequent activities. This can be contrasted with authority which is the power bestowed upon an individual person to hold people accountable for their actions and to make decisions on any issues relating to their responsibility (Jones & George 2009:49). The project manager has no authority and is therefore powerless depending largely on ‘borrowed authority’ to manage the workforce through support from senior management (McShane & Von Glinow 2009:197). Research shows that if too many employees perceive too much political interference in the work situation, it will result in lower job satisfaction, lower organisational commitment and lower organisational citizenship (Kacmar & Baron 1999:1-39). The consequences will be low motivation, resulting in poor performance, low productivity, high labour turnover and inevitably the organisational objectives may not be met. The extent of the project manager’s power is dependent largely on the size, structure and politics of the organisation (Aquinas 2006:297). In spite of the advantages of the use of the matrix structure from an organisational perspective, such as communication efficiency, project flexibility, knowledge sharing, and maximisation of resource usage the project manager has serious limitations (McShane & von Glinow 2009:266). The matrix system impacts negatively on the project manager’s leadership and performance because of the dual reporting system, divided loyalty, increase in goal conflict and ambiguity (Sy & D’Annunzio 2005:39-48). These conflicts become the breeding ground for the quest of control that leads to political activity in the organisation. The authority gap worsens the project manager’s dilemma since he/she will strive to lead without the traditional managerial authority and necessarily depend on functional
managers (Goold & Campbell 2003:427-439). Senior management holds back power dependent on the size of the operation and the degree of political interest (Calabrese 1997:239-252). To achieve the goals and objectives effectively the project manager has to resort to other forms of power and techniques to effect successful project execution and overcome the authority gap and subsequent exposure to erosion of the control by other parties in the planning, organising and management of resources (Knipe et al. 2009:208). Though the project manager’s role is the coordination and integration of activities across multiple and functional lines this role is weakened by the authority gap which becomes basis for political interference from functional managers from whom the project manager gets his resources (Kerzner 2009:9-13). Smith, Houghton, Hood and Ryman (2006:622) postulated that the authority gap creates a political power struggle. Politics becomes inevitable as the functional-silos compete for control over resources to satisfy their own objectives, be they individual or departmental. Very rarely do politically illiterate project managers effectively lead the project execution process. Politics is a powerful yet frequently overlooked influencer of successful project leadership which assists practitioners to focus on the relevant success criteria of the project. Once the political linkages are established, it leaves the project manager free to concentrate on other project operational issues. It should be emphasised that power and political relationships take up a significant amount of a project manager’s time; getting involved on the right side of the political game is a very difficult decision for the project manager to take (Smith et al. 2006:622-629).

6.17 CONFLICT

Putnam and Poole (1987:552) were the earliest researchers to define conflict, they defined it as the interaction of interdependent people who perceive opposition of goals, aims and values, and who see the other party as potentially interfering with the attainment of these goals. Conflict in project management are a norm and have numerous causal factors, most of which may be prevented if other knowledge areas are conducted appropriately. Most conflicts stem from differing ideas on the distribution of resources (Smit et al. 2007:377) or disagreement on operational issues. The incompatibility amongst differing professionals in a team are another source of conflict that may disrupt the operations and management of the project. Depending on the nature and the cause of the conflict, conflict can be destructive or
productive. Figure 6.7 below shows the structure of conflict and how this can be resolved. The challenge for the project manager is to be able to be non-partisan and strive to bring the belligerents to a win-win compromise without sacrificing the organisation objectives.

Bergh and Theron (2003:224), psychologists define conflict as a process that begins with one party experiences or perceiving that another party has negatively affected, or is about to negatively affect, something that the first party cares about. The conflicts are classified as intrapersonal, interpersonal, or organisational (Robbins, 2005:91). Different views of conflicts are propagated, but what is critical is that conflicts if not properly managed are destructive to project processes. Manning and Curtis (2009:253) developed a model illustrated in Figure 6.7 below.

**Figure 6.7: Conflicts extremities and resolutions**

![Conflicts extremities and resolutions](Source: Manning & Curtis 2009:253)

Conflict takes occurs at different levels in an organisation, but the project manager’s conflict may be interpersonal, inter-group, or it may even be inter-organisational with suppliers or other stakeholders. The challenge for the project manager is to provide the required leadership and to negotiate (Kharbanda & Stallworthy 1991:2). Depending on the nature of the conflict and the level at which the conflict occurs, it may disrupt the operations or cause a total stoppage of a project. The project manager is too often caught in-between and needs special levels of emotional intelligence and wisdom to distinguish right from wrong. An effective project manager
needs to be well networked and possess good negotiation skills to overcome such challenges.

6.18 CONCLUSION
The project manager’s problems are numerous and vary according to the type of project, the type of organisational structure, and the politics involved in the project. The call to duty for project managers exceeds the traditional management duties and responsibilities. The factors that cause problems, and the problems themselves are too numerous and highly unpredictable compared to routine management. The project manager needs to relinquish the traditional methods and convert to leadership and not management. The challenges the project manager encounters in the process of implementing the organisational objectives may require high levels of emotional intelligence and the ability to switch leadership styles to suit the circumstances. An important challenge that the project manager has to face is to continuously motivate his or her workforce regardless of the pressure and challenges they are confronted with. Although there is mounting pressure when working under high conditions of uncertainty, the problems are surmountable if the right skills are applied.

Together with the different challenges discussed above, the project manager will also be affected by the constant transformation of the work place, the increase of the power of the customer and the subsequent demands, new roles and expectations of the workers, and the technologising of the work environment.
7.1 INTRODUCTION

This chapter focuses on the conceptual framework of the thesis. The first part of the chapter will be a brief overview of historical perspectives of management, citing advantages and disadvantages, similarities and differences in the leadership theories. The second part of the chapter focuses on the history of project management and the third part focuses on theoretical perspectives of the conceptual framework. These are followed by a detailed conceptual-theoretical perspective specifically evaluating the potential application to the unique project management discipline. The reference to known management models is deliberate, as this will allow for an inclusive framework that will help in removing possible gaps emanating from omission of good elements of the existing approaches.

Maxwell (1996:25) stated that a conceptual framework is a system of concepts, assumptions, expectations, beliefs, and theories that support and inform the research. Carroll and Swatman (2000:235-242) referred to it as a visual representation that explains graphically or in narrative form the main issues to be studied. It is the schematic graphical structure that shows the variables (independent and dependent) that form part of the purpose of the study. This entails identifying the concepts, key factors, the variables, together with the presumed relationships between these factors. The key factors are based on both the experience of the practitioners and empirical research findings by academics. Project execution is a function of many factors, specifically the expertise of the management, the nature and size of the project, the followers and their power, stakeholder interests and power, the interest of the top management and the degree of support or lack thereof.

In a broad sense, the conceptual or theoretical framework is a tentative theory, theories are constructed to explain or predict phenomena like relationships and behaviour. The generalisations of the theory derived from observations will consist of interrelated ideas and models. The theoretical framework as a structure will support the theory of the research work and provide reasons why the problem is being studied. The theoretical framework can then be developed into a conceptual model, which is essentially the basis on which the study is conducted, whereas the
A conceptual framework is the researcher’s position on the problem. According to Rudestan and Newton (1992:7) a conceptual framework is the presumed reality which will inform the research design which, in turn, will lead to the elucidation of further research questions and implications for additional research. A conceptual model should comprise that which is found in literature and from the unrecorded knowledge and information that resides with the practitioners and other sources associated with the subject being investigated. Focusing on literature alone will exclude the essential realities as experienced by practitioners. An integration of theories that may not have been considered related, and information from other diverse sources may produce a more relevant conceptual framework (Matten & Moon 2008:404-424). Therefore, personal experience, personal research publications, empirical research and existing literature are the main sources for this framework.

### 7.2 HISTORICAL PERSPECTIVES OF MANAGEMENT IN GENERAL

From the preceding literature, effective leadership is not a one size fits all scenario, nor is it a one stop shop where all effective leadership styles are under one roof. Leadership is a process that involves interaction with followers who have their own problems, goals and reasons for following. Leadership and management are differentiated in theory, but are two approaches distinct from each other and yet have one goal. Both use power (the ability to influence) to get followership, but their sources of influence may be single or dual. Theories postulate that management is task-oriented and leadership is people-oriented, these terms have been used interchangeably. Table 7.1 below illustrates differences specific to project management and project leadership.

<table>
<thead>
<tr>
<th>Project management</th>
<th>Project leaders</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Project managers focus on systems</td>
<td>Project leaders focus on people</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Project managers are appointed</td>
<td>Project leaders are chosen by their team members</td>
</tr>
<tr>
<td>Project managers administer</td>
<td>Project leaders innovate</td>
</tr>
<tr>
<td>Project managers focus on</td>
<td>Project leaders focus on</td>
</tr>
<tr>
<td>conforming and maintaining</td>
<td>challenging and developing</td>
</tr>
<tr>
<td>Project managers have a short</td>
<td>Project leaders have a long</td>
</tr>
<tr>
<td>term perspective</td>
<td>term perspective</td>
</tr>
<tr>
<td>Project managers like consistency and accept the status quo</td>
<td>Project leaders are flexible and challenge the status quo</td>
</tr>
<tr>
<td>Project managers are risk</td>
<td>Project leaders are risk</td>
</tr>
<tr>
<td>adverse</td>
<td>opportunists</td>
</tr>
<tr>
<td>Project managers focus on</td>
<td>Project leaders create a vision for the future with an eye on the horizon</td>
</tr>
<tr>
<td>planning, budgeting and the</td>
<td>Project leaders develop</td>
</tr>
<tr>
<td>bottom line.</td>
<td>interpersonal lines of</td>
</tr>
<tr>
<td>Project managers develop</td>
<td>communication</td>
</tr>
<tr>
<td>communication systems</td>
<td></td>
</tr>
<tr>
<td>Project managers focus on</td>
<td>Project leaders focus on</td>
</tr>
<tr>
<td>organisation structures</td>
<td>people</td>
</tr>
<tr>
<td>Project managers focus on the</td>
<td>Project leaders aim to inspire</td>
</tr>
<tr>
<td>problem solving processes</td>
<td>and motivate</td>
</tr>
<tr>
<td>Project managers focus on targets and milestones</td>
<td>Project leaders focus on creating change</td>
</tr>
<tr>
<td>Project managers want to control</td>
<td>Project leaders are passionate</td>
</tr>
<tr>
<td>their project</td>
<td>about their project</td>
</tr>
<tr>
<td>Project managers focus internally</td>
<td>Project leaders focus externally on</td>
</tr>
<tr>
<td>on the project</td>
<td>the client, competition, the</td>
</tr>
<tr>
<td></td>
<td>market and new technology</td>
</tr>
</tbody>
</table>

(Source: Adapted from Burke 2007:263)

Managers have subordinates and rely on their positions (legitimate power) to gain the authority they use to drive the teams to produce. But leaders have followers and use influence which gains them followers on the basis of trust and mutual respect. Many managers combine both management and leadership in the execution of their duties. Through the years management theories were established (Hellriegel &
Slocum 1996:5); this evolutionary process is discussed briefly below. The study of the evolution of management theory helps to understand how managers manage effectively and efficiently (Jones & George 2009:41). There are many other theories that may not be found in existing literature, such as the paternalistic, ubuntu, the Abrahamic models, the implicit theories and the family based management systems. The management theories discussed are largely what is recorded in western literature. The changes in management theories are primarily in response to the change in the environment due to both internal and external pressures. In the main these pressures are from political, economic, social, technological, international and ecological factors (Smit et al. 2007:29).

7.3 LEadership Theories

Management is often confused with leadership; managers develop skills to enable them to cope with complexities, whereas leadership is about coping with change. Management focuses on directing others, whereas leadership focuses on guiding, encouraging and facilitating in pursuit of those objectives (Elhers & Lazenby 2010:286). A detailed account on the differences between leadership and management is illustrated in Table 2.3 of this thesis.

Winston and Patterson (2006:6-66) defined leadership as being any act of influence on a matter of organisational relevance. Leadership is inducing followers to work towards set objectives without compelling them but by use of motivations and working towards the expectations of both the leader and the followers. The genius of leadership is the ability of the leader to identify values and motivators of the followers and yet keep a constant focus on organisational objectives. ‘The mystique of leadership, be it educational, political, religious or commercial is next to impossible to describe, but wherever it exists, morale flourishes, people pull together toward common goals.’ Hesburgh (1971:763-765) asserted that such leadership always has a moral and intellectual dimension. Because there is no central concept of leadership, it has become more feasible to study the actual behaviour of a leader and not the factors associated with the leadership concept. Wren (2005:303) proposed that the history of leadership theories may be divided into four parts, namely the traits era, the bureaucratic leadership theory, the Mary Parker Follett and
Renesis Likert theories. The rest of the other theories are variations of the same theories without actual change of substance.

7.3.1 The traits theory era
According to Hellriegel et al. (2007:288) Tead (1935) propagated the theory that leaders possessed certain peculiar traits not found in non-leaders. These included, physical and nervous energy, a sense of purpose and direction, enthusiasm, friendliness and affection, integrity, technical mastery, decisiveness, intelligence, teaching skill, and faith. Other authors interpreting the traits theory summarised them into five units, namely power, intelligence, persuasion, personality and charisma. The idea of the traits theory was that strong leaders had certain basic traits or characteristics that distinguished them from non-leaders. It is currently accepted that traits play a role in leadership, but the role is minimum. The traits theory currently serves as the basis of leadership theories and models, but it does not explain why certain leaders without the five characteristics listed above, succeed and why those with these characteristics sometimes fail as leaders. If these characteristics could be distinguished as key-must-haves, then the politicians, clergy and other leaders should all have these characteristics, unfortunately they do not always have them (Navahandi 2006:38).

7.3.2 Participative leadership
The participative leadership theory of human relationists and organisational humanists is a formidable and more effective way of leadership. This theory was formulated by Vroom and Jago (1988:204) and was meant to reduce the power distance between the managers and the subordinates in organisations. This model postulated that the effectiveness of an organisation is based on ‘joint function of situational variables expressed as problem attributes and leader behaviour expressed as processes for making decisions’. Hersey and Blanchard (1979:101) posited that ‘the more managers adapt their style of leader behaviour to meet the particular situation and the needs of their followers, the more effective they tend to be in reaching personal and organisational goals.’

7.3.3 The bureaucratic leadership theory
The bureaucratic leadership theory emphasised the existence of a structure within which power and authority will be given to the occupancy of the positions in a
hierarchy. It is common knowledge in organisations today that a form of authority is required to guide the organisation toward its objectives. Such power and authority should be vested in people who have the required abilities and skills (Wren 2005:225). This theory has both differences and similarities to the traits theory. The major differences are that the bureaucratic theory advances the use of division of labour, rules and regulations, the hierarchical order of positions with clearly defined reporting systems, and the importance attached to the top bottom flow of information.

7.3.4 The Mary Parker Follett era
Mary Parker Follett’s theories contributed significantly to the contemporary practice of leadership. She identified five critical leadership and management areas. The theory is closely related to the traits theory as it recognises the bureaucratic structure and the theory and acknowledges the importance of power and authority. She, however, recognised the importance of power-with as opposed to power-over the followers. Mary Parker Follett suggested that the best people with the best expertise will be the best leaders of a group (Navahandi 2006:38). The major differences stem from the absence of structure and enforceable regulations as pronounced in the traits theory which bases the leadership effectiveness on the individual’s characteristics. Mary Parker Follett introduced the need for conflict resolution through integration of interests, obedience to the law of the situation, power sharing, creating a good organisation by creating a situation conducive to working, and recognition that authority resides in the situation and not in individuals.

7.3.5 The life cycle theory
This theory, developed by Hersey and Blanchard (1979:303) was based on the curvilinear relationship between initiating structure and consideration behaviour and maturity. The theory sought to provide an understanding of the relationship between an effective style of leadership and the level of maturity of the followers. Maturity of the followers referred to their ability to be responsible as individuals or groups, independent and motivated to achieve. Maturity of the followers is influenced by many factors, among which are their level of education, understanding of the objectives, experience and relationship to the leader (Smit et al. 2007:283). This theory postulated that the leader’s leadership style passes through certain stages which are dependent on the maturity of the followers, these are:

- high-structure low-consideration stages
7.3.6 The situational leadership theory
Bass (1990:3) postulated that a leader has a strong drive for responsibility and task completion, vigour and persistence in chasing after the objectives and goals initiative in problem solving. Concomitant to this is self-confidence, willingness to accept consequences of one’s actions, willingness to take interpersonal stress, ability to influence behaviour, capacity to structure social interaction systems and willingness to tolerate poor performance, failure and delays, in pursuit of the set objectives and goals. Thus, as the level of follower maturity improves in relation to accomplished tasks, the leader should reduce task behaviour and increase relationship until the group reaches a moderate level of maturity. When the group moves into an above average level of maturity, the leader needs to reduce both task and relationship behaviour.

7.3.7 House’s path-goal leadership theory
House’s path-goal theory is rooted in the expectancy theory of motivation and states that effective leaders strengthen the performance-to-outcomes expectancy and valences of those outcomes by ensuring that employees are rewarded for their performance (McShane & Von Glinow 2009:235). The Path-Goal theory postulates that the effectiveness of the leader is dependent on the situation and the task. Effective leadership is the ability to select and adapt behavioural styles ideal for the situation, task and circumstances in which the leadership takes place. Followers are considered important in this model, and interrelationships and interactions between the leader and followers assist in effective leadership. The model suggests an ideal leadership style prescribed by the type of followers, which enables the leader to decide on a leadership style to suit the followers. The first contingency variable in

- high structure-high consideration
- high-consideration-low structure behaviour, to
- low structure-low consideration behaviour

This would be dependent on whether or not the follower progresses from immaturity to maturity. The ideal leadership structure for matured followers according to this theory is 'low structure-low consideration'.

this model is the follower or employee characteristic, suggesting that different followers will prefer different leadership styles.

7.3.8 The transformational and transactional leadership theory
This theory postulates that leaders change teams or organisations by creating, communicating and modelling a vision for the organisation. This theory is arguably the most prominent leadership form to date; it is considered most ideal when the organisation needs to adapt to changes (Vera & Crossan 2004:222-240). It is believed to empower the subordinates and gives them ownership of the operation through the use of a well communicated vision. The transformational and transactional theories are illustrated in Table 7.2 below.

<table>
<thead>
<tr>
<th>Table 7.2 Transformational and transactional leadership theories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TRANSFORMATIONAL LEADERSHIP</strong></td>
</tr>
<tr>
<td><strong>Idealised influence</strong></td>
</tr>
<tr>
<td><strong>Inspirational motivation</strong></td>
</tr>
<tr>
<td><strong>Intellectual stimulation</strong></td>
</tr>
<tr>
<td><strong>Individualised consideration</strong></td>
</tr>
<tr>
<td>** TRANSACTIONAL LEADERSHIP**</td>
</tr>
<tr>
<td><strong>Contingent reward</strong></td>
</tr>
<tr>
<td><strong>Management by exception</strong></td>
</tr>
</tbody>
</table>
active | expected performance.
---|---
Management by exception - passive | Leaders choose not to, or fail to intervene until a problem becomes serious. In essence, leaders do not intervene until a problem is brought to their attention.

**Laissez-faire leadership**

Laissez-faire leadership Leaders avoid accepting responsibility and delay or even fail to follow up on requests. This type of leader behaviour also includes little or no effort to address followers’ needs. It is essentially an absence of leadership.

(Source: Adapted from Northouse 2007:83)

A transformational leader appeals to the critical mass of his followers to accept his vision, then, working with them, seeks to effect the change. Both the transformational leadership and the transactional leadership style are characterised by extensive planning and close supervision of the followers.

**7.3.9 Implicit leadership theory**

Leadership is largely about the followers and their perspectives and how they are influenced or prepared to be influenced by the leaders (Epitropaki & Martin 2004:293-310). Everyone has a leadership prototype developed through socialisation, this shapes the expectations of the followers, which affects the ability of leaders to influence followers (Keller 2003:141-160). Leader effectiveness resonates with follower and leader prototype congruence, informed by preconceived ideas, experience and understanding of effective leadership. The evaluation of leadership behaviour is a function of both overt leadership and the evaluator’s cultural background (Bass 1990). Cultural values, beliefs and practices are inherent in both the leader and the followers; as such, each has certain expectations in terms of the type of behaviour they expect of the other, thereby creating divergence of thoughts and practices (House, Javidan, Hanges & Dorfman 2002:3-10). Different cultures have different ways of interpreting behaviour and its meaning, which implicitly affects perceptions about good followership and good leadership.

**7.4 LEADERSHIP COMPETENCY MODELS**
Competencies are perceived as cognitive, functional as well as social abilities and skills that can be used in the performance of tasks and the value creating competencies have a direct link to outcomes (Ireland, Hoskinson and Hitt, 2007:88). Competencies are abilities that reside in a person, they are the skills that are utilised by individuals to enable them to perform. Larson and Gray (2011:359) posited that competencies are displayed at different levels and they classified them as task related knowledge and skills, competency at an interpersonal level, and organisational skills.

**Task related skill and knowledge** refers to knowledge and skills reflected in the ability to answer questions, solve technical problems and excel in certain types of tasks.

**Interpersonal level** competencies relate to the ability to listen effectively, communicate clearly, resolve arguments, and provide encouragement.

**Organisational competency** refers to the ability to run effective meetings, set meaningful objectives, reduce inefficiencies, and build social networks.

Apart from leadership styles, which are essentially leader behaviour informed by many other factors, competencies are what the leaders themselves are capable of doing.

Among other competencies Manning and Curtis (2009:29) suggested integrated competencies needed for effective leadership will such as leadership competencies that separate leaders from managers, and professional competencies as those that give depth to leadership. Furthermore, leadership abilities as vision, ability to create and lead a team, manage conflicts, assess situations, coach and mentor peers, implement employee involvement strategies, interpersonal relations, communicate effectively, and self-awareness and direction.

Philip and Bedeian (1994:990-1001) identified empowerment, intuition, self-understanding, value congruency and vision as basic competencies required by an effective leader. Sosik, Juzbasich and Chun (2011:435 - 450) state that there are antecedents or competencies that contribute to effective leadership. Pagan, Banutai, and Bizjak, (2008: 1-25) proposed a competencies that are necessary for change management as requiring cognitive, functional and personal attributes. They suggest
that personality, values, attitudes, education training, mentoring, coaching, consulting, and work experience all contribute to effective change management. Historically, strong technical skills and knowledge of the industry are key selection criteria. Complex project environments require greater competencies above technical skills, leaders use people to get work done, and effective leadership has more to do with the human resources that it has to do with skills. This is not to under estimate the role of technical skills, but technically skilled people need to be led effectively. Project managers should focus on their leadership skills and competencies for them to influence and control project execution.

7.5 HISTORY OF PROJECT MANAGEMENT

The growth and development in technology together with inventions has changed the face of the world, but project management has remained in its place. Though the project management as a discipline was not understudy, it is evident that it has moved with times, but the human element has remained the same. It is the changes in the way of life of the human beings that has changed the way things are, but humans have remained humans. Project management has changed over the years influenced by political, economic, social, technological, international and environmental factors, see Table 7. 3 illustrating highpoints in the history of project management.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>DEVELOPMENT IN PROJECT MANAGEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>4000 BC</td>
<td>Noah’s ark built with the help of or by the Antediluvians to escape the pending</td>
</tr>
<tr>
<td>Year/Event</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>+- 3500 BC</strong></td>
<td>The Nephilim built; The House of the Link Between Heaven and Earth [at Larsa] The House of The Seven Guides [at Borsippa], the House of the Foundation-Platform for Heaven and Earth [at Babylon], The House of The Mountain of the Universe [at Asshur], and many Mesopotamian ziggurats [Genesis 11]</td>
</tr>
<tr>
<td><strong>2570 BC</strong></td>
<td>The Pharaohs built the Great Pyramid Of Giza; records show the presence of managers for the four sections of the pyramid.</td>
</tr>
<tr>
<td><strong>960 – 586 BC</strong></td>
<td>The sourcing of material and eventual building by the Jews of Solomon's Temple in Jerusalem for the worship of God. [1 Kings 6]</td>
</tr>
<tr>
<td><strong>208 BC</strong></td>
<td>Great Wall of China, one of The Seven Wonders of the Ancient World. The labour was organised and it was a great project, 2400 kms of stone, brick and earth.</td>
</tr>
<tr>
<td><strong>1604 AD</strong></td>
<td>The Golden Temple in Amritsar, the house of worship of the Sikhs. the temple was built using marble, copper, and an overlay of gold leaf. One of the Seven Wonders of the Modern World. Large number of men were involved in the construction during the reign of Ranjit Singh.</td>
</tr>
<tr>
<td><strong>1631 AD +</strong></td>
<td>The Taj Mahal, built by +- 20 000 men and took 20 years built in owner of Mumtaz Mahal [tomb] by Shah Jahan the emperor in honour of his wife.</td>
</tr>
<tr>
<td><strong>1917</strong></td>
<td>Development of the Gantt Chart by Henry Gantt. A scheduling tool used in project management to date, first used at the construction of the Hoover dam in 1931.</td>
</tr>
<tr>
<td><strong>1950s</strong></td>
<td>Project manager’s position was managed autonomously at locations. The American Association of Cost Engineers [AACE] was formed, 1957 the Critical Path Method was invented by Dupont, 1958 Program Evaluation Review Technique [PERT] was invented for the USA navy.</td>
</tr>
<tr>
<td><strong>1960s</strong></td>
<td>In 1962 the USA defence mandated the Work Breakdown Structure [WBS] as a project management tool, the International Project Management Association [IPMA] was founded and now has in excess of 40 000 members in 40 countries, in 1969 the Project Management Institute [PMI] was launched.</td>
</tr>
<tr>
<td><strong>1970s</strong></td>
<td>In 1975 PROMPTII Method was created by Simpact Systems, Fred Brooks introduced the Software Engineering. The focus on projects is now on design and development</td>
</tr>
<tr>
<td><strong>1980s</strong></td>
<td>The Theory of Constraints [TOC] came into use, Scrum [software] was developed, PMBOK was published, Earned Value Management [EVM] introduced to project management, PRINCE Method developed, planning and controlling of projects was moved to the project management office with increase in management-by-projects.</td>
</tr>
<tr>
<td><strong>1990s</strong></td>
<td>Standish group’s CHAOS report introduced, PRINCE 2 published, PMMBOK</td>
</tr>
</tbody>
</table>
made the standard for project management, management-by-projects [projectification of the industry] increased. The PMO became more organised and important.

2000s PRINCE 2 revisions and PMBOK 4th edition published, project management as an academic offering increased. Large national infrastructure building worldwide creates demand for project management. New emphasis on generic project management including events management etc.

(Source: Own construction, summary of world events)

Listed above are a few highlights in the history of project management. The sports events, weddings, celebrations, and the host of all the human endeavours with a start and end date are all projects. Project Management has advanced as a profession as evidenced by the increase in the enrolment of students in this profession. Better technology, tools and techniques will continue to be developed. Both the technical and soft skills required for effective project management will constantly change as the society and technology continue to change.

7.6 MANAGEMENT AND LEADERSHIP CHANGE DRIVERS

Organisational change moves organisations from the present to a desired future state (Jones and George, 2009:407). There are forces that force the change in the organizations, these are the change drivers illustrated in Table 7.4.

Table 7.4 Change drivers that influence leadership

<table>
<thead>
<tr>
<th>Change driver</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Education of the workforce</strong></td>
<td>type of skills required for the job</td>
<td>experience of the workforce to be lead</td>
<td>knowledgeability about operations</td>
</tr>
<tr>
<td><strong>Religion of the workforce</strong></td>
<td>beliefs systems of the workforce</td>
<td>expectations from the workforce</td>
<td>ethical conduct by leaders towards workforce</td>
</tr>
<tr>
<td><strong>Diversity of the workforce</strong></td>
<td>the gender mix at the workplace</td>
<td>the racial mix at the workplace</td>
<td>different levels of education</td>
</tr>
<tr>
<td><strong>Technological changes</strong></td>
<td>the automation of the industry</td>
<td>ever growing use of tools in place of people</td>
<td>the proliferation of software programs</td>
</tr>
<tr>
<td>Competition in the market</td>
<td>1</td>
<td>Mushrooming of small and medium businesses</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Demand for more efficient project deliverers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Cost effective production of products or goods</td>
<td></td>
</tr>
<tr>
<td>Economic situation</td>
<td>1</td>
<td>The global effect on the economies of countries</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Levels of people with disposable income</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Economic policies pursued by the government</td>
<td></td>
</tr>
<tr>
<td>Social changes</td>
<td>1</td>
<td>Change in tastes of products by the market</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>High expectations of social responsibility by society</td>
<td></td>
</tr>
<tr>
<td>Unionisation of workforce</td>
<td>1</td>
<td>Union demands on working conditions for members</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Labour Relations legislation and and impact on managing</td>
<td></td>
</tr>
<tr>
<td>Globalisation</td>
<td>1</td>
<td>Flooding of the market with cheaper goods</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Shortened life cycle of the products marketed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Introduction of new products from other countries</td>
<td></td>
</tr>
<tr>
<td>Cultural effects</td>
<td>1</td>
<td>Workplace culturally based implicit leadership</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Misinterpretation of the culture of the workforce</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Need to adjust to the situation of the diverse workplace</td>
<td></td>
</tr>
</tbody>
</table>

(Source: own construction from data by Jones and George, 2009:407)

Since the industrial revolution there has been a rapid succession of management thought caused by the dynamic nature of the business environment. This change is as a result of environmental changes which impact on business operations and life in general. A change driver is a factor that may influence the necessity for a change in the organisation. Changes in the environment affect the structure and needs for the organisation, thereby influencing the leadership styles as required by the organisation in its new state (Jones & George 2009:201). Table 7.4 above illustrates the major pressures exerted on both the organisation and consequently the management approach in the industry. At the hub of these changes are the political, economic, socio-cultural, technological, international and environmental forces (PESTIE). The industrialisation and globalisation have also changed the terrain in which management and leadership in general should behave. Specifically with the increase in competition, organisations seek to produce the best results to stay in the market.

Global political changes, new legislation, together with the advent of consumerism and labour unions have introduced a new paradigm within which employees should
be managed and led. The demand on what is necessary for good performance has shifted to the quest for effective leadership. Dramatic shifts in culture and social conduct due to intercultural interaction, education and access to information readily available globally have introduced well-informed employees with certain expectations to be met. Technology has facilitated the movement of information, restructured organisations, brought about new skills, and thereby changed the organisation’s landscape.

Contemporary managers work in mechanistically structured organisations controlled by policies, specific guidelines, methods, procedures, rules and administrative practices. These direct the thinking, decisions and actions of managers (Elhers & Lazenby 2010:343). The policies prescribe the contemporary management thought in response to the PESTIE. Political changes in South Africa ushered in Affirmative Action and Employment Equity, thereby introducing unprecedented diversity in the project environment. The purpose of these two acts of parliament was to introduce disadvantaged groups (the non-whites and females) who, inevitably come into the workplace at different levels with a different culture and unique expectations. The new labour laws, unionism and consumerism have added to the pressure on management to use other methods of leadership than the traditional autocratic and coercive style reminiscent of white managers in the past. The competencies required have to be in line with the prevailing political climate. The high levels of unemployment amongst the blacks in the country, and their economic conditions (62% of the black population is chronically poor) may create an environment that may seem to regress the political gains to date, as people will forgo their rights just to have food on the table. These are the conditions within which the project manager needs to meet senior management’s expectations. The prevailing special interest in project management in South Africa attracted gender diversity in the project environment.

Schein (2001:675–688) observed that, despite the many historical, political, and cultural differences that exist among the British, Chinese, Japanese, German and USA, the view that women are less likely than their male counterparts to possess the required management characteristics, is common among male management students worldwide. This kind of prejudice against women as leaders, causes
unwilling followership, which ironically involves other women. The manager has to contend with this amidst government policies of changing the gender ratios in the workplace, including projects.

7.7 A CONCEPTUAL FRAMEWORK FOR ACTION

Project leadership takes place amidst this mix of philosophy, theories, models, beliefs, diversity of gender (or racism in the South African context), self-hate and expectations. This is complicated by the absence of authority, the political nature of projects, and conflict characteristic of project management. Every project is different from the one before, thereby increasing the failure rate where time, scope, budget and quality are critical for the success of the project. It is important to state also that the project leader does well to distinguish between project management success, and project success. The high failure rate in both project management and project success necessitates a look at management and leadership models specific to projects as a unique endeavour.

7.7.1 Purpose of constructing a new model

The central research question is what critical core competencies are required for effective project leadership, given the unique nature of projects? The theoretical point of departure is the uniqueness of project management as informed by the authority-gap, the demand on the project manager to meet time, budget, scope and quality expectations. It is clear that leadership phenomena can be viewed from different angles; the eight groups above do not include all the theories. The grouped theories as stated here are sufficiently comprehensive to inform what the other theories pronounce on. With the growth in population, change in the levels of information, the emergence of employee rights, increase in the labour union activities, and the increase in the type and levels of technology have all compounded the leadership task. The new focus on followership to interpret effective leadership and the implicit theories of leadership and followership has changed the leadership landscape. The models in use to date have to be adjusted to be relevant to the current social dynamics. Drastic changes in the work environment, the current move towards projectification in organisations have led to a need for a new definition of the worker. This is evidenced by the current situation where there is no particularly well accepted theory of leadership on the basis of which people may create leadership.
examples. The best approach would presumably be to take the best of the old
theories and combine these with new philosophies relevant to the diversity of the
current society. Cognisance should be taken of findings emanating from studies in
psychology and sociology in relation to human behaviour with specific emphasis on
putting together management and leadership. The model being developed seeks to
demonstrate that all the elements of leadership are highly interdependent and
inseparable. Specifically in terms of project management, given the unique nature of
the discipline and the unprecedented demand created by an increase in the use of
management-by-projects instead of traditional management systems.

7.7.2 Theories to guide new model development
The unique nature of a project brings significant levels of uncertainty and the project
leader needs to possess a high level of emotional intelligence as a primary
requirement. Management of change needs an understanding of one’s own
emotions as well as that of other participants to avoid conflict that could jeopardise
the success of any project implementation process. The stakeholders are critical
elements of effective leadership, thus a good working relationship needs to be
nurtured, the project manager must realise the importance of politics and political
alignment in project execution. It is important for the project manager to approach
the project holistically to determine and eliminate factors that could have a negative
influence on the project’s success. It should be stated here that all the above
theories of management and leadership are currently in operation in many different
forms. Although there has been much research carried out on leadership, little is
done in the classrooms to teach effective leadership. The traits theory is evident
when new students to a class, not knowing each other, will choose a class
representative within the first or second lecture. This indicates that there is
recognition of certain features that may translate into good leadership. The
bureaucratic structure and labour specialisation are common phenomena in all
organisations today. The factors that influence the project environment can be
clustered into fifteen different groups listed in Table 7.4 below.

<table>
<thead>
<tr>
<th>Table 7.5: Factors impacting on the project environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor</td>
</tr>
<tr>
<td>Resources (human)</td>
</tr>
</tbody>
</table>
education, and prospects.

### Resources (material)
A matrix structure causes an authority gap. Sourcing the materials through the departmental heads becomes a problem.

### Type of project
The type and size of the project impacts on human and material resources and the top management interest is critical.

### Diversity
Diversity at the workplace; different age groups, levels of education, races in the workforce in South Africa.

### Technology in use
The use of technology and its effects on the number of employees, type of skills etc., and response from the unions.

### Culture and practice
Internal culture, individual cultural differences, management of culture, ethnocentrism, self-hate amongst the disadvantaged, resentment and culture conflicts

### Managerial competencies
Emotional intelligence, leadership styles, soft skills and planning abilities, knowledge areas, team management abilities

### Stakeholder interest
Customer expectations, top management expectations, the government laws, community and unions.

### Environment
Internal environment; support for the project, preparedness for work, work ethics and remuneration

### Information gathering
Source information from different project sections, coordinate the information and integrate the project planning process.

### Self confidence
Belief in one’s ability to perform is critical for effective leadership; it enables assertiveness and strengthens in the face of pressure and problems.

### Conscience
A leader needs to be able to identify pending problems, understand the feelings of the other project workers, and communicate effectively.

### Influence skill
Influence is the ability to make people support you, work gets done by people, and the people need to be influenced positively to be effective.

### Teamwork
Ability to form and work with groups is critical, need for ability to enlist active involvement and group facilitation.

### Political
Internal politics; control of resources, coalition, negotiation and compromises. External; legislation, consumerism, unionism, and laws governing operations.

(Source: Researcher’s own construct)
The model of the study is informed by the circumstances under which the project manager finds himself or herself. The type of human resources in the project, their maturity levels, qualification, gender composition, congruency with the type of leadership and the nature of the product. Too often the gender, the race of the project manager and the racial composition of the subordinates are also influencing factors. There is a relationship between the size of the project and the level of involvement by senior management. The organisational structure and the position of the project manager in the structure impacts on the type of power the project practitioner will have. The type of power, given the competency of the manager will inform the leadership style within the organisational culture.

7.7.3 First element of new model (type of project)

Muller and Turner (2007:21-31) acknowledged that building from the behavioural, contingency, visionary, emotional intelligence and the competency schools of leadership, it is clear that the leadership style influences the performance of the subordinates. Project management literature excludes the impact of the project manager, but the new understanding of what constitutes project success and project management success confirms the importance of the manager and the styles used in projects (Judge & Muller 2005:19-31). Further studies with regard to the effect of leadership on project success confirmed that the type of project, the size and the stage in the life cycle of a project needed different leadership approaches (Crawford 2005:7-16).

7.7.4 Second element of new model (authority gap)

The power paradigm in project leadership is complicated by the positioning of a project leader without direct authority over subordinates. Leadership styles and competency requirements are closely associated with power distribution, the exercise of the power, and the political manoeuvring that ensues from such a structure (Liu, Fellows & Fang 2003:819-829). The matrix structure is functional because it is efficient, has a strong project focus, and flexible with the ability of seconded subordinates to return to their departments when the project is completed (Larson & Gray 2011:76). It however has serious weaknesses that impact negatively on the functions of the project leader within the organisation, these are: it is characterised by conflicts due to dual loyalty, fighting over resources (between the project leader and departmental heads), it violates the management principle of unity.
of command resulting in the disempowerment of the project manager, and the bureaucratic structures cause serious delays in the decision making processes.

7.7.5 The proposed new model

Prior to the construction of the competency model, it is necessary to diagrammatically show the conditions under which the project manager operates. Experience in project management has shown that the conditions, under which a project leader works, are unique, strenuous and challenging. The project manager will spend 70-80% of the time resolving conflicts, communicating or working on the rectification of operations done incorrectly. Critical to this function by the project leader would be the culture of the organisation in the context of the diverse nature of the South African workplace. Culture sets the organisation to be different from other organisations, and it therefore has a different impact on productivity from one organisation to another. There are ten primary characteristics which define the culture of an organisation:

- (e) The extent to which members identify with the organisation
- (f) The nature of teams and how they are managed
- (g) The management’s focus on the importance of employees
- (h) The nature of conflicts and tolerance of diversity
- (i) Willingness of management to accept innovations
- (j) The extent to which the organisation is integrated
- (k) The nature and extent of control from top management
- (l) The type of skill required and the technology used
- (m) The nature of the tasks and the requisite skills required

The internal environment is the micro-environment which is largely within the management’s control. The way the senior management delegates responsibilities and power, determines the political and cultural climate that prevails in the enterprise. The external factors are beyond managerial control, but the organisation can influence them.

There is a relationship between the external environment and the performance of a project and the project leadership. In other words the top management (the type of leaders, the racial composition and the level of interest in the project), the organisation (culture, climate and resources) and the reality on the ground will influence the performance.
Before finalising the construction of the new model, it is important that the environment and its elements that affect the project practitioner be discussed briefly. These are top management, organisation, type of project, external and internal conditions, the project manager’s personal variables, the type of followers and their expectations, and the reality at operational level.

(a) **Top management:** strategic leadership may prove to be one of the most critical issues that face organisations in general (Ireland & Hitt 2005:63-77). Without strategic leadership it may be impossible for a firm to perform satisfactorily in this ever changing business landscape. Top management create the environment in which business is done, this impacts the performance of all individuals in an organisation.

(b) **Organisation:** the organisation consists of people who work in it, and the assets that it own, are largely decided on by top management. The culture of the organisation is a reflection of the top management’s view of how business should be done. The organisational structure and culture created will impact on the behaviours of the subordinates, including the project manager.

(c) **Type of project:** Muller and Turner (2007:21-32) posited that the project manager’s style of leadership and overall performance differ from project to project, and project size to project size. There is therefore a relationship between the type and size of the project and the competencies required for strategic execution of the project.

(d) **External conditions:** numerous environmental factors, political, economic, social, technological, international and environmental (PEST) affect the organisational functioning positively or negatively. The organisation is influenced by these factors, and too often the project manager may not be high-ranking enough to influence the course of events.

(e) **Internal conditions:** are what management is able to control, and these are the human resources, the capital resources, and development of competencies that may lead the organisation to a level of competitive advantage, culture of the organisation, work ethics in the organisation, diversity of management, racial and gender composition and the general skills level in the firm.
(f) **The project manager's personal variables:** every individual has unique peculiarities; variables of which will be used in the project leadership. Most may also be shaped by the organisational structure, culture, the type and size of the project, the complexity of the project. Personal power and power base, values, self-confidence and personality, known relevant technical skills, age and experience, political connections, negotiating skills, racial or gender group, culture and upbringing, implicit theories, emotional intelligence and alternatives.

(g) **Type of followers and their expectations:** followers are often not considered in the study. Followers have expectations from their leaders, possibly in the form of reciprocal favours for good work relations, being treated with dignity and respect, allowed an opportunity to develop, rewards for good performance, or they may expect protection from loss of their jobs. The task at hand and the level of skills of the followers are equally critical in deciding on the leadership skills required.

(h) **The reality at operational level:** the project leader is dealing with diverse people in many respects, different levels of education, cultural values, racial, gender and age differences. In addition, there are issues emanating from the top management, shortages of resources, interference with implementation, and too often unrealistic expectations. There will furthermore be conflicts to be resolved, progress meetings, communication, unmet deadlines, late stock delivery, cost overruns, technical hitches and problematic subcontracts etc.

(i) **Authority gap:** the absence of direct project manager authority over workmates, specifically team members who may be at the same level or senior to the project manager. Even those below the project manager have dual loyalty to their department head and to the project leader where they are seconded to. The project manager may not hire, fire or decide on their existence in the organisation. The ability to function is derived from the extent of authority allowed the manager, ability to network, closeness to senior management, political connections, negotiating skills or the ability to be persuasive.

Further to the preceding literature review, a conceptual framework is developed to explain the circumstances under which project managers work. Without giving a
detailed list of all competencies and relationships prevailing in contemporary literature, the researcher presents the theory around project leadership in the firms diagrammatically in Figure 1.1. The diagram illustrates the conceptual and theoretical framework of project leadership, indicating some of the critical variables.

7.8 THE NEW LEADERSHIP COMPETENCY MODEL

Based on the foregoing discussion, it is clear that the project manager works under unpredictable and unfriendly conditions. These critical areas of competency requirements were used to put together the new model for effective project execution. Cognisance is taken of the different situations and environments for different projects, the difference in the type of the followers and the peers that work with the project manager, the different levels of interest from both internal and external stakeholders, the political ramifications and the quest for control, the requirements for the different sizes and nature of the projects, the matrix structure and the ensuing authority gap, and the legislation and labour relations acts that govern the work place.

The field of project management is wide, ever since the definition included other none engineering operations as projects. This study sought to establish generic competencies inclusive of all types, sizes, forms and complexities of projects which would apply in the generic sense to all projects. All this information (above) and the many years working experience were put together in the formulation of the conceptual model. Therefore, the leader personality model in Figure 7.1 below is a culmination and summarisation of all the conditions and factors as alluded to in the foregoing literature review.

Figure 7.1: The conceptual model for effective project leadership
The model of the study is based on the understanding that, though hard skills may be important in certain projects, the execution of the project is done by human beings. Human beings have feelings, get motivated or demotivated, it is they that get the work done, and not the know-how. Kumar and Hsiao (2007:18 - 23) reported that there is a high failure rate in engineering projects with astronomical cost overruns in nearly 80% of these projects. None of these projects are run by people who do not have engineering qualifications or the required technical skills. De Grip and Smits (2012:583 - 597) report the need for the introduction of soft skills (courses in management and related studies) to engineering students after the realisation that technical expertise is a small component of the project processes. Mohan, Merle, Jackson, Lannin and Nair (2010:562 - 571) concur with the findings of their counterparts and submit that the need for soft skills should be over emphasised if the
technically literate ‘gurus’ will help curb the project failure rate in engineering disciplines.

According to Alam, Gale, Brown and Khan (2010:495 - 516) technical knowledge is necessary to give direction and allow for proper analysis of the type of deliverables needed, but the process to the deliverables is a human function for which soft skills are considered critical. This study set to identify these critical must-have soft skills which are generic requirements for projects. Jowah (2012:1097 - 1106) records that close on 75% of the time, a project leader in a matrix organisation does not have full control over the running of the project.

**Significance of variables in the model**

These variables have been considered to have tremendous effect in project management, this is precisely why they have been included in the study as critical elements of effective project leadership.

**Communication;** Turner and Müller (2004:327 - 336) give pre-eminence to communication as pivotal to all the processes that take place in a project. Communication can be verbal, oral, informal and or informal. What is important is whether the correct message has been passed on to the relevant person, in the relevant format, and have been understood in the way it was intended. Project communication - critically links people, ideas and information to achieve success, it entails communication and distribution plans, performance evaluation reporting, and administrative closure.

**Personality;** of an individual may be interpreted in the form of self-confidence, intelligence, cognitive abilities and possible the readiness to interact. The extent to which a person is agreeable and how focused they are on their set objectives may also add to their positive side of the personality (Himmerich, 2007, 17 - 20). These, and many other attributes will make the personality of a person critical for effective leadership.

**Networking;** Brown and Hyer (2010:219) consider networking as a critical tool for effective project leadership, both within the team and with stakeholders to create a good understanding that will promote a good support structure. They learn emphasis on another secondary but critical benefit of networking, that of learning and passing of knowledge from person to person effectively. The ability to network is therefore
thought of as a positive sign of effective project leadership in that it creates an environment of cooperation amongst the participants.

**Interpersonal relations**: primarily a relationship between two or more people and is based on mutual understanding, too often with clearly defined common goals and objectives. These relationships are formed in social and or cultural contexts and other influences (Brown and Hyer, 2010:214). Given the nature of project management in particular, and leadership in general, good relationships with workmates enables the leader to gain loyalty and support.

**Knowledge areas**: nine knowledge areas have been identified for project management, and these range from time management, cost management, risk management, purchasing management, quality management, integration management, scope management, human resource management and communication management (Burke, 2007:24).

**Forms of power**: power is the ability to influence (Bargrain, Cunningham, Potgieter and Viedge, 2010:199) and this is portrayed in different forms, amongst the powers used by leaders are referent, expertise, legitimate power and many others. Of particular interest may be personal power specifically coming from the personality of the individual leader themselves.

**Emotional intelligence** is another critical element of leadership which relates specifically to the one’s ability to know and understand their emotions and well as those of other people (Burke and Barron, 2007:248). It is associated with self-awareness, self-management, social awareness and good relationship management. These attributes are expected to be of critical importance in project management due to high levels of uncertainty in project leadership.

**Authority gap**: believed primarily to be caused by the matrix structure, the authority creates a dilemma for project managers (Jowah, 2012, 1097 - 1106). The gap is a by-product of dual reporting system and loyalty complicated by the temporary nature of projects, be they stand-alone or embedded. And as recorded by Gray and Larson (2008:145), these become breeding ground for project politics. An effective project leader will find ways of reducing the effect of the authority gap by using other soft skills in project leadership.

The current project management knowledge is a practitioner-driven theory emerging from practical past and present experiences. As a fast developing profession having
passed through years of transformation, project management now encompasses many aspects of our life, and the demand for project-based approaches to operations are increasing. There is a movement from the traditional project management practice to strategic project leadership approach given the unprecedented demand for the use of projects. Strategic issues to be addressed should relate to the key strategic components of project success, for instance, emotional intelligence of the leadership, the cultural practices, implicit nature of leadership given the racial dynamics and diversity issues in the South African context. In the same way, project success is a process with many components which when put together correctly, should result in a successful project undertaking. The culture of the people is of critical importance as it impacts on their work ethics and this relates to their performance and expectations.

The effectiveness of the project manager is judged based on how a person relates and balances these challenges and seek to make the best leadership impact in the presence of an authority-gap. Little focus was previously put on the leadership effect in project execution, it is become more evident that project success cannot be attained by a technical skill set alone (Gillard, 2009:723 - 729). Project leadership, which is preferable to project management, demands an unparalleled communication paradigm by any other forms of management. Excellent interpersonal (soft) skills are indispensible in leadership since leadership involves influencing people to work towards attainment of objectives.

7.9 CONCLUSION

In this chapter the conceptual framework and conceptual model was as well as the history of project management. The study focussed on theoretical perspectives of
the conceptual framework and leadership theories were briefly explained. The chapter concludes with a discussion of the purpose of the new model, the theories that guided the construction of the new model.
8.1 INTRODUCTION

Research is a well-organised and objective information gathering process intended to provide specific information, knowledge or data about specific occurrences, causal factors or relationships between variables or a phenomenon (Jowah 2011:6). Research is therefore an enquiry for knowledge, the purpose of which is to logically and systematically discover new facts or verify the existing facts. Research is broadly classified into qualitative and quantitative, or pure and applied research. Qualitative research is subjective and explorative in nature and more of an insider’s view of human behaviour under study. There are no controls, as the population is dynamic, changing with circumstances, conditions or locations. Small samples provide for a holistic understanding of a phenomenon, but may not be easy to repeat with the same results. Qualitative research, though previously discounted because of its subjectivity, has become more regular and is accepted across the social sciences.

The contemporary practice in many surveys is to use both quantitative and qualitative research simultaneously to complement each other. On the other hand, quantitative research focuses on quantifiable objective data based on a hypothesis to be proven. The population under study may be controllable and set standards can be used to measure the correctness of the findings. With quantitative research, much emphasis is placed on the reliability and validity of the results. Using the other classification method, pure research does not have practical application beyond adding to existing knowledge. In contrast, applied research, is problem-focused and is used to solve known and existing problems by trying to identify causal factors, the relationships, or solutions to existing phenomena.

8.2 PURPOSE OF THE STUDY

The current study seeks to add to current knowledge as well as provide solutions to the common problem of high project failure rates found across projects of different types. The human element of leadership is a common factor in all projects, and this is the focus of the study. Substantial progress has been made in developing tools and techniques for project management, but the project failure rate remains significantly high (Robertson & Williams 2006:55-71). While there are many possible causes of failure of a project, it is understandable that ineffective leadership leads to project management failure even if there may be project success. Admittedly the
extent to which leadership affects project success is not clear, but literature on management and leadership in general clearly states the relationship between organisational performances as a result of good leadership (Ellemers, DeGilder & Haslam 2004:459-478).

Matta and Ashkenas (2003:1-9) conceded that big projects fail at an astonishing rate; whether it is major technology installations, post-merger integrations, or new growth strategies, these efforts consume significant amounts of resources over time. Yet, as study after study has shown, they frequently deliver disappointing returns – by some estimates, in fact, well over half the time. Furthermore, the toll they take is not just financial, thus, these failures demoralise employees who have laboured diligently to complete their share of the work. One middle manager at a top pharmaceutical company said, ‘I have been on dozens of task teams in my career, and I’ve never actually seen one that produced a result.’ And so the list of the failures continues. Chua and Lam (2005:6-17) observed that most projects fail because of any of the following four reasons or causes, namely: technology, culture, content, and project management. The findings indicate that there is a human element in the process of failure or success of projects as the projects are conceptualised and implemented by human beings.

Turner and Muller (2005:49-61) expressed their surprise that project management literature does not specifically acknowledge the role of a project leader as a success factor. They acknowledged the importance of organisational leadership as pivotal to the success of any undertaking. Considering the large differences between the leadership requirements of projects and that of traditional operations, it is important to identify those core competencies that have specific relevance in the context of project management. Westerveld (2003:411-418) asserted that project organisations differ fundamentally from traditional, functionally organised and permanent organisations. Projects are unique and once-off not repeatable undertakings with a clearly defined start and finish date. Controlling in permanent organisations is done through the continuity of the organisation and its operations with the added benefit of authority by the leader (Arvidson 2009:97-107).

The primary purpose of this study therefore, is to identify critical generic core project leadership competencies necessary for strategic project leadership. It is critical that
the knowledge on how to effectively lead in projects correspond to the increase in management-by-projects in the business world with the simultaneous increase in the complexity of the projects themselves (Söderlund 2004:183-191). It is necessary to indicate that the South African project context is unique in that the projects are operated in the aftermath of severe human rights violations for centuries due to apartheid (Bhorat 2004:940-977). Managing diversity in a highly politically charged environment compounded by the traditional problems of the management of projects needs extra competencies to cope and be successful, for this reason this study was conducted.

8.2.1 Objectives of the research study

The primary objective of this study was derived from the purpose for which this research was conducted, i.e. to gain a better understanding of what is required from a project leader in terms of competencies in the complex South African, racially and politically charged employment environment.

The primary objective of this research is therefore, to add to the current body of knowledge, through the identification of critical core competencies indispensable for effective project management. To achieve this primary objective the following secondary objectives will constitute part of the study.

8.2.2 Secondary objectives

The secondary objectives of this study are:

- To establish, through research, the generic competencies needed for effective project management;
- To establish through the survey, indispensible, critical core competencies for successful project leadership;
- To identify from the empirical research, leadership styles that may be best suited for effective project management; and
- To formulate strategies for implementation by project managers.

8.2.3 The research questions

The following research questions are derived from the preceding literature and the problem statement:

- What competencies are generic for all forms of management?
• What competencies are specific to project management and leadership?
• What leadership styles are specific to project management and leadership?
• What are the generic core competencies for effective project management?

8.3 RESEARCH HYPOTHESES

Hypotheses are tentative assumptions of a relationship or relationships between two or more examinable variables. These assumptions are to be put into a format that enables statistical testing of it by measuring the relationship between the variables. The following hypotheses are based on information from the preceding literature review. There are three sets of directional hypotheses discussed below.

8.3.1 First set of hypotheses:

H1.1 There is a relationship between communication and effective project leadership
H1.2 There is a relationship interpersonal relations and effective project leadership
H1.3 There is a relationship between project requirements and effective leadership
H1.4 There is a relationship between personality and effective project leadership
H1.5 There is a relationship between understanding of knowledge areas and effective leadership
H1.6 There is a relationship between emotional intelligence and effective leadership.
H1.7 There is a relationship between networking and effective project leadership.

8.3.2 Second set of hypotheses

H2.1 There is a relationship between authority-gap and project leader effectiveness.

8.3.3 Third set of hypotheses

H3.1 There is a relationship between the type of power and effective project leadership.
There is a relationship between project management and organisational performance.

There is a relationship between leadership styles and project management.

8.4 RESEARCH DESIGN AND RESEARCH METHODS

The research method and research design are constantly confused and often used interchangeably. However, these two concepts are related but not the same. A research design is the plan of how the researcher intends to go about the research, whereas research methodology comprises the methods used for the research. Table 8.1 makes a comparison between the research design and research methodology.

<table>
<thead>
<tr>
<th>Research design</th>
<th>Research methodology</th>
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<tbody>
<tr>
<td>Answer to question, what is it?</td>
<td>Answers to how does it?</td>
</tr>
<tr>
<td>It looks at the complete product</td>
<td>It discusses how to reach the product</td>
</tr>
<tr>
<td>It paints the complete picture</td>
<td>It appears in parts summing to the whole</td>
</tr>
<tr>
<td>Is one unit inseparable</td>
<td>Shows the detailed steps to be followed</td>
</tr>
</tbody>
</table>

(Source: Jowah, 2011:73)

These phrases are used interchangeably in research literature, but it is important that the difference be made known. The research methodology is derived from the stipulates of the research design, in a sense the research methodology is a part or portion of the research design. It is the research design in operation seeking to implement correctly the master plan to meet the desired objectives.

8.4.1 Research method

The primary goal of establishing a research process is to provide knowledge or increase on the understanding of a subject or phenomenon. The three main methods
used are exploratory research (to identify or define a problem); constructive research (that helps with the testing of theories and suggestions of solutions to problems); and empirical research (which tests the feasibility by the use of empirical tests). The differences between these methods may be very difficult to state, but there are instances where one or two methods may be more appropriate than the others.

A research method is a means by which a research is executed, or a way of collecting information required for the on-going survey, the how part of the research project (Jowah 2011:66). Together with the methods listed above, these methods may take the form of exploratory research, ex post facto research, correlation research, descriptive research, testing research, case studies, socio-metric research, instrumental-nomological research or interpretative-theoretical research. Whilst this research is an academic exercise, it may also be considered to qualify as action research, as this calls for solutions to practical problems encountered by project leaders. The findings can be implemented by way of training the leaders into using the competencies necessary for effective strategic project leadership. This is essentially a problem-aimed research, focusing on a particular situation in the practice of project execution. The outcome of the research may be implemented immediately by practitioners. In some sense, this research may require aspects of historical research to investigate previous practices in project leadership to enable the establishment of generalisations on what the possible causes of high project failures may be.

This aspect is deliberately excluded as the solution to the problem may be found in understanding the expectations to be adhered to without dwelling much on the past, which is not standard as it varies from leader to leader and project to project. This method would have been ideal for a case study over a period, where historical information could be available. Another method that could be used, which fits correctly with the intentions of the study, is the descriptive research method. This research is primarily concerned with describing the current situation in project leadership, albeit based on opinions of the practitioners at different levels and in different capacities. This method will enable the writing of a written report on observations and the description of the phenomenon as experienced by the practitioners.
The most common information gathering methods are literature studies, interviews with individuals or focus groups, telephone surveys, and internet surveys. Though the use of e-mails, the internet, and other non-personal methods are cheaper in gathering information, it was decided that given the nature of this research, there was a need for personal interviews to increase the response rate, answer questions where clarity was needed, and to give general guidance and to accelerate the rate of collection of the responses. A focus group was used in the preliminary stages to assist with opinions, attitudes which help in the construction of the research instrument, and the questionnaire. The decision on the research methods to be used led to the choice of the research design.

8.4.2 Research design

There are numerous definitions that have been advanced to explain the research design, however, none of them encapsulates all the aspects of research design in one definition. For the purposes of this survey, a research design is a plan or blueprint explaining how the researcher intends to conduct the research (Mouton 2008:55). The plan or design identifies the features or the structure as envisaged by the researcher - it describes what is to be done in technical terms. The design provides information on the tasks, sample selection, sample size, data collection method, instrumentation, procedures and ethical requirements (Blumberg 2008:69). The research design helps in the planning and structuring of the research study in a way that may be financially viable, and still maximise the validity of the research results. The different types of research design are illustrated in Figure 8.1 below.

Figure 8.1: A typology of research design types

<table>
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<th>TYPE OF STUDY</th>
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<tbody>
<tr>
<td>EMPIRICAL STUDIES</td>
</tr>
<tr>
<td>NON-EMPIRICAL STUDIES</td>
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Philosophical analysis, conceptual analysis, theory building, literature reviews
A combination of the research design and the research method influences the outcome of the research. There needs to be congruence between the design and the method to come up with valid findings. Since the research was largely descriptive, and partly exploratory, a combination of methods was used, which also influenced the choice of the design.

There are two major research designs from which a decision was made, these are; qualitative research and quantitative research. The decision was made to use a combined approach given the nature of the questions that were asked, the kind of information that was required, and the research methods selected.

(a) **Qualitative research**

Qualitative research is commonly used to study the behaviour of human beings and the reasons for their behaviour. The research asked open ended (broad) questions which were used to create the word-type data needed to describe a population without quantifying the variables or establish relationships. It does not test hypotheses and is limited in that the sample size is generally small and the subject matter restricted. It is ideal for exploratory research leading to future quantitative research.
(b) Quantitative research

Quantitative research focuses on the quantifiable properties of an empirical research to try and explain relationships of phenomena. This method uses statistical methods, and can be correlational, experimental, or descriptive surveys. The method used in this study was the descriptive survey method since there was a need to establish the existence of causal relationships between the variables under study.

8.4.3 Methods used for literature review

The source of literature review comprises the works of accredited scholars published in journals, textbooks, conference papers and doctoral theses. From these publications ideas, information, data, and valuable inputs were sourced which assisted in the formulation of the research questions and the writing of the literature review section of this thesis. Admittedly, some publications contradicted each other and created more research questions and opportunities for further studies. The review of the literature facilitated establishing the context of the problem and research topic; understanding the structure of the problem; clarifying the variables; understanding different theories applied to the problem; and informed on which research designs were best suited to provide a valid understanding of the strategic issues around effective project leadership.

8.4.4 The survey

Kypri, Gallagher and Cashell-Smith (2004:45-53) recommended the use of surveys as the most effective way to collect data and information in social sciences. The study was conducted using the survey method with the aid of a questionnaire (the research instrument). The data was collected from a randomly selected sample by part-time project management students who work for project firms. The use of the survey method was based on the theory that samples from the population if correctly chosen, will provide the same information as can be provided by a census. The survey method was considered ideal for various reasons, namely:

- direct contact with people who experience project leadership problems;
- hearing directly from the practitioners of their limitations in the firms;
• the efficiency of gathering information about the projects;
• reduce time and money as projects have a start and end date and cost limits;
• ensure the completion of the information gathering instrument;
• increase in the response rates through personal interviews; and
• it allows many variables and hypotheses to be tested.

The instrument solicited information on the project execution variables as they apply in project management, which is different from traditional management. Some of the critical areas around which information was gathered are: the degree of authority and how the authority gap is overcome, the behavioural patterns that constitute good project leadership, emotional intelligence and the use of negotiation skills, reciprocal favours, and personality traits that assist in leading projects effectively.

8.4.5 Characteristics of the population
The survey population comprised active project managers in the Cape Town Metropole. Even though the intention was not to survey the Cape Town population exclusively, it was for economic reasons, and for the purposes of convenience readily available. This population has its own racial complexities that may not be representative of the South African population in the true sense. There are four major racial groupings found in the workplace, from a community distribution of 1:12:26:31; Indians, whites, blacks and coloureds respectively. The racial dynamics have a very strong tilt towards more white male managers (67%+) relative to the other races and gender. This, given the history of the country, creates a bias toward white power and leadership styles that may simply be a continuation of the apartheid system. The population’s racial power distances may therefore not be a true reflection of how a project leader may be affected by the authority gap. Blacks occupy the lowest ranks generally with coloureds in between mostly and the whites (with a sprinkling of blacks and coloureds) predominantly deciding the destiny of the organisation.

8.5 TARGET POPULATION
Determination and description of the population to be studied is the first step in the implementation of the research design. Population is defined differently in the research literature and in Statistics in general. Mason and Lind (1996:8) defined population as a collection of all possible individuals, objects, or measurements of
interest. This is the aggregate of all the elements with similar characteristics which, together comprise the universe from which relationships are to be drawn. The population targeted in this study comprises all the project team members and other participants in project execution in the Cape Peninsula. The area and extent of the spread of the population was deliberately allowed to provide reliable information on generic project leadership. For this purpose the project was defined as a unique undertaking with a given start date and end date limited by a financial budget with clearly specified quality expectations. This population was understood in terms of the different types of industries and projects, the multi-cultural nature of the businesses in South Africa, the diverse nature (race, gender and level of education) of the workforce, and the pressurised environment reminiscent of projects. The researcher considered the population under study to be appropriate for the purposes of this research considering the research design that was chosen.

8.5.1 Types of industries
The type of industry and consequently the type of project is of particular importance in this study. Construction and/or engineering projects will have different technical demands than events management and related projects. Technical projects have very specific technical requirements with particular complexities (dependent on the type and size of the project) compared to social projects. Engineering based projects are more structured and the system fairly well defined and developed. Consequently, studying of project leadership in a traditionally project-type environment enables the most ideal situation for study. The survey involved largely typical project type engineering related organisations, where the project managers serve in matrix structures. A small number of the respondents were from events management and community projects within the Cape Peninsula.

8.5.2 Types of people
The survey population has some unique characteristics, in that the people managing and being managed are of a diverse nature with different perspectives on their history. The one group having been the beneficiaries of apartheid still maintain custody of capital to date. The majority of the workforce comes from the disadvantaged sector, largely not as educated and not as well placed as their white counterparts. In rare cases would there be a black manager in the largely white
owned businesses, and they probably might not have as much power as their white counterparts. The black manager would therefore largely be affirmative action appointments. Even if they qualify, there is still hanging over their heads a degree of ‘reciprocal favour’ on their part towards the owners of capital. This has an impact on the behaviour of the manager, considering the economic condition of most blacks as evidenced by the high rate of unemployment amongst the blacks. Consequently such project leaders may not freely express themselves or show clearly their leadership style as they deem it fit.

8.5.3 The multi-cultural profile of respondents

The multi-cultural profile of the workforce creates another dilemma wherein the project managers need to balance the cultural diversity with their own personal culture and its influence on their leadership style. The cultural diversity in the workplace therefore creates an environment where follower-expectations from their implicit theories of both leadership and theory may not be expressed. The project leader still has to perform within these serious limitations without being everything to everyone and yet seeking to make everyone produce to the best of their ability. The increase in the number of women in both follower and leader positions complicates the project environment, adding another dimension to the leadership problem. The survey was conducted in an environment with people who do not fully trust each other, but work together by merely tolerating each other. The racial demography by ratio in the Cape Town metropolis is; 1:12:26:31 for Indians, whites, blacks and coloureds respectively.

8.5.4 Economic conditions of the workplace

The per capita income amongst the three major racial groupings in Cape Town was recorded by Kelvin as being: blacks at R1 600, Coloureds R6 000, Indians R11 000 and whites R19 000. This disparity may have an impact on the way blacks may think about leadership by both their own, or by the whites who occupy the role-model position. The black managers may also follow the pattern of leadership used by the white counterparts, as doing differently may be considered to be incompetent. In addition, the organisational climate, the politics within and the culture have a strong bearing on the way the employees perceive leadership and how they want to be led. The presence of strong unions gives the workers a degree of self-confidence, which
may assist them to talk openly about how they want to be led. The current levels of unemployment and constant threats of retrenchment and the unavailability of quick-alternative jobs weakens the workers and makes them accept any form of leadership.

8.6 SAMPLING

A sample is a small representative portion of the whole population which is studied to make inferences on the whole population. Unlike the census, sampling selects and studies a small portion of the population and draws conclusions or makes generalisations based on observations from the sample. Sampling is done for many reasons, some of which are: to limit the destructive nature of certain tests, it may be physically impossible to study every item in the population, the cost may be prohibitive, or it may take too much time before the results are known (Rao, 2010:24). However, a correctly chosen representative sample will adequately provide the necessary information for the purposes of decision making. Daniel (2011:96) proposed that sampling passes through six steps: defining the population, identifying the sampling frame, selecting a sampling procedure, determining the sample size, selecting the sample elements, and collecting the data from the designated elements. The steps are illustrated below.

Figure 8.2: The six-step procedure for drawing a sample
Step 1. Define the population – the population was defined as all individuals working in a project environment who are affected directly by the project leadership and the impact of leadership on project success. Such people should be able to understand what constitutes project success, and what is required for effective project leadership.

Step 2. Identify the sampling frame – the sample frame is the list of all elements from which the actual sample will be drawn. In this study the sample frame comprised the list of individuals who qualify for the sampling, these are, the project, the project team members, and workers involved in operations during project execution.

Step 3. Select a sampling procedure – the sampling procedure used was a mixture of convenience and probability random sampling. Part-time project management students who work in project organisations were tasked to randomly select a minimum of five people each in their respective organisations, ranging from the

(Source: Adapted from Churchill & Iacobucci 2002:449)
project managers, the project team members, to the people involved in operations. These respondents comprised the key personnel involved in project execution.

**Step 4.** Determine the sample size – Burns and Bush (2000:423) suggested five possible approaches that can be used to determine the ideal size for a research sample. These are: the arbitrary approach, conventional approach, the cost basis approach, statistical analysis approach, and confidence approach. The population variance of the project practitioners was not known and none of the above approaches was used exclusively. The approach used had more to do with convenience and judgement, but it met the requirements of the rest of the suggested approaches. The size of the sample was arbitrary, based on the availability of project practitioners who contacted other practitioners in their work environment. A total number of 150 part-time B Tech. students in project management were requested to each interview 5 practitioners in their work places. There was no mathematical formula used to decide on the size of the sample, advantage was taken of the availability of interviewers who offered to assist by collecting data from their work places.

**Step 5.** Select the sample elements – these are essentially the properties of the sample, which in this case were identified as the positions that needed to be occupied by the interviewees. The interviewees were specifically people who are directly involved in project implementation (team members and operations staff), and they had to be people who are affected by the leadership of a project. These respondents were able to tell the impact of leadership styles on effective project management.

**Step 6.** Collect the data from the designated elements – the data was collected from the elements by use of structured questionnaires with sections of open ended questions to be answered by the respondents.

8.6.1 Different methods of sampling
There are numerous sampling methods that are used in research; this research used a type of convenience sampling in that the students used for the purpose were doing their final year degree program in project management. The admission requirement into this program was that students be employed in a project environment. It was therefore convenient to use these students, who already worked in the project environment, and who were studying to be project administrators and managers, to conduct the survey in their places of work. The students (interviewers) were requested to select randomly the interviewees in the different workplaces where they worked. Each student was requested to do a minimum of 5 questionnaires; no marks were awarded to the students for the exercise.

8.6.2 The sampling frame

In a sense the students provided the required sampling frame, because they had the list of companies or organisations (where they worked), from which the target population was extracted by them. Because the students themselves represented their organisations, there was no omission of some of the critical elements for the research, except for project based companies that did not have any employees studying for the program. The random sampling therefore was based on the random selection of students at admission, which provided the sampling frame. The sampling frame error was minimised since the research involved specific students, studying towards a project management degree, who had direct contact with people affected by leadership styles and systems.

8.6.3 Sample-research-fit for the study

Projects are undertakings in organisations, and like all organisations they are affected by other factors common in the business environment. Though to varying degrees, all projects have specific features which are not common to other operations, e.g. the matrix structure, the absence of authority, the temporal nature, and the demand for a specific leadership style. The interviewees for this research had to be people who fit in correctly with the definition of projects, and had the special need for specialised forms of leadership. The use of the biography in the questionnaire was intended to help in the screening out of any such respondents who may not fit correctly into the project structure as defined. The research
instrument was designed specifically to select and analyse data exclusively from project structures.

8.6.4 Sample size and demographic profile of the respondents

A total of 450 questionnaires were administered, and a total of 441 questionnaires (98%) were usable. All usable questionnaires were processed as per the details provided below including cleaning, editing, coding and other processes as was necessary. The cleaning and editing process was undertaken to make sure that the data and information on the questionnaires was accurate, consistent, and uniform. All the questionnaires and the individual questions were coded to facilitate easy identification during the data capturing process. Table 8.2 indicates that 36% of the respondents were women against 64% males, the larger part of the population was in the age group 30 – 39 years (65%) followed by the age group 40 – 49 years with 24%, and the rest was in the 50 years and above age group. Of all the people interviewed 33% of them were project team members, 29% were operational staff and only 24% were project managers themselves. Table 8.2 shows that the majority of the respondents (53%) had a tenure of less than 5 years whilst 28% of the respondents had been in their employment for 6 – 10 years, and only 11% of the respondents have work in the organisations for 11 – 15 years. Table 8.2 indicates that only a mere 8% of the respondents have worked for 16 years and above in for organisations. Table 8.2 indicates that in the project industry construction attracted the largest response from a single industry at 21%, followed by IT (8%) and Events at 6% respectively. The majority of the respondents (65%) is involved in other forms of projects including amongst others research and development, non-governmental community projects, product innovation and other embedded projects in large companies. Table 8.2 below provides the demographic details of the population that was studied.
Table 8.2 Composition of the Respondents in Demographic Terms

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Range</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Female</td>
<td>159</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>282</td>
<td>64</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td></td>
<td><strong>441</strong></td>
<td>100</td>
</tr>
<tr>
<td>Age</td>
<td>30 – 39</td>
<td>287</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>40 – 49</td>
<td>106</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>50 – 59</td>
<td>35</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>60+</td>
<td>13</td>
<td>3</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td></td>
<td><strong>441</strong></td>
<td>100</td>
</tr>
<tr>
<td>Job title</td>
<td>Project Manager</td>
<td>106</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Project Team Member</td>
<td>146</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Operational staff</td>
<td>127</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>62</td>
<td>14</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td></td>
<td><strong>441</strong></td>
<td>100</td>
</tr>
<tr>
<td>Tenure</td>
<td>0 – 5 years</td>
<td>234</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>6 – 10</td>
<td>123</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>11 – 15</td>
<td>49</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>16+</td>
<td>35</td>
<td>8</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td></td>
<td><strong>441</strong></td>
<td>100</td>
</tr>
<tr>
<td>Categories of project</td>
<td>Construction</td>
<td>93</td>
<td>21</td>
</tr>
<tr>
<td>industry</td>
<td>IT</td>
<td>35</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Events</td>
<td>26</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>287</td>
<td>65</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td></td>
<td><strong>441</strong></td>
<td>100</td>
</tr>
</tbody>
</table>

(Source: author’s own construction)

8.7 MEASURING INSTRUMENT

The instrument used for the process was the questionnaire, this instrument passed through certain stages during its development. Initially (before designing the questionnaire) the researcher listed reviews of alternative questions based on the literature review conducted, the research problem as identified earlier and the purpose of the study. Using the guide by Burns and Bush (200:347), the researcher identified and determined the objectives of the study, decided on the data collection methods, started the development and evaluation of the questions, ran a pre-test with a few prospective interviewees, adjusted the questions where necessary, obtained the opinion of a statistician, and started gathering the data required. For the sake of uniformity in the questions, only English was used to avoid interpretation
errors during translation from one language to another (English to Afrikaans or English to Xhosa).

8.7.1 Pre-testing of the questionnaire
To facilitate ease of administration and improve reliability and validity, the questionnaire was pretested at two construction sites in Khayelitsha and Mitchells Plain. This pre-testing was also done with the understanding that a well-constructed and relevant questionnaire will improve the response rate of the survey. Zikmund (2003:215) posited that proper attention to structure, design and format of both the questions and the questionnaire itself improved the response rate. Comments received from the practitioners from the pre-testing sample were incorporated into the questionnaire. Special mention was made of the need to restructure the questions in the last section of the questionnaire on the authority gap. These suggestions from the practitioners together with assistance from the statistician and the supervisors were built into the final questionnaires sent out. The revised instrument therefore improved the acceptability, reliability, and validity of the proposal.

8.7.2 The reliability of instrument used
Reliability is the ability of the instrument to solicit the same answer from the same person if asked differently. It has to do with the clarity of the questions asked and their relevance to the study objectives. If the instrument is not reliable, it may be because the questions are understood differently by people with the same feelings or opinions, meaning therefore that the information gathered by the use of this instrument cannot be reliable. Simply put, any measuring procedure must yield the same results when the trials are repeated. To improve on the reliability of the instrument, the Likert type scale was used with a scoring procedure on 5 whole numbers starting from the least to the most agreeable.

8.7.3 Instrument validity
Validity is the accuracy of the instrument, an instrument can be reliable but not valid for the purpose. Validity is about the exactness or truthfulness of the responses to the questions. In the same measure, a valid instrument should be relevant to the study objectives and should also be in such a way as to extract the truth. The validity of an instrument then is measured by whether or not the
measure accomplishes its claims (Blumberg 2008:313). There are two types of validity (internal and external validity) and each type of validity has its own threats that must be guarded against. Special effort was made to pre-empt any possible validity problems resultant from the way the questionnaire was constructed. The questions were short and to the point, and relevant to the purpose of the study. All leading questions, ambiguous questions, and any forms of bias were removed from the questionnaires before they were administered. This assisted in improving the validity of the instrument, and hence the data collected is considered valid.

8.7.4 The Research Instrument Design

In a quantitative study the first step should be to identify and define research questions which are theoretically and empirically testable. These questions were designed in a way that made it easy for both the researcher and the respondents to understand each other (Saunders et al. 2007:356). All double-meaning or ambiguous questions were corrected to bring the necessary clarity for easy communication and systematic classification for analytical purposes. Colton and Covert (2007:30) proposed that the questionnaire should request for information that will be amenable to organising in a logical, consistent and replicable manner to improve reliability and validity. The questionnaire in this study measures those critical core competencies indispensible in the execution of projects other than the hard skills. The study relates to generic competencies, and hard skills will therefore differ from industry to industry, the soft skills, which are the human elements, on which the questionnaire sought to obtain information from project administration where authority-gaps exist.

8.8 DATA COLLECTION

Hofstee (2006:113) posited that data collection becomes easy if there is a well thought out and appropriate plan. The plan has to be drawn with specific consideration of the method of data collection, the target population and the purpose for which the data is required. The collection of the data for this research was done over two weeks as interviewers and interviewees were readily available. A total of 150 B. Tech (Project Management) students were requested to personally interview their colleagues at their workplaces. Malhotra (1999:405)
proposed a five stage process in data collection, these steps are: selecting field workers, training field workers, supervising field workers, validating field workers, and evaluating field workers. There was no special selection of the interviewers and students who were already in the school system were requested to assist, obliged. A brief training was provided on how the forms needed to be filled out, clarity was given on the meanings of all the questions and brief customer relations training was provided on the last day.

There was no field supervision of the interviewers, thus they did their own sampling and elements identification. Each student was tasked with conducting a minimum five interviews, specifically to people who were directly involved in project execution whether as team members or operational personnel. Another 120 former students of the same program were emailed and requested to fill in the questionnaires, and to give to at least two colleagues at their workplaces. A total of 1214 questionnaires were received at the end of the two weeks period, there was a specific cut-off date.

8.9 ETHICAL CONSIDERATIONS
The questionnaire clearly stated, and it was emphasised during the training that responding to the questions was a voluntary exercise, and no one was under any obligation. Further to that, no names, or names of companies, or any form of identification was allowed to be put on the questionnaires. In the initial stages of the preparation of the questionnaire, the Ethics Committee of the Nelson Mandela Metropolitan University had evaluated the questionnaire for ethics. The purpose of the survey was clearly stated.

8.10 DATA ANALYSIS AND INTERPRETATION
Data preparation procedures: After the data was collected, it was immediately prepared in order to correct any possible inaccuracies on the questionnaires, to identify illegible, incomplete or ambiguous responses, and to provide data that the computer could read. The preparation involved three stages: these were editing, coding and classification of the data. This was done to ensure that the questionnaires complied with the criteria for the collection of research-worthy data. Coding is a technical process in which the responses from the respondents are given symbols to represent the response. A coding manual was created and
codes were given to the responses/questionnaires. The data was classified to show the basic information regarding the key research questions according to the characteristics.

The following nine steps were followed during data processing: validation, editing, coding, data entry, data cleaning, data description, inferential statistics, and the writing of the report.

- **Validation**
  This is the process of determining whether the survey interviews or observations were conducted correctly, courteously and professionally, without applying unethical methods or fraudulent behaviour. This is to determine that everyone interviewed was actually interviewed and to detect interviewer fraud. Validation by telephone covers these areas:

  - did the respondent qualify to be surveyed
  - did the interviewer cover the whole survey
  - was the interviewer courteous
  - was the person actually interviewed

- **Editing**
  Editing is the process of checking on the raw data for writing errors, for incomplete questionnaires, etc. These problems may be caused by the interviewer or the respondent. The editing process involved manual checking for numerous other possible problems like:

  - check if the interviewer did not ask or record certain questions
  - check closed to see if skip questions were observed
  - check on the responses to open-ended questions

The editing process is divisible into two types, e.g. Field Editing and Central Editing. Field editing asked the following questions to check on the work and the questionnaires:

  - does it comply with screening requirements
  - did they comply with skip instructions
  - compliance with individual question instructions
- is the questionnaire filled in completely
- are the answers eligible enough for the reader
- is there any constancy in the answering of the questions
- use of unfamiliar language or words or symbols

- **Coding**
  Coding is the process of assigning a code or symbol to a question on the questionnaire to change the respondents’ answers to symbols or numbers that can be read and analysed by the statistical tool.

- **Data entry**
  Data entry entails the direct entering coded data into a software package which will allow the analyst or statistician to transform the raw data into useful information. The SPSS package was used for this purpose. All the questionnaires were paper based and had to be transferred into electronic format readable by a statistical software package (SPSS). This involved direct entry of validated, edited and coded data into an ideal software package.

- **Data cleaning**
  After the data was captured, before analysis, another checking mechanism was employed to check if data was entered correctly. The data cleaning concept helps to remove any errors before start the analysis. The following items were checked:

  - number of respondents to match the number of the questionnaires received and data captured,
  - check for compliance on the eligibility of the respondents in terms of occupation in relation to project leadership, and
  - marking the intended answer clearly without marking more than one item from the Likert scale used.

### 8.11 DATA VERIFICATION METHODS

Paul Hague (2002:37) referred to verification as being concerned with establishing whether a research plan is fully translated into practice and it may require the working practices to build in various types of checking, such as:

- checking the research design against the objectives,
• the questionnaire against the information coverage, and
• whether interviews were carried out as the design intended.

Data verification can be done in four different ways, e.g. by re-entering the data, by use of a database structure, or a data entry form design, or use the output analysis. Two methods were used in the data verification process, the data re-entry and the output analysis method.

• **Re-entry of data** - the intelligent data entry system is programmed to accept only the codes that have been recorded in the software package. Thus when incorrect codes are entered the computer rejects them because it does not recognize them. To correct this, data will be re-entered.

• **Output analysis** - after the analysis of the research information was done, the researcher checked for compliance of results to established theories in leadership and project leadership specifically.

### 8.12 CONCLUSION
The research process was meticulously executed following closely the tried and proved traditional methods. The instrument used for gathering the data had to be tested first against the two sets of hypotheses, and then given to a statistician to assist with the instrument design. Precautionary measures were put in place to draw congruence between the research design and the research methodology with a special focus on the purpose of the study, the type of population, and the need for valid and reliable instruments and results. The sampling process followed the six steps as indicated in preceding sections of this chapter. Deliberate efforts were made to maintain (by way of respondents) the multi-cultural nature of the South African workforce. The findings presented in the form of graphs and tables, the interpretation and conclusion of this research are reported in the following chapter.
CHAPTER NINE
EMPIRICAL EVALUATION OF CRITICAL CORE COMPETENCIES FOR EFFECTIVE PROJECT LEADERSHIP: RESULTS AND INTERPRETATION

9.1 INTRODUCTION
In this chapter the results of the reliability and validity assessments of the questionnaire used as a measuring instrument to measure the factors is discussed. The chapter further reports on the data analysis and empirical findings of the perceptions of management on project leader competencies. The data analysis commences with reporting the descriptive statistics, followed by the results of the reliability and validity assessments of the measuring instrument (questionnaire). The results of the factor analyses are presented next, after which, the regression analysis and correlations that represent the hypothesised relationships are discussed.

9.2 SUMMARY OF THE EMPIRICAL INVESTIGATION OBJECTIVES
The aim of this study was to investigate the critical core competencies of project management - indispensable for effective project accomplishment. To achieve this aim, this research investigated and analysed the perceptions of management
regarding the following important selected project management competencies, communication, leadership style, interpersonal relations, personality, knowledge areas, form of power, emotional intelligence, and networking as well as the impact of the project leader competencies on the reduction of the authority gap and the success of the project. A number of hypotheses were formulated to test the theoretical model. For ease of reference these hypotheses will be repeated below, as well as the theoretical model (Figure 9.1).

The hypotheses concerning the management perceptions are stated below:

**First set of hypotheses:**

H0¹ There is a relationship between communication and effective project leadership
H0² There is a relationship between leadership style and effective project leadership
H0³ There is a relationship interpersonal relations and effective project leadership
H0⁴ There is a relationship between personality and effective project leadership
H0⁵ There is a relationship between understanding of knowledge areas and effective project leadership
H0⁶ There is a relationship between emotional intelligence and effective project leadership
H0⁷ There is a relationship between networking and effective project leadership
H0⁸ There is a relationship between the type of power and effective project leadership

**Second set of hypotheses:**

H0⁹ There is a relationship between effective project leadership and authority-gap reduction.

**Figure 9.1: Theoretical model for project management**
9.3 DATA ANALYSIS RESULTS

The data analysis consisted of four phases; the empirical results are discussed below to illustrate the different phases as follows:

- Firstly, the objective of the first phase of the data analysis was to assess the internal reliability of the measuring instrument. This was done by calculating the Cronbach alpha values of each instrument using the SPSS program.
- The second phase evaluated the convergent and discriminant validities of the instrument. Validity was verified through factor analyses to assess whether the individual items were indeed separate measures of the underlying dimensions they were supposed to measure.
- The third phase focused on the influence of the independent variables on the dependent variables as specified in the model depicted in Figure 9.1; these were evaluated through multiple regression.
- The objective of the fourth phase was to test the hypothesised relationships.

The variables to be measured have been abbreviated as shown in the table 9.1 to allow for easy reference.
Table 9.1: Abbreviations of variables

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>ABBREVIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>CO</td>
</tr>
<tr>
<td>Leadership style</td>
<td>LS</td>
</tr>
<tr>
<td>Interpersonal relations</td>
<td>IR</td>
</tr>
<tr>
<td>Personality</td>
<td>PE</td>
</tr>
<tr>
<td>Knowledge areas</td>
<td>KA</td>
</tr>
<tr>
<td>Power</td>
<td>PO</td>
</tr>
<tr>
<td>Emotional intelligence</td>
<td>EI</td>
</tr>
<tr>
<td>Networking</td>
<td>NT</td>
</tr>
<tr>
<td>Project Leadership</td>
<td>EPL</td>
</tr>
<tr>
<td>Authority-gap reduction</td>
<td>AR</td>
</tr>
</tbody>
</table>

9.3.1 Internal reliability of the Instruments

It was necessary to conduct reliability tests before the descriptive statistics were calculated to ensure that the measurement errors of the scales used to measure the variables were nominal. Cronbach’s alpha coefficients were applied to assess the internal validity and consistency of the measuring instruments using STATISTICA (Version 10) computer package for that purpose. The internal consistency of each of the factors was assessed by calculating Cronbach’s alpha; the value >0.7 was considered to represent a sufficient standard of reliability in this study. The results indicated in Table 9:2 show the Cronbach’s alpha values for all the scales between 0.7 and 0.9.

Table 9.2: Cronbach alpha values of measuring instruments

<table>
<thead>
<tr>
<th>Measuring instrument</th>
<th>Initial value</th>
<th>Final value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication (CO)</td>
<td>0.85</td>
<td>0.85</td>
</tr>
<tr>
<td>Leadership Style (LS)</td>
<td>0.84</td>
<td>0.84</td>
</tr>
</tbody>
</table>
In conclusion, the study retains CO, LS, IR, PE, KA, EI, NT, PO, EPL, and AR, since their Cronbach alphas were above the cut-off point.

### 9.3.2 Descriptive statistical results for each variable

The descriptive results of the independent, intervening and dependent variables in this study are presented in Table 9.3.

#### Table 9.3: Descriptive statistics for each variable: general sample response per category

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>MEAN</th>
<th>STANDARD DEVIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>3.94</td>
<td>0.64</td>
</tr>
<tr>
<td>LS</td>
<td>4.08</td>
<td>0.57</td>
</tr>
<tr>
<td>IR</td>
<td>3.79</td>
<td>0.53</td>
</tr>
<tr>
<td>PE</td>
<td>4.22</td>
<td>0.60</td>
</tr>
<tr>
<td>KA</td>
<td>4.09</td>
<td>0.57</td>
</tr>
<tr>
<td>PO</td>
<td>3.97</td>
<td>0.61</td>
</tr>
<tr>
<td>EI</td>
<td>4.11</td>
<td>0.62</td>
</tr>
<tr>
<td>NT</td>
<td>4.09</td>
<td>0.58</td>
</tr>
</tbody>
</table>
Table 9.3 shows the descriptive statistics of each variable that was measured on a five-point Likert scale. The degree to which respondents agreed with the statements on the variables was represented by selecting options 4 or 5 on the scale. Options 1 or 2 represented the degree to which respondents disagreed with the statements. A response of uncertainty or indifference was indicated by selecting option 3.

Table 9.3 indicates that respondents generally perceived effective project leadership as highly ($M = 4.11$) required to reduce the authority-gap. Table 9.3 indicates that respondents believe that effective project leadership is improved by management competencies, in terms of personality with the highest mean ratings ($M = 4.22$), emotional intelligence ($M = 4.11$) second highest, knowledge areas ($M = 4.09$) and networking ($M = 4.09$) the third highest followed by leadership style with a mean rating of ($M = 4.08$). Respondents agreed to some extent that interpersonal relations ($M = 3.79$) as well as form of power ($M = 3.79$) moderately impact effective project leadership. Table 9.4 further indicates that respondents to some extent perceive authority gap reduction with a mean rating of ($M = 3.73$) as moderately influenced by effective project leadership.

### 9.3.3 Validity of the measuring Instruments

A computer package was used to assess the correlations, and this was followed by data analysis and testing for the validity of the variables as indicated in the table above. Blumberg (2008:505) defined validity as a characteristic of measurement to ensure that a test measures what actually needs to be measured, and that the differences found with in measurement tool reflect true differences among respondents drawn from a population. There are different types of validity, namely; construct, content, and face validity. Construct validity deals with the accuracy by indicating the extent or degree of the relationship between the instrument and the construct measured. Construct validity involves both empirical and theoretical aspects of interpretation of the construct. This involves statistical analyses of internal systems including the relationships and responses to different test items. It is understood that construct validity is closely related to the substantive theory of the
construct that the test is designed to measure. Construct validity can be classified into convergent, discriminate, Nomo-logical and face validity.

- **Convergent Validity** is a parameter often used in sociology, psychology, and other behavioural sciences, refers to the degree to which two measures of constructs that theoretically should be related, are in fact related (Campbell & Fiske 1959:81-105). Together with discriminant validity, convergent validity is a type of construct validity, that can only be established if similar constructs correspond with each other, whereas discriminant validity applies to two dissimilar and easily differentiable constructs. Campbell and Fiske (1959) developed the Multitrait-Multimethod Matrix which assessed the construct validity, This approach emphasises the importance of using both discriminant and convergent techniques to validate the instrument. Convergent validity is estimated by the use of correlation coefficients, and the patterns of inter-correlation between any two dissimilar measures (discriminant) should have low values or should be high in discriminant validity. The computer programmes Microsoft Excel, STATISTICA (Version 10.0) and AMOS 19.0 was used to conduct the data analyses. Hair, Black, Babin, Anderson and Tatham (2010:128-129) stated that it is possible to use a loading of 0.35 Cronbach alpha, but in this study a value of 0.70 was used which indicated higher values of correlation which confirmed convergent validity. Validity testing as a technique is useful in assisting researchers to identify what types of tests to use, and methods that will measure the construct correctly. In this study discriminant validity was used.

- **Discriminant validity** is the degree to which scores on a test do not correlate with scores from other tests that are not designed to assess the same construct (Daniel, De Rue & Scott 2002:875-884). Discriminant validity is used to test whether concepts or measurements which are expected to be unrelated, are in fact not related. The concept of discriminant validity (Campbell & Fiske 1959), use a dual set of discriminant and convergent validation techniques. Discriminant validation reveals that the test of a concept is not highly correlated with other instruments used to measure theoretically different concepts. John and Benet-Martinez (2000:339-369) stated that there is no standard value for discriminant validity, they proposed that a value less than 0.85 implies the existence of discriminant validity between any two scales and that likely to be measuring the
same thing. For any value less than 0.85 the discriminant validity exists between the concepts to be measured.

9.3.4 Factor analysis results

Factor analysis is a prototypical multivariate interdependence technique (Zikmund & Babin 2007:608) this is a technique to statistically identify a reduced number of factors from a large number of measured variables. Kerlinger (1986:569) posited that factor analysis serves the cause of parsimony by reducing the multiplicity of tests and measures to greater simplicity and indicates what tests or measures belong together. It reduces the number of variables by clumping together those that measure the same thing, to locate and identify unities or fundamental properties underlying tests and measures. A factor is a hypothetical entity or a latent variable that is assumed to underlie the tests, scales, items, and measures of all kinds. In simpler terms, factor analysis takes thousands of quantitative measurements and qualitative observations and groups them into distinct groups of occurrence. Factor analysis can be applied to explore content area, to reduce and classify data, to remove causal links and to define relationships and test hypotheses.

According to (Kerlinger 1986:574) it is possible to use a loading of 0.35 for respondents, but in this study only those factors above 0.4 were considered to confirm validity. Loadings greater than 0.4, were considered as significant enough for the purposes of this research.

9.3.4.1 Perceptions of management towards influences of effective project leadership

Table 9.4 indicates that five of the eleven items expected to measure ‘knowledge areas’ (KA1, KA2, KA3, KA4 and KA11) loaded on factor one (1). Six items (KA5, KA6, KA7, KA8, KA9 and KA10) could not load; hence no further analysis of these items was considered and subsequently deleted. Table 9.4 shows that five of the eight items expected to measure ‘communication’ (CO1, CO2, CO3, CO4 and CO5) loaded on factor two (2) as expected. One item (CO6) meant to measure communication cross loaded, and only one item CO7 did not load to a significant extent (p < 0.04), this led to the deletion of these items and were not used in subsequent analyses.
Table 9.4 indicates that all items expected to measure ‘networking’ (NT1-NT9) loaded on factor three (3). These nine items, as well as four of the six items that were expected to measure ‘power’ (PO1, PO2, PO3, and PO4) which also loaded on factor three (3), were regarded as a measurement of ‘stakeholder-interaction.’ Two items, which were expected to measure power (PO5, PO6), did not load to a significant extent (p < 0.4) and this led to the deletion of these items and were not used in subsequent analyses. Table 9.4 indicates that eight of the eleven items expected to measure ‘emotional intelligence’ (EI4, EI5, EI6, EI7, EI8, EI9, EI10 and EI11) loaded on factor four (4). Only three items (EI1, EI2 and E3) could not load, hence no further analyses of these variables were considered and subsequently deleted.

Six of the eight items expected to measure ‘personality’ (PE2, PE4, PE5, PE6, PE7 and PE8) loaded on factor five (5). Only two items (PE1, PE3) did not load and were thus considered unacceptable for further analysis. Table 9.4 indicates that respondents did not perceive ‘interpersonal relations’ as a single construct but as a two-pronged construct. This means that respondents viewed ‘interpersonal relations’ as consisting of a dimension related to ‘introvert leader’ on the one hand and ‘interpersonal relations’ related to ‘extrovert leader’ on the other. Three (IR1, IR4, IR5) of the ten items expected to measure interpersonal relations’ loaded on factor six (6) and four items (IR6, IR8, IR9, IR10) loaded on factor seven (7). Three items (IR2, IR3 and IR7) did not load and were thus considered unacceptable for further analysis. Table 9.4 further indicates that all items expected to measure ‘leadership style’ (LS1, LS2, LS3, LS4, LS5) and one item that was expected to measure ‘communication’ (8) loaded on factor six (6) and are termed ‘leadership style’.

- The computer programme Statistica (version 10) was used to perform the data analyses. In this study only those factors that are above 0.4 were considered to confirm discriminant validity as loadings greater than 0.4 were considered significant.
<table>
<thead>
<tr>
<th>areas</th>
<th>with stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>KA1</td>
<td>.568</td>
</tr>
<tr>
<td>KA2</td>
<td>.577</td>
</tr>
<tr>
<td>KA3</td>
<td>.650</td>
</tr>
<tr>
<td>KA4</td>
<td>.602</td>
</tr>
<tr>
<td>KA5</td>
<td>.426</td>
</tr>
<tr>
<td>CO1</td>
<td>-.100</td>
</tr>
<tr>
<td>CO2</td>
<td>-.113</td>
</tr>
<tr>
<td>CO3</td>
<td>.042</td>
</tr>
<tr>
<td>CO4</td>
<td>.016</td>
</tr>
<tr>
<td>CO5</td>
<td>.013</td>
</tr>
<tr>
<td>CO6</td>
<td>.007</td>
</tr>
<tr>
<td>NT1</td>
<td>.111</td>
</tr>
<tr>
<td>NT2</td>
<td>.067</td>
</tr>
<tr>
<td>NT3</td>
<td>.050</td>
</tr>
<tr>
<td>NT4</td>
<td>-.110</td>
</tr>
<tr>
<td>NT5</td>
<td>.126</td>
</tr>
<tr>
<td>NT6</td>
<td>.099</td>
</tr>
<tr>
<td>NT7</td>
<td>.116</td>
</tr>
<tr>
<td>NT8</td>
<td>.140</td>
</tr>
<tr>
<td>NT9</td>
<td>.118</td>
</tr>
<tr>
<td>PO1</td>
<td>.035</td>
</tr>
<tr>
<td>PO2</td>
<td>-.104</td>
</tr>
<tr>
<td>PO3</td>
<td>-.037</td>
</tr>
<tr>
<td>PO4</td>
<td>-.156</td>
</tr>
<tr>
<td>EI4</td>
<td>-.042</td>
</tr>
<tr>
<td>EI5</td>
<td>.010</td>
</tr>
<tr>
<td>EI6</td>
<td>.033</td>
</tr>
<tr>
<td>EI7</td>
<td>-.046</td>
</tr>
<tr>
<td>EI8</td>
<td>-.029</td>
</tr>
<tr>
<td>EI9</td>
<td>.067</td>
</tr>
<tr>
<td>EI10</td>
<td>-.094</td>
</tr>
<tr>
<td>EI11</td>
<td>-.068</td>
</tr>
<tr>
<td>PE2</td>
<td>.093</td>
</tr>
<tr>
<td>PE4</td>
<td>.087</td>
</tr>
<tr>
<td>PE5</td>
<td>.020</td>
</tr>
<tr>
<td>PE6</td>
<td>.129</td>
</tr>
<tr>
<td>PE7</td>
<td>.199</td>
</tr>
<tr>
<td>PE8</td>
<td>.212</td>
</tr>
<tr>
<td>IR1</td>
<td>.013</td>
</tr>
<tr>
<td>IR4</td>
<td>.025</td>
</tr>
<tr>
<td>IR5</td>
<td>.060</td>
</tr>
<tr>
<td>IR6</td>
<td>-.033</td>
</tr>
<tr>
<td>IR8</td>
<td>.051</td>
</tr>
<tr>
<td>IR9</td>
<td>.069</td>
</tr>
<tr>
<td>IR10</td>
<td>.040</td>
</tr>
<tr>
<td>CO</td>
<td>.022</td>
</tr>
</tbody>
</table>

243
9.3.4.2 Effective project leadership and outcomes

Table 9.5 shows that respondents did not perceive ‘authority-gap reduction’ as a single construct but as a three-dimensional construct. This means that respondents viewed ‘authority-gap reduction’ as consisting of a dimension related to ‘genuineness of management’ on the one hand and ‘authority-gap reduction’ related to ‘empowerment’ on the other as well as, authority-gap reduction’ related to the ‘responsiveness’ of management. Five (RA4, RA6, RA7, RA8, RA13) of the twenty items expected to measure ‘authority-gap reduction’ loaded on factor one (1) were termed ‘genuineness of management.’ Five items (RA10, RA11, RA12, RA15, RA16) loaded on factor three (3) as expected and termed ‘empowerment’. Table 9.5 also indicates that four items (RA17, RA18, RA19, and RA20) loaded on factor four (4) and were termed ‘responsiveness’. Six items (RA1, RA2, RA3, RA5, RA9, and RA14) did not load and were thus considered unacceptable for further analysis. Table 9.5 indicates that all eight items that were expected to measure effective project leadership (EPL1-EPL8) loaded on factor two (2), which indicates that respondents perceived effective project leadership as a single construct.

Table 9.5: Factor loadings: Effective project leadership and outcomes

<table>
<thead>
<tr>
<th></th>
<th>Genuineness</th>
<th>E-Project leadership</th>
<th>AR-Empowerment</th>
<th>AR-Responsiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>LS1</td>
<td>-.095</td>
<td>-.021</td>
<td>.060</td>
<td>.019</td>
</tr>
<tr>
<td>LS2</td>
<td>-.088</td>
<td>-.032</td>
<td>.060</td>
<td>.012</td>
</tr>
<tr>
<td>LS3</td>
<td>.109</td>
<td>.162</td>
<td>-.026</td>
<td>-.051</td>
</tr>
<tr>
<td>LS4</td>
<td>.051</td>
<td>.121</td>
<td>.055</td>
<td>-.167</td>
</tr>
<tr>
<td>LS7</td>
<td>.270</td>
<td>.183</td>
<td>-.072</td>
<td>-.051</td>
</tr>
<tr>
<td>LS8</td>
<td>.198</td>
<td>.117</td>
<td>-.044</td>
<td>-.058</td>
</tr>
</tbody>
</table>

244
Table 9.6: Empirical factor structure: influences

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>INDIVIDUAL ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication (CO)</td>
<td>CO1, CO2, CO3, CO4, CO5,</td>
</tr>
<tr>
<td>Leadership style (LS)</td>
<td>LS1, LS2, LS3, LS4, LS5</td>
</tr>
<tr>
<td>Personality (PE)</td>
<td>PE2, PE4, PE5, PE6, PE7, PE8</td>
</tr>
<tr>
<td>Interpersonal relations – introverts (IRI)</td>
<td>IR1, IR4, IR5</td>
</tr>
<tr>
<td>Interpersonal relations – extroverts (IRE)</td>
<td>IR6, IR8, IR9, IR10</td>
</tr>
<tr>
<td>Knowledge areas (KA)</td>
<td>KA1, KA2, KA3, KA4, KA5</td>
</tr>
<tr>
<td>Emotional intelligence (EI)</td>
<td>EI4, EI5, EI6, EI7, EI8, EI9, EI10, EI11</td>
</tr>
<tr>
<td>Stakeholder – interaction (SI)</td>
<td>NT1, NT2, NT3, NT4, NT5, NT6, NT7, NT8 NT9, PO1, PO2, PO3, P4</td>
</tr>
</tbody>
</table>

Table 9.7: Empirical factor structure: Moderating and dependent variables

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>INDIVIDUAL ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective project leadership (EPL)</td>
<td>EPL1, EPL2, EPL3, EPL4, EPL5, EPL6, EPL7, EPL8</td>
</tr>
<tr>
<td>AR-Genuineness (ARG)</td>
<td>AR4, AR6, AR7 and AR8,13</td>
</tr>
<tr>
<td>AR- Empowerment (ARE)</td>
<td>AR10, AR11, AR12, AR15, AR16</td>
</tr>
<tr>
<td>AR- Responsiveness (ARR)</td>
<td>AR17, AR18, AR19, AR20</td>
</tr>
</tbody>
</table>

Table 9.4 reveals that as a result of the exploratory factor analysis, the independent ‘type of power’ variable have been deleted as the factor loadings were insignificant. Dependent variable ‘authority-gap reduction’ split into three separate variables, namely ‘genuineness’ of project leadership; ‘empowerment’ related to authority and ‘responsiveness’ of project leader. Based on these findings, the original hypotheses were reformulated and the theoretical model was adapted.
### Table 9.8: Empirical factor structure: Influences and outcomes

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>INDIVIDUAL ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>CO1, CO2, CO3, CO4, CO5,</td>
</tr>
<tr>
<td>Leadership style</td>
<td>LS1, LS2, LS3, LS4, LS5</td>
</tr>
<tr>
<td>Interpersonal relations – introverts?</td>
<td>IR1, IR4, IR5</td>
</tr>
<tr>
<td>Interpersonal relations – extroverts?</td>
<td>IR6, IR8, IR9, IR10</td>
</tr>
<tr>
<td>Personality</td>
<td>PE2, PE4, PE5, PE6, PE7, PE8</td>
</tr>
<tr>
<td>Knowledge areas</td>
<td>KA1, KA2, KA3, KA4, KA5</td>
</tr>
<tr>
<td>Emotional intelligence</td>
<td>EI4, EI5, EI6, EI7, EI8, EI9, EI10, EI11</td>
</tr>
<tr>
<td>Stakeholder – interaction</td>
<td>NT1, NT2, NT3, NT4, NT5, NT6, NT7, NT8, NT9, PO1, PO2, PO3, P4</td>
</tr>
<tr>
<td>Effective project leadership</td>
<td>EPL1, EPL2, EPL3, EPL4, EPL5, EPL6, EPL7, EPL8</td>
</tr>
<tr>
<td>AR-Genuineness</td>
<td>AR4, AR6, AR7 and AR8</td>
</tr>
<tr>
<td>AR- Empowerment</td>
<td>AR10, AR11, AR12, AR15, AR16</td>
</tr>
<tr>
<td>AR- Responsiveness</td>
<td>AR15, AR16, AR17, AR18, AR19, AR20</td>
</tr>
</tbody>
</table>

The empirical factor structure as summarised in Table 9.7 is therefore subjected to regression analysis. Following this, an adapted model was constructed to illustrate the new relationships; Figure 9.2 shows the adapted model.
Figure 9.2: The adapted model of the relationships among variables based on perceptions of managers and effects of effective project leadership.
As a result of the formulation of the adapted model the hypotheses tested had to be reformulated as follows:

**The Hypotheses subjected to empirical verification (Figure 9.3) were:**

- H0\(^1\) There is a relationship between communication and effective project leadership
- H0\(^2\) There is a relationship between leadership style and effective project leadership
- H0\(^3\) is modified into H0\(^3.1\) and H0\(^3.2\)
  - H0\(^3.1\) There is a relationship between interpersonal relations related to introverts and effective project leadership
  - H0\(^3.2\) There is a relationship interpersonal relations related to extroverts and effective project leadership
- H0\(^4\) There is a relationship between personality and effective project leadership
- H0\(^5\) There is a relationship between understanding of knowledge areas and effective leadership
- H0\(^6\) There is a relationship between emotional intelligence and effective leadership
- H0\(^7\) and H0\(^8\) are modified into H0\(^9\)
- H0\(^9\) There is a relationship between stakeholder interaction and effective project leadership

**Second set of hypotheses:**

- H0\(^{10}\) is modified into H0\(^{10.1}\), H0\(^{10.2}\), and H0\(^{10.3}\)
- H0\(^{10.1}\) There is a relationship between effective project leadership and authority-gap related to genuineness.
- H0\(^{10.2}\) There is a relationship between project leader effectiveness and authority-gap reduction related to empowerment.
- H0\(^{10.2}\) There is a relationship between project leader effectiveness and authority-gap reduction related to responsiveness.
Table 9.4 indicates that respondents perceived networking (NT) and type of power (PO) as a single construct and as a result did not load as separate factors, thus the two hypotheses $H_0^7$ and $H_0^8$ were not considered as variables in the study. The two hypotheses were modified and a new hypothesis was formulated as illustrated below. The hypothesised relationships in this chapter are assessed in a modified theoretical model and the theoretical model is illustrated in Figure 9.3 below.
Figure 9.3: The hypothesised model of management perceptions of effective project leadership
9.4 REGRESSION ANALYSIS

Regression analysis is the study of relationships between variables (Albright, Winston & Zappe 2009:572) using a statistical technique to estimate relationships between dependent and independent variables. Regression analysis indicates how the value of the dependent variable changes when any of the related independent variables changes its values. This technique is widely used for predicting or forecasting possible trends given the changes of certain variables related to other variables. Because regression analysis is used to predict one variable based on numerous independent factors, it therefore assumes linearity of the correlation between the two variables. This means an increase in the other results in the decrease of the other, consequently both variables simultaneously experience the change (Blaikie 2003:125). An additional variable is always important when the study relates to human beings specifically when using multiple regressions to test theories that affect behaviour (Brace & Kemp 2003:210). Linear regression analysis assumes a definite link between the variables (Zikmund 2003:556).

9.4.1 The influence of independent variables on effective project leadership

An independent variable is the ‘stand-alone’ variable that is changed to test the effects on the dependent variable; it represents the output or effect or can be tested to see if it is the cause of the effect. The researcher in a way has control over the independent variable and can choose or manipulate the variable.

The dependent variable in this study is the effective project leadership which is presumably affected by the presence or absence of the ten independent variables listed above. The dependent variable depends on other factors; in this case effective project leadership is said to be dependent on the independent factors such as communication, performance, interpersonal relations, project requirements, personality, knowledge areas, emotional intelligence, networking, power, and authority-gap. The presence of these variables at the same time will cause interactions - a special type of effect that can be observed. For instance, if the project leader has a likeable personality, interpersonal relations may be easy to establish leading to effective communication, which will further reduce the possible negative effects of the authority gap and lead to a mutual understanding of each other, which is emotional intelligence. These effects on effectiveness are
independent of each other, but bring about greater effect on the possible effectiveness of the project leaders.

9.4.1.1 The influence of management competencies on effective project leadership

Table 9.9 shows that management competencies is positively related to effective project leadership (b = 0.04, p < 0.001). The R² of 0.62 explains the 62% variability in the model as explained by the variable EPL.

Table 9.9 also shows that the R² of 0.62 indicates that 62% of the variability in the model is explained by the variables CO, LS, IR-I, IR-E, PE, KA, EI, and SI. This means that ‘communication’ (b = 0.15, p < 0.001), ‘leadership style’ (b = 0.15; p < 0.001), ‘interpersonal relations related to extroverts’ (b = 0.07 p < 0.042), ‘personality’ (b = 0.17 p < 0.001), ‘knowledge areas’ (b = 0.13 p < 0.001), (b = 0.10 p < 0.033), ‘emotional intelligence’ (b = 0.13 p < 0.001) and ‘stakeholder interaction’ (b = 0.17 p < 0.021) have a positive relationship with effective project leadership. ‘Interpersonal relations related to introverts’ do not exert a significant influence on ‘effective project leadership’.

Table 9.9: Regression analysis: the influence of management competencies on effective project leadership

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Beta b*</th>
<th>Std. Error</th>
<th>B</th>
<th>Std Error</th>
<th>T value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>0.11</td>
<td>0.16</td>
<td>0.72</td>
<td>0.471467</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO</td>
<td>0.17</td>
<td>0.04</td>
<td>0.15</td>
<td>0.04</td>
<td>4.32</td>
<td>0.001***</td>
</tr>
<tr>
<td>LS</td>
<td>0.16</td>
<td>0.04</td>
<td>0.15</td>
<td>0.04</td>
<td>3.55</td>
<td>0.001***</td>
</tr>
<tr>
<td>IR-introvert</td>
<td>0.01</td>
<td>0.03</td>
<td>0.00</td>
<td>0.03</td>
<td>0.18</td>
<td>0.8585</td>
</tr>
<tr>
<td>IR-extrovert</td>
<td>0.08</td>
<td>0.04</td>
<td>0.07</td>
<td>0.03</td>
<td>2.04</td>
<td>0.042**</td>
</tr>
<tr>
<td>PE</td>
<td>0.17</td>
<td>0.04</td>
<td>0.17</td>
<td>0.04</td>
<td>4.14</td>
<td>0.001***</td>
</tr>
<tr>
<td>KA</td>
<td>0.14</td>
<td>0.04</td>
<td>0.13</td>
<td>0.04</td>
<td>3.31</td>
<td>0.001***</td>
</tr>
<tr>
<td>EI</td>
<td>0.14</td>
<td>0.04</td>
<td>0.13</td>
<td>0.04</td>
<td>3.29</td>
<td>0.001***</td>
</tr>
<tr>
<td>S-IN</td>
<td>0.16</td>
<td>0.04</td>
<td>0.17</td>
<td>0.04</td>
<td>3.81</td>
<td>0.001***</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R</th>
<th>R²</th>
<th>F</th>
<th>Std Error of estimate P</th>
</tr>
</thead>
<tbody>
<tr>
<td>79%</td>
<td>0.62</td>
<td>90,918</td>
<td>0.36634 p&lt; .00000</td>
</tr>
</tbody>
</table>

*   = p < 0.05
**  = p < 0.01
*** = p < 0.001
9.4.1.2 The influence of effective project leadership on dependent variables

- Authority-gap reduction related to management genuineness

Although effective project leadership exerts a significant influence on the authority-gap reduction related to management genuineness \((b = 0.253 \ p < 0.001)\), Table 9.10 indicates that the \(R^2\) of 0.04 explains only 4% variability in the model as explained by the variable ARG. This implies that management perceive ‘authority-gap associated to management ‘genuineness’ as more related to effective project leadership. This diminishes the relationship between the two constructs.

**Table 9.10: Regression analysis: the influence of effective project leadership on authority-gap reduction related to management genuineness**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Beta b*</th>
<th>Std. Error</th>
<th>B</th>
<th>Std Error</th>
<th>T value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>2.335</td>
<td>0.237</td>
<td>0.237</td>
<td>9.828</td>
<td>0.0001</td>
<td></td>
</tr>
<tr>
<td>AR- genuineness</td>
<td>0.206</td>
<td>0.046</td>
<td>0.253</td>
<td>0.0572</td>
<td>4.427</td>
<td>0.001***</td>
</tr>
</tbody>
</table>

**ARG: R**

- **R**
  - 21%
- **R^2**
  - 0.04
- **F**
  - 90.605
- **Std Error of P estimate**
  - \(0.71887\) \(p<0.00000\)

\* = \(p < 0.05\)
\** = \(p < 0.01\)
\*** = \(p < 0.001\)

- Authority-gap related reduction to empowerment

Table 9.11 shows that the \(R^2\) of 0.17 indicates that 17% of the variability in the model is explained by the variable ARE. This means that authority-gap reduction related to empowerment \((b = 0.41, \ p < 0.001)\) has a positive relationship with effective project leadership.
Table 9.11: Regression analysis: the influence of effective project leadership on authority–gap reduction related to empowerment

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Beta b*</th>
<th>Std. Error</th>
<th>B</th>
<th>Std Error</th>
<th>T value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>2.19</td>
<td>0.18</td>
<td>0.41</td>
<td>0.04</td>
<td>9.51</td>
<td>0.001***</td>
</tr>
<tr>
<td>ARE: empowerment</td>
<td>0.41</td>
<td>0.04</td>
<td>0.41</td>
<td>0.04</td>
<td>9.51</td>
<td>0.001***</td>
</tr>
</tbody>
</table>

\[ \text{AR: } R^2 = 0.41, F = 90.501, \text{Std Error of } P \text{ estimate} = 0.54409, p < 0.00000 \]

* = p < 0.05  
** = p < 0.01  
*** = p < 0.001

- Authority-gap reduction related to management responsiveness

Table 9.12 shows that the $R^2$ of 0.09 indicates that 9% of the variability in the model is explained by the variables ARR. This means that authority-gap reduction related to management responsiveness ($b = 0.36, p < 0.001$) has a positive relationship with effective project leadership.

Table 9.12: Regression analysis: the influence of effective project leadership on authority-gap reduction related to management responsiveness

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Beta b*</th>
<th>Std. Error</th>
<th>B</th>
<th>Std Error</th>
<th>T value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>AR: responsiveness</td>
<td>0.30</td>
<td>0.05</td>
<td>0.36</td>
<td>0.05</td>
<td>6.60</td>
<td>0.001***</td>
</tr>
</tbody>
</table>

\[ \text{AR: } R^2 = 0.30, F = 43.530, \text{Std Error of } P \text{ estimate} = 0.66757, p < 0.00000 \]

* = p < 0.05  
** = p < 0.01  
*** = p < 0.001

The $t$ values of independent and dependent variables are shown in Tables 9.9, 9.10, 9.11 and 9.12. The high $t$-values of the dependent variables indicate that effective project leadership has a strong impact on the authority-gap reduction relating to the empowerment of management with a high $t$-value ($t = 9.51$) as shown in Table 9.11.
Table 9.12 also shows a strong impact on the authority-gap reduction relating to management responsiveness with a high t-value \( (t = 6.60) \) followed by the t-value of ‘authority-gap reduction relating to genuineness of management’ with a moderately high t-value \( (t = 4.43) \) as indicated in Table 9.9.

Management communication has a stronger influence on the effectiveness of project leadership with an acceptable t-value \( (t = 4.32) \) followed by ‘personality’ with a t-value \( (t = 4.14) \) as indicated in Table 9.8). Table 9.8 shows independent variables ‘stakeholder interaction’ with a t-value \( (t = 3.81) \) followed by ‘leadership style’ \( (t = 3.55) \) and ‘knowledge areas’ \( (t = 3.31) \), as well as ‘emotional intelligence’ with a moderate to low t-value \( (t = 3.29) \) that moderately impacts on effective project leadership. Notably, Table 9.8 is the weak impact of ‘interpersonal relations related to extrovert management’ on ‘effective project leadership’ \( (t = 2.04) \).

**9.5 CORRELATION ANALYSIS OF THE HYPOTHESES**

Correlation measures the association or the relationship that prevails between two phenomena (Walliman 2001:92; 2005:218). Correlational techniques normally respond to three questions about two factors or two sets of data: does a relationship exist between two variables or sets of data? If so, what is the direction of the relationship and what is its magnitude (Walliman 2001:254)? Multi co-linearity and correlation tests analyses confirm the appropriateness of data at hand. Correlational analysis is the use of statistical correlation to determine the strength of the relations between variables. When there is a relationship between the variables, it follows that changes in the value of one variable result in the change of the other variable, hence the dependent and independent variables are identified. In this study, several tests were done to identify the degree of multi co-linearity. Different techniques are used in the measuring of the correlation, but correlation is only appropriate and relevant to certain types of data. This is most ideal in quantifiable data where the use of numbers is the most ideal. In this study rating scales were used (the Likert scale) though they are perceived by other researchers to be a “controversial middle case” because it is difficult to quantify perceptions unlike if one was dealing with money or a number of people. Though many statisticians argue against the use of rating scales in correlation studies, many research surveys use the rating scales with considerably real-world-results. It is understood that when working with rating scales
the correlations give general indications of the correlation. The result of a correlation becomes the correlation coefficient (or “r”); this ranges from -1.0 to +1.0. The closer the value of ‘r’ is to -1.0 or +1 the more closely the variables under study are related to each other. A null (0) value means no relationship between the variables, a negative ‘r’ means that when one of the values of one variable goes up, the value of the other variable decreases. If ‘r’ is positive, it means the increase in value of one variable results in the increase in value of the other variable. Correlation coefficients ‘r’ with a value between -1 and +1 and squaring the values makes them easy to understand (Mason & Lind 1996:480), and the square of the coefficient (or ‘r’ square) is equal to the percentage of the variation in one variable that is related to the variation in the other (Steyn, Smit, Du Toit & Strasheim 2007:175). The decimal point is ignored, thus an ‘r’ of 0.5 means 25% of the variation is related (0.5 squared = 0.25). An ‘r’ value of .6 means 36% of the variance is related (0.6 squared = 0.36). Table 9.13 below illustrates the correlation figures as analysed from the data calculations.

Table 9.13 Correlation analysis of the hypotheses

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std Dev</th>
<th>CO</th>
<th>LS</th>
<th>IRI</th>
<th>IRE</th>
<th>PE</th>
<th>KA</th>
<th>EI</th>
<th>SI</th>
<th>EPL</th>
<th>ARG</th>
<th>ARE</th>
<th>ARR</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>3.94</td>
<td>0.64</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LS</td>
<td>4.08</td>
<td>0.62</td>
<td>0.63</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IRI</td>
<td>3.41</td>
<td>0.69</td>
<td>0.22</td>
<td>0.23</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IRE</td>
<td>4.08</td>
<td>0.69</td>
<td>0.39</td>
<td>0.54</td>
<td>0.24</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PE</td>
<td>4.31</td>
<td>0.59</td>
<td>0.41</td>
<td>0.54</td>
<td>0.20</td>
<td>0.50</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KA</td>
<td>4.08</td>
<td>0.63</td>
<td>0.39</td>
<td>0.55</td>
<td>0.22</td>
<td>0.48</td>
<td>0.64</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EI</td>
<td>4.08</td>
<td>0.64</td>
<td>0.49</td>
<td>0.57</td>
<td>0.21</td>
<td>0.52</td>
<td>0.57</td>
<td>0.59</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SI</td>
<td>4.05</td>
<td>0.57</td>
<td>0.47</td>
<td>0.52</td>
<td>0.26</td>
<td>0.48</td>
<td>0.55</td>
<td>0.56</td>
<td>0.64</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPL</td>
<td>4.12</td>
<td>0.59</td>
<td>0.57</td>
<td>0.65</td>
<td>0.24</td>
<td>0.54</td>
<td>0.63</td>
<td>0.61</td>
<td>0.64</td>
<td>0.63</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARG</td>
<td>3.40</td>
<td>0.72</td>
<td>0.12</td>
<td>0.14</td>
<td>0.38</td>
<td>0.09</td>
<td>0.04</td>
<td>0.12</td>
<td>0.11</td>
<td>0.26</td>
<td>0.18</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARE</td>
<td>3.91</td>
<td>0.57</td>
<td>0.27</td>
<td>0.41</td>
<td>0.24</td>
<td>0.34</td>
<td>0.38</td>
<td>0.35</td>
<td>0.36</td>
<td>0.45</td>
<td>0.38</td>
<td>0.49</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>ARR</td>
<td>3.86</td>
<td>0.70</td>
<td>0.25</td>
<td>0.28</td>
<td>0.24</td>
<td>0.25</td>
<td>0.23</td>
<td>0.26</td>
<td>0.30</td>
<td>0.37</td>
<td>0.30</td>
<td>0.41</td>
<td>0.47</td>
<td>1.00</td>
</tr>
</tbody>
</table>
Table 9.12 shows CO positively correlated to EPL with a coefficient of 0.57. It further shows that LS is positively correlated to EPL with a coefficient of 0.65 and IRE has a significant positive correlation with a coefficient of 0.54. Although Table 9.12 indicates that there is a significant positive correlation between IRI (interpersonal relations related to introverts) and EPL (effective project leadership), the strength of the relationship is weak with a correlation coefficient of 0.24. According to Table 9.12 PE is positively correlated to EPL with a coefficient of 0.63 and KA is positively correlated to EPL with a coefficient of 0.61. Table 9.12 also shows that EI is positively correlated to EPL with a coefficient of 0.64 and SI is positively correlated to EPL with a coefficient of 0.63.

Table 9.12 further indicates that ARG (authority-gap reduction related to management genuineness) and EPL have a significant positive correlation; however, the strength of the relationship is weak with a correlation coefficient of 0.18. Table 9.12 also reveals that EPL is positively correlated to ARE (authority-gap reduction related to management empowerment) with a coefficient of 0.38. According to Table 9.12 ARG (authority-gap reduction related to genuineness) with a coefficient of 0.30 is positively related to EPL.

(i) Findings on the first set of hypotheses:

H01: There is a relationship between communication and effective project leadership

Tables 9.8 and 9.12 reported a statistically significant positive relationship between the management communication and effective project leadership (p < 0.001). This means that there is a significant positive correlation between management communication and effective project leadership with a correlation coefficient of 0.57. Therefore H01 is accepted.

H02: There is a relationship between leadership style and effective project leadership

Tables 9.8 and 9.12 reported a statistically significant positive relationship between the leadership style and effective project leadership (p < 0.001). This means that there is a significant positive correlation between the leadership style and effective project leadership with a correlation coefficient of 0.65. Therefore, H02 is accepted.
H03.1 There is a relationship between interpersonal relations related to introverts and effective project leadership

Tables 9.8 and 9.12 indicated that the interpersonal relations related to introverts are not significantly related to effective project leadership ($r = 0.01$, NS). This means that there is no significant correlation between the interpersonal relations related to introverts and effective project leadership with a correlation coefficient of 0.24. Therefore, H03.1 is rejected. The alternative hypothesis is thus accepted. The alternative hypothesis being: “There is no relationship between interpersonal relations related to introverts and effective project leadership.”

H03.2: There is a relationship between interpersonal relations related to extroverts and effective project leadership

Tables 9.8 and 9.13 reported a statistically significant positive relationship between the interpersonal relations related to extroverts and effective project leadership ($p < 0.001$). There is a significant positive correlation between the interpersonal relations related to extroverts and effective project leadership with a correlation coefficient of 0.54. Therefore hypothesis H03.2 is accepted.

H04: There is a relationship between personality and effective project leadership

Tables 9.8 and 9.13 reported a statistically significant positive relationship between management personality and effective project leadership ($p < 0.001$), and effective project leadership with a correlation coefficient of 0.63. H04 is therefore accepted.

H05: There is a relationship between understanding of knowledge areas and effective leadership

Tables 9.8 and 9.13 reported a statistically significant positive relationship between understanding of knowledge areas and effective project leadership ($p < 0.001$). There is a significant positive correlation between the knowledge areas and effective project leadership with a correlation coefficient of 0.61. Hypothesis H05 is therefore accepted.

H06: There is a relationship between emotional intelligence and effective leadership

Tables 9.8 and 9.13 revealed a statistically significant positive relationship between the emotional intelligence and the effective project leadership ($p < 0.001$). This means that there is a significant positive correlation between emotional intelligence
and the effective project leadership with a correlation coefficient of 0.64. Therefore, H0^6 is accepted.

**H0^9:** There is a relationship between stakeholder interaction and effective project leadership

Tables 9.8 and 9.13 reported a statistically significant positive relationship between the stakeholder interaction and effective project leadership (p < 0.001). This means that there is a significant positive correlation between stakeholder interaction and the effective project leadership with a correlation coefficient of 0.63. H0^9 is therefore accepted.

(ii) Findings on the second set of hypotheses

H0^10.1: There is a relationship between effective project leadership and authority-gap reduction related to genuineness.

Tables 9.9 and 9.13 reported a statistically significant positive relationship between the authority-gap reduction related to management genuineness and effective project leadership (p < 0.001). Thus, indicating a significant positive correlation between effective project leadership and authority-gap reduction related to genuineness with a correlation coefficient of 0.18. Therefore, H0^10.1 is accepted.

H0^10.2: There is a relationship between project leader effectiveness and authority-gap reduction related to empowerment.

Tables 9.10 and 9.13 reported a statistically significant positive relationship between the authority-gap reduction related to management empowerment and effective project leadership (p < 0.001), indicating a significant positive correlation between effective project leadership and authority-gap reduction related to empowerment with a correlation coefficient of 0.38. Therefore, H0^10.2 is accepted.

H0^10.3: There is a relationship between project leader effectiveness and authority-gap reduction related to responsiveness.

Tables 9.11 and 9.13 reported a statistically significant positive relationship between the authority-gap reduction related to management empowerment and effective project leadership (p < 0.001). This indicates a significant positive correlation between effective project leadership and authority-gap reduction related to empowerment with a correlation coefficient of 0.38. Therefore, H0^10.3 is accepted.

The regression analysis results are summarised in Figure 9.4.
Figure 9.4: The regression analysis results of the management perceptions of effective project leadership.
9.6 CONCLUSION

This chapter examined the elements of the empirical evaluation of perceptions of project practitioners in relation to effective project leadership. Each of the phases was examined thoroughly in the preceding paragraphs, and the findings were recorded accordingly. The phases examined were, firstly, the assessment of the measuring instrument for validity by calculating its Cronbach alpha values using a computer package. Secondly, using statistical analysis to evaluate the convergent validity of the various instruments used to measure the constructs by means of factor analyses to identify items that indeed measure separate underlying dimensions. Thirdly, an analysis of the influence of the independent variables on the dependent variables is specified in the new model. Fourthly, the hypotheses were tested against the findings through regression analyses and determining their correlation coefficients.

In summary, the results show that there is a relationship between effective project leadership with communication, leadership style, interpersonal relationship [relating to extroverts], personality, emotional intelligence, knowledge areas, stakeholder interaction, and authority-gap reduction (genuineness, empowerment and responsiveness). The final chapter, chapter ten, presents a brief summary of the research report. Chapter ten further examines the results of the study in greater detail and discusses the findings, limitations, contributions and recommendations for future research, as well as suggesting additions to the existing body of knowledge and implications for effective project leadership.
CHAPTER TEN
RECOMMENDATIONS, MANAGERIAL IMPLICATIONS AND CONCLUSIONS OF THE STUDY

10.1 INTRODUCTION

The purpose of this research was to identify through empirical research the critical, generic and strategic core competencies that are ideal for effective project leadership. There is an unprecedented growth in the demand for project leaders in the industry, which is also reflected in the increasing numbers of students enrolling to study project management. Organisations in large numbers are converting their operations into project types and are increasingly resorting to management-by-projects to improve their productivity, performance and efficiency systems. Project management, until hitherto the preserve of engineering disciplines, has expanded to include undertakings with specific objectives that have to be realised once-off, are limited by time (start and end dates), with specific quality requirements and a fixed budget. The competencies required for this discipline are considered critical as the knowledge will help to reduce the current high project failure rate, understand project leadership, develop effective strategies for effective execution, and cut down on expenses incurred due to the high project failure rate.

Based on the findings of the study it is envisaged that the many organisations that adopt management-by-projects as a solution would improve in their productivity, effectiveness and efficiency. The results of the research would add to existing knowledge in project leadership. In addition many other areas of study will be opened up to enhance the learning and expansion of this fast growing discipline. Organisations (government, private and not-for-profit) are increasingly reverting to the use of management-by-projects as a solution to their business operations. Project management as a growing discipline needs new knowledge and understanding of generic competencies required for effective project execution. The quest for the identification of effective leadership competencies in South Africa takes place against the backdrop of a society highly divided along racial and cultural lines. The diversity in the South African workplace is caused predominantly by culturally based differences because of people who differ in their perceptions about work and about each other’s intentions based on historical stereotypes. Central to this
assertion is the understanding that culture has an effect in the way leadership prototypes are formed and perceived, and that cultural values pre-determine what should be good leadership.

The employment of foreigners (non-South Africans) in the industry, increases the complexities of defining effective leadership in a South African environment. The research took place in Cape Town where there is still a strong awareness of the perceived differences between the different racial groups and the imbalance thus caused in middle and senior management positions. The interviewees, who are practitioners were mostly white, then coloured and a few blacks even though the racial profile of the city is 1:12:26:30 (Indians, whites, blacks and coloureds). Together with this is the entry of female project leaders (presumed to have a different leadership style to men) to the project management, further complicating the existing view on project leadership competencies.

This chapter provides a synthesis of the research by recapitulating the important features of the research from chapter one to chapter nine. This is followed by a brief discussion on the problem statement, research methodology, data collection and analysis before detailing the findings of the survey. The findings are linked to the new knowledge from the research, limitations of the study, the recommendations and the conclusion. The recommendations highlight the areas of strengths and points out new areas for further investigation in future studies. The research findings will be useful to practitioners in the recruitment of project leaders, academics and training academies with relevant project leadership development programs. These findings are analysed, interpreted, conclusions made, and recommendations given in the context of generic project-leadership and its unique requirements in a highly unstable market terrain.

10.2 SUMMARY OF OBJECTIVES OF PRECEDING CHAPTERS

Chapter one introduced the concepts, stated the significance of the study, provided a brief literature review and identified the problem of the study. A problem statement was formulated, followed by outlining the purpose and objectives of the research, research design and research methodology. Cognisance was taken of the nature of the industry and the calibre of the respondents before the decision on what research
design and methodology to be used. The research questions were formulated to support and direct the study within the context-relevant research methodology. The sample frame was discussed including the type of respondents needed, the sample size and the sampling methods used for the research.

Chapter two provided a detailed account on the evolution of leadership and management and the underlying theories through the dispensations of industrial growth. Distinctions between management and leadership, project management and other management disciplines were made. Relevant theories of leadership and their implications to effectiveness were discussed and comparisons on merits and demerits made. A brief study of the impact of these theories on contemporary organisations with specific reference to project leadership was made. The failure of both academia and industry practitioner to develop a conclusive, one-size-fits-all leadership-model was acknowledged. Chapter two concluded by discussing the implicit leadership theories and comparing them to contingency models.

Chapter three emphasised that the project executions are not in complete isolation of other past or future projects. Organisations are going through a period of projectification as an indication of the effectiveness of management-by-projects. Personnel related characteristics of project-leadership, included the type of power, the type of followers, the nature of the tasks, and the ability of leadership to combine individual and organisational goals were discussed. The existence of the authority gap is examined within the context of current project management knowledge that projects are practitioner-driven. The core competencies required by project leaders and the benefit to both academia and practitioners alike are explored in the text. The chapter concluded by introducing the complexity theory of accepting the juxtaposition of order amidst chaotic change as essentials. A middle-of-the-road approach between computational analysis of individuals and the resultant structures from the social interactions of the heterogeneous organisation were established from existing literature.

Chapter four introduced the macro and micro views of......? and clearly distinguished between project success and project management success. The success factors comprised the variables, communication, emotional intelligence,
leadership style, personality, networking, interpersonal relations, and knowledge areas, and a correct understanding of it will enable good prediction of their behaviour and likely impact on effective leadership. Thirteen variables identified by Yu, Shen, Kelly and Hunter (2007) were discussed together with numerous methods used by researchers to identify and classify project variables. The concept of project leadership with reference to corresponding increase in vagueness, complexity, dynamism and the extent of the challenges were examined.

Chapter five introduced the project knowledge areas as pronounced by the Project Management Bodies of Knowledge (BoKs) and the topics that should be known by project practitioners. The historical perspectives were discussed with emphasis on the development of the discipline and the current *projectification* in the industry. A movement in focus away from mechanistic techniques and tools to the new focus on the micro view and the human element of project management was discussed. The standards and the curriculum developed by the BoKs (PMI and APM) came under scrutiny. The knowledge areas and the ubiquitous nature of leadership competencies and how this affects leadership development was described extensively. The assertion by Carroll, Levy and Richmond (2008:363 - 379) that effective project leadership is not mechanistic, but is subtle, emotional and relational loaded with soft skills was recognised.

Chapter six examined traditional and contemporary challenges in project management with a focus on the high failure rate of projects. A study of 97 failed projects identified managerial factors as directly responsible for the failure rate, this was put under scrutiny. The causes of failure are aligned with the type of project, complexity and leadership, and the age and experience of the project leader having a direct bearing on the probability of success in a project. In chapter six the strategic management approaches, such as, top management support and project scheduling, and tactical (for instance, client consultation, personnel selection and training) were identified as critical challenges common in project management. The chapter also focused on the density of the project network, project life cycle, and the urgency of the project outcome. Some of the peculiar challenges to South Africa such as: affirmative action, gender equity and racial or cultural tension were discussed. The effects of the authority-gap and organisational politics were revisited in chapter six.
Chapter seven discussed the conceptual framework and conceptual model starting with a brief overview of historical perspectives of management. The history of project management was followed by theoretical perspectives of the conceptual framework, and some existing models were cited for the sake of inclusivity. The conceptual framework was discussed as a tentative theory predicting phenomena and relationships and this was developed into a conceptual model. Leadership theories were revisited briefly and leadership competency models discussed as a prelude to the theoretical framework. The chapter concludes with a discussion of the purpose of the new model, the theories that guided the construction of the new model, and the factors that impact on the project environment.

Chapter eight dealt with the research design, methodology, research questions, and the research hypotheses. Three (3) sets of directional hypotheses were discussed in chapter eight, and the differences between research method and research design were presented in Table 8.1. The information provided by the design was discussed with emphasis on the tasks; sample selection, sample size, data collection method, instrumentation, procedures and ethical requirements. The chapter further discussed the qualitative and quantitative methods albeit briefly with some detail on the descriptive survey method since there was a need to establish the existence of causal relationships between the variables under study. Sampling methods using the six-step-procedure, construction of the research instrument and the various stages taken to ensure reliability and validity of the data collected were detailed. Finally the data collection process, ethical considerations, and data preparation procedures (validation, editing, coding, data entry, data cleaning, data description, inferential statistics, and the writing of the report) were detailed.

Chapter nine comprises the empirical evaluation of critical core competencies for effective project leadership, the results and interpretation. The results of the reliability and validity assessments of the questionnaire together with reports on data analyses and empirical findings were discussed. The results of the factor analyses were presented next, after which, the regression analysis and correlations that represent the hypothesised relationships discussed. The aim of the research was presented again briefly in a summary of the empirical investigation objectives and findings, and the hypotheses re-formulated.
10.3 EMPIRICAL FINDINGS AND RECOMMENDATIONS OF THE STUDY

This section of the chapter will briefly discuss the results, findings and interpretations from chapter nine before making deductions and recommendations for each variable. As stated earlier the research instrument was tested for reliability and all ten variables to be measured (communication (CO), leadership style (LS), interpersonal relations (IR), personality (PE), knowledge area (KA), power (PO), emotional intelligence (EI), networking (NT), project leadership (EPL), authority-gap reduction (AR) were subjected to statistical analysis. It was necessary to ensure that any measurement errors of the instrument were nominal before the descriptive statistics were performed. Cronbach’s alpha coefficient was used to assess the internal validity and consistency of the measuring instruments, internal consistency was assessed by calculating Cronbach’s alpha ( > 0.7) and it was considered as sufficient. The results were illustrated in Table 9.2. All the variables and factors measured had values above the minimum 0.7 and the following variables were retained: CO, LS, IR, PE, KA, EI, NT, PO, EPL and AR. The general (descriptive) statistics results for each of the independent, intervening and dependent variables were recorded in Table 9.3.

The descriptive statistics of each variable were measured on a five-point Likert scale (a high degree of agreement was represented by 4 and 5, a high degree of disagreement was represented by 1 and 2, and 3 indicated ambivalence or indifference). The majority of the respondents perceived effective project leadership ($M=4.11$) as the extent to which it is required to reduce the authority-gap. Effective project leadership was empirically seen in descending order; personality mean ratings ($M = 4.22$), emotional intelligence ($M = 4.11$), knowledge areas ($M = 4.09$), networking ($M = 4.09$) and leadership style has a mean rating of ($M = 4.08$). These five (5) items were perceived to be strongly affected by effective project management. Whereas, contrary to expectations, interpersonal relations ($M = 3.79$) and the form of power ($M = 3.79$) were perceived to moderately impact on effective project leadership. Authority-gap reduction had a low mean rating of ($M =3.73$) and is moderately influenced by effective project leadership.

In order to capture the peculiarities of each variable, they will be discussed one by one in the following section. The discussion will focus on the effects of each variable, and the interconnectedness of the variables and their elements. Figure 10.1
summarises the empirical results reported in Chapter 9.

Figure 10.1: Empirical evaluation of the competencies of project management perceptions for effective project leadership

10.3.1 Discussion and conclusions on the findings for variable: communication (CO)

Five of the eight items expected to measure ‘communication (Table 9.4) loaded on factor two (communication) and the rest were deleted. From these findings it was deduced that effective communication (the right information, in the relevant format, to the relevant individuals and in time) will constitute effective project leadership. It is
further concluded that communicating well will inevitably reduce last minute responses by section heads, will keep everyone well informed about everything they need to know about the project, and may add to the motivation of practitioners and possibly trust and respect for the project leader. On the other hand, information is a form of empowerment which is necessary for effective team operations, the team members may feel empowered and consequently motivated.

**Recommendations:** it is recommended that prior planning prevents poor performance, and a well thought-out and constructed (written and given to stakeholders) communication plan that is properly executed, may enable effective communication. Such a plan may be constructed in conjunction with or in the form of a Gantt chart together with the milestones and WBSs for the project to provide information ‘timeously’ to the relevant people at every stage. It may be necessary to investigate the impact the communication plan may have on general communication effectiveness leading to team cohesion and improved performance in projects.

**10.3.2 Discussion and conclusions on the findings for variable: interpersonal relationships (IR)**

Three of the ten items expected to measure interpersonal relations’ loaded on factor six (introvert-interpersonal relationship) and four items loaded on factor seven (extrovert-interpersonal relationships). The other three did not load and were therefore deleted and discarded. A close look at the other IR items (Table 9.4) leads to the conclusion that respondents did not perceive ‘interpersonal relations’ as a single construct, it was considered a two pronged construct. The four that loaded on factor 7 were as expected, this implies the acceptance by the interviewees that a degree of autocratic or transactional styles of leadership, as seen in item IR1 (Table 9.4) may be used. The item (IR4) seems to show a weakening, empathy or sensitivity to the colleagues or followers in this operation, that shows a human side. The last five loaded as expected. The conclusion reached is that a person with good interpersonal relations is likely to accept other views and consider other people’s conditions or circumstances. This may mean the presence or need of cognitive persuasive and negotiating abilities. Additional to these abilities, is presence of willingness to coalition to get support either through good relations or a persuasive personality is required. Furthermore, the extroverts are most likely to perform better if
they socialise better, all things being equal. It is further concluded that an ideal proportional mix of extroversion, emotional intelligence and a persuasive personality may improve the leadership skills of the incumbent. Because of the element of autocracy and transactional leadership accepted in the results, it is concluded further that switch leadership together with situational leadership may be ideal.

**Recommendations:** Cognisance should be taken of the nature of the tasks, the organisational structure and the degree of the effect of the authority gap. This should be done according to the different phases of the project (different phases may require different leadership styles) because of the type of tasks, and the nature of the people involved. For instance, whilst the project leader may be able to give instructions to junior staff (skilled or unskilled), he may not be able to with professional peers and senior managers. For recruitment and selection purposes it is recommended that practitioners should prefer an extrovert project manager who will interact more readily compared to an introvert. But such a person would inevitably need to have high levels of emotional intelligence to enable them to understand and appreciate the emotions of the different members of the organisation. Situational or switch leadership may be the most ideal way to manage a project, given the extent of the authority-gap, the nature of the employees and the nature of the tasks through the different project phases. Another element may also have to do with the availability of alternative or better jobs for the team members outside of their current employ; this affects their allegiance to the organisation. It also recommended that through research, it may be necessary to establish the impact of introversion and extroversion in the establishment of interpersonal relationships as a way forward for practitioners.

10.3.3 Discussion and conclusions on the findings for variable: leadership style (LS)

All the five items expected to measure ‘leadership style’ and one item that was expected to measure ‘communication’ loaded on factor eight (leadership style). The first three elements of the factor concerns the characteristics of an autocratic or transactional leader who is task focused and inconsiderate regarding employee feelings or circumstances. The literature outlines such personalities as being ‘focused on tasks and their accomplishments’ regardless of other conditions. Such leadership is also known to be conscious about time, which augurs well with project
management because projects are limited by start and end dates, such an approach may yield the required results.

A conclusion is therefore drawn that the variable essentially suggests that there is a need to have a mix of both people and task orientation. It is concluded that, firstly there seems to be a good relationship or similarities between the interpersonal relation variable and the leadership style variable. Secondly, the acceptance of autocratic (one person thinking and making decisions) and transactional (sets out the work for everyone and does all the planning) leadership may be ideal for either the owner of the operations (because he has direct authority), a manager without much of an authority-gap, or one who is leading people who are not well experienced or knowledgeable about the operations. It is disappointing that no particular leadership style stands out in this case, meaning there is no ‘one-size-fits-all leadership style.’

It is recommended that the project leader should assess the situation correctly in terms of the followers. Research findings have indicated that people who are professionals prefer to be treated differently in that it should be understood that they are able to work on their own. They are easily offended if they are talked down to, or are instructed as if they are not professionals. Besides, most of the team members in a project will be at the same level with the project leader or sometimes higher or more senior, in which case transactional and autocratic leadership may not be appropriate as it will cause dysfunctional conflicts. On the other hand, the low level employees who perform the lower level tasks may need some degree of push because the kind of work they do is not professional, they are paid less and can be replaced easily. Transactional management has been identified as more ideal for such levels of employees. Further research is necessary to study employee leadership preferences by industry type, level of operation, and possibly cultural values and their leadership prototypes.

10.3.4 Discussion and conclusions on the findings for variable effective project leadership (EPL).

All eight items that were expected to measure effective project leadership loaded on factor two, communication. Thus it is concluded firstly, that respondents perceived effective project leadership as a single construct, suggesting that communication is a critical core competency in effective project management. The items concern the
personality of the individual leader, and are divided into two types or categories. The first gives the impression of a leader that are not reluctant to make prompt decisions, self-confident, with clarity of what they want done, and motivated in what they do possibly with a strong task orientation. The second portrays a leader with a human side that shows consideration of people’s feelings, empathy and possibly preparedness to mentor and coach employees where necessary.

The second conclusion reached is that the personality of the project manager is seen by the respondents as being positively aligned to effectiveness of the project leader. Contrary to findings by other researchers that the project manager’s role and function did not seem to have any impact (negative or positive) in the success of project execution. This conclusion, that the personality of the project leader is critical, requires that personality should be described here. Personality involves openness to experience, conscientiousness, extroversion, agreeableness, and neuroticism and these are generally stable over time. Personality is a particular combination of behaviour, emotions and attitudes that distinguish a person from others, generally a part of upbringing.

Based on the conclusions made above, it is recommended that practitioners have extensive training in building those aspects of their personality that will best suit them for project leadership. Personality traits are co-incidently the same attributes required and expected from leaders as soft skills for effective leadership. Psychologists indicated that the personality of people changes from childhood (temperament) and only gets fixed at about the age 30 years. This suggests therefore that personalities can be acquired and as such people can be trained into acquiring certain personalities that make them suitable for leadership positions. It is ideal therefore that those future project leaders be schooled in these soft skills in their formative years to be able to lead effectively. A recommendation is made hereby for an investigation leading the establishment of the effectiveness of personality traits in effective project leadership, viz; openness to experience, conscientiousness, extroversion, agreeableness, and neuroticism.
10.3.5 Discussion and conclusions on the findings for variable: personality (PE)

Six of the eight items expected to measure ‘personality’ loaded on factor five as expected, only two items did not load and were deleted. These items relate to the expectations from a leader by the followers, subordinates or peers in the project team. Cognitive abilities, straightforwardness, emotional intelligence and self-confidence are expected from a leader in times of great uncertainties.

A conclusion is hereby drawn that section 10.4.4 above should be viewed together with 10.4.5 in that both involve the personality of a leader as a key element in project leadership and execution. Consequently leaders need to develop themselves in areas that build (in them) self-confidence (knowledgeability, experience and ability to bond) may give them the required confidence. The conclusion from this section is that the followers feel more willing when leadership seem to be holding at the centre. A self-confident, seemingly knowledgeable person, with high levels of cognitive abilities can only inspire and motivate the followership. The ability of the leader to inspire people will make subordinates have a feeling of being in control (it is contagious) of the situation and have no need for fear of failure.

It is hereby recommended that research into the effects of self-confidence and self-motivated project leader is needed to establish its relevance in influencing behaviour of subordinates in the workplace. Self-confidence comes from either experience or knowledge, it is therefore recommended that a project leader needs to be well informed and familiar with all the necessary detail about the project. Regular project-progress-meetings, regular interaction with stakeholders and deliberate efforts to understand the full picture of a project may be necessary to build both respect and self-confidence.

10.3.6 Discussion and conclusions on the findings for variable; knowledge areas (KA)

Five of the eleven items expected to measure ‘knowledge areas’ loaded on factor one, the other six could not load and were discarded. This was contrary to expectation since these items are part of the knowledge areas as pronounced by the PMBOKs. It is concluded that the interviewees did not perceive knowledge areas as critical core competencies for an effective project leader. It is assumed therefore that
the respondents perceive that the different knowledge areas are generally headed by specialists, and may therefore not be critical competencies for the effective operation by a project leader. By implication therefore, the hard skills may not be critical for effectiveness in project leadership, but the soft skills as they get tasks performed by those specialised in them. It is concluded also from previous personal experience in projects that, at least the project manager need to have working knowledge and understanding of these areas and not specialisation in the knowledge areas per se. These areas will always have their own experts, but some degree of literacy in those knowledge areas will be necessary for effective monitoring of progress.

As a recommendation, it may be necessary to embark on a study to establish what levels of knowledge and or information a project manager needs to be effective in project execution. Stratified studies (according to industry type) may assist in establishing if knowledge areas as a competency have a direct relationship with industry type. It is however recommended that a project leader must be able to understand and analyse correctly information from the different knowledge areas. An understanding of the operations in these areas will enable the project leader to give direction to the project as execution progresses.

10.3.7 Discussion and conclusions on the findings for variable emotional intelligence (EI)

Eight of the eleven items expected to measure ‘emotional intelligence’ loaded on factor four and no further analysis was considered for the three items that did not load. Emotional intelligence is characterised by self-awareness and awareness about other people which bodes well for subordinates; it is generally associated with age and experience. A person with high EI is self-regulated, empathetic, understands emotional meanings to spoken and unspoken language, and is able to manage emotions (both theirs and those of others). It is therefore concluded that emotional intelligence is indispensable in effective project leadership and is at the centre of the bulk of the factors discussed above. Because it involves awareness of self and others, it is closely related to communication, interpersonal relations, interaction and personality; knowledge areas may also be included if experience in project leadership is included. Emotionally intelligent persons, applying their cognitive abilities will know how to resolve conflicts, when to give in without losing
out or giving up, and when not to, how to make others feel better and how to get people to work. This also produces an empathetic personality that works for the benefit of both the organisation and the employees.

**Recommendations:** Maturity and experience should be considered when making appointments specifically for very complex, ambiguous and demanding projects. High levels of both self-awareness and the ability to interpret situations correctly together with a willingness to endure difficulties and complex times are necessary. It may be ideal to second any emotionally intelligent project leader with up-coming project leaders as apprentices. Research needs to be done to identify specifically those elements of emotional intelligence that are indispensible and transferable, and this knowledge may be used in the training of future project leaders.

**10.3.8 Discussion and conclusions on the findings for variable: shareholder interaction (SI).**

The two variables networking and power merged and will therefore be considered together under shareholder interacting. Those in 10.3.8 which were expected to measure ‘networking’ loaded on factor three as expected, the project manager (or other managers for that matter) spends close on 80% of the work time in meetings and interacting with stakeholders. Networking therefore is an indispensible part of effective project leadership, it entails communication also as networking is about communicating. Networking is related to interpersonal relations and extroverts may network better than an introvert which may translate to referent power. It is concluded that stakeholder interactions (networking and power) is more successful amongst outward going personalities, such as extroverts. Such people need the right type of political connections to develop a good relevant network and with good emotional intelligence maintain relations even in stormy times. The extrovert becomes relevant meaning it may be necessary to employ people with such a personality for the sake of the project’s success. Research into the importance of networks and how they can be utilised to have a positive effect on project leadership is essential.

Together with the networking is power, the ability to influence, and this is indispensible for effective management. Four of the nine items expected to measure ‘power’ loaded on factor three (stakeholder-interaction), and the other five loaded on
power. It is concluded that personal power comes together with self-confidence, prompt decision making, and senior management support which should be empowering and motivating for a project leader. Leaders who can identify their type of power and use it appropriately become effective within those contexts. The project leader with an authority-gap (depending on how much of personal power and the extent of senior management genuineness and responsiveness) may have to resort to the use of only that power. It is concluded that there is a relationship between power, expertise, networking, extroversion, ideal personality, and ability to communicate effectively.

Based on the conclusions above it is recommended that project leaders be able to identify the type of power they have, the extent to which they can use it, and the circumstances under which it will apply. It is also possible (and research should be conducted) for a project leader to grow other forms of power and develop existing forms of power. Extensive experience, self-development and self-skilling coupled with extensive relevant networking, stakeholder interaction, timely coalescing, increase in cognitive abilities and persuasive power, directional and relevant, extroversion, the power base may be improved and sustained. However, this should be a subject for future study for those keen on establishing the possibility of developing power bases and how that would affect the authority-gap in effective project leadership.

10.3.9 Discussion and conclusions on the findings for variable: authority-gap reduction (AR)

Table 9.5 shows that respondents did not perceive ‘authority-gap reduction’ as a single construct but as a three-dimensional construct. This means that respondents viewed ‘authority-gap reduction’ as multi-dimensional, classifiable into three components of the factor, namely: ‘genuineness of management,’ ‘empowerment’ and ‘responsiveness’ of the management.

The empirical findings of the study indicates that management perceived genuineness of management as the level of willingness by management to allow the project leader the ability to be empowered to the extent that project execution becomes an easier task to handle. This may involve the level of interest by top
management which is dependent on both size and cost of the project, and the importance they attach to the project in question.

The other five items loaded on factor three (networking interacting with stakeholders) as expected and were termed ‘empowerment’. Empowerment would mean reduction of the authority-gap, either by allowing free access to resources or by giving the project leader the authority to hire, fire, promote, decide on salary increases and decide on who should be on their team. All these remain the preserve of top management or functional managers in a typical matrix (embedded projects) and hence the presence of the authority-gap.

Four items loaded on factor four (emotional intelligence) and this category was termed ‘responsiveness.’ Emotional intelligence involves self-awareness and awareness of others, it also stems from experience and possibly education or lessons learnt in previous projects.

Following the discussion above, it is concluded therefore that part of the reduction in the authority-gap comes from respect due to technical abilities (expertise and referent power). Another way to reduce the authority-gap is by avoiding confrontation with functional managers, but instead often resorts to persuasive methods and reciprocal favours as in one-hand-washes-the-other approach. Factor three which relates to networking (interaction with stakeholders) is important in reducing the authority gap as seen by the items that loaded on this factor.

Of particular interest here are the items loading on factor four EI; these agree with the literature that emotional intelligence allows for good relations with other people, brings self-awareness and the awareness of other people. This positively impacts on team building and cooperation between parties within the project structure and those stakeholders of particular interest. Six items did not load and were discarded. The preceding studies lead to the summary and the conclusions that; ‘genuineness of management,’ ‘empowerment of project managers’ ‘the responsiveness’ of the management, networking/interacting with stakeholders, emotional intelligence, ‘responsiveness.’ avoiding confrontation with functional managers, resorting to persuasive methods and reciprocal favours will make it possible for the project leader to get things done.
In view of the conclusions above, it is recommended that project leaders understand the impact of the authority-gap on the project execution processes. To avoid this, there should be a deliberate program for future project leaders to emphasise the effects of powerlessness in a matrix organisation. Furthermore research should be conducted on the specific soft skills required by project leaders to be effective. Such research findings should therefore be incorporated into the training of project leaders to develop the requisite soft skills that will enhance project leaders’ performance. A well trained project leader with above average cognitive abilities and emotional intelligence may be able to avert avoidable conflicts, reduce resistance, promote teamwork, and have a motivated team. To complement that, the leader should know the importance of keeping good political relations with all the stakeholders in the project.

10.4 IMPLICATIONS FOR FURTHER RESEARCH

There are other aspects of this research that need to be looked at closely, given that it is now clear that emotional intelligence, interpersonal relations, stakeholder interaction, and the personality of the leader improve the prospects of successful execution. The implications of these findings are that strong emotionally intelligent project leaders with the necessary experience be employed to provide training for the upcoming project leaders. Much more would be learnt on the job compared to the theory that will be taught in training sessions, this does not nullify the training programs. The fast changing market terrain introducing a lot more new technology may allow for a symbiotic relationship between the born-before-computer (BBC) generation (the old and experienced project leaders) and the emotionally unstable (EU) to work together and complement each other’s’ weaknesses. Extensive research and emphasis in classrooms and training sessions should be put on developing soft skills for effective project leadership. Whilst technical expertise may be necessary, it is important for project leaders to know that technical expertise does not do projects, it is people who get the work done.

The forms of power are surprisingly not regarded as important as would have been expected since they should relate closely to the reduction of the authority-gap. This gives the impression that effective project leadership is centred more on the individual leaders themselves and less on other factors or stakeholders in the...
system. Whilst the ability to interact is recognised, it is important to know that the levels of emotional intelligence may actually translate to any other of the variables under study.

10.5 LIMITATIONS OF THE RESEARCH

The aim of the study was to identify critical competencies required for effective and strategic project leadership in a world where management-by-projects are increasingly becoming the norm. The research may not be considered as exactly representative of all South African cultural groups because of the skewed distribution of the respondents along racial lines. Generally more whites and some coloureds would be in the position to meet the requirements of the target population. The distribution in the workplace is not according to the national demographics (ratio where blacks represent 80% of the population), and not even near the Cape Town metropole’s distribution of 1:12:26:30 (Indian, white, black and coloured). The results therefore may not be used freely as a generalisation on the population of South Africa, but the results reflect the project environment adequately. The collection of data has proven to other limitations were in the filling in of the questionnaires; the researcher was not personally involved and did not have control over the processes at the respondent level. The population should have been stratified to bring about a more general and less skewed understanding of the perceptions of effective leadership in projects in Cape Town.

10.6 CONTRIBUTION OF THE STUDY

This study is contributing directly to the body of knowledge eight items that should be further explored by other researchers to confirm these findings, but they can be used now as fact. The findings can be divided into three categories, namely:

- New knowledge hitherto unknown to date to the best of the researcher’s knowledge.
- New knowledge derived from or implied by the findings of the research as discussed above, and
• Surprises on what was always taken for granted as knowledge (at least by the researcher) and came up differently in the findings.

The research results above are a culmination of sifting through well over 441. This sample is considered large enough given the positions of the respondents in this survey, although this is restricted to the Cape Metropolis. The findings will be discussed in three categories as stated above.

New knowledge hitherto unknown; the findings established four (4) key discoveries that have not been seen in previous literature. For effective authority gap reduction, there is a need for:

**Genuineness** by the senior management towards the project execution process, the project leader, and in how they as stakeholders should participate in the whole process. There is a need to genuinely allow the project manager to have a degree of autonomy, and that of giving him necessary access to the resources necessary for project execution.

**Responsiveness** by the project leader to both the team mates / subordinates and to the senior management in all requests and expectations. Research findings show that managers have respect as one thing they expect from their subordinates the most, and results also show that managers who are more responsive get the most respect. Respect allows the manager to get work done, and this is earned from how leaders respond to situations. Responsiveness can be cultivated and developed, and may rhyme very well with emotional intelligence because it relates closely to people’s emotions which need to be understood. This behaviour entails, willingness to listen to others, willingness to share information, and ability to communicate well.

**Extroversion** of the project leader is critical in creating awareness, facilitating interaction, and in boosting the morale of the team members in general. This is part of human personality, some people are extroverts whereas the others are introverts. Extroverts are outgoing, interact freely and are generally talkative and energetic. Three quarters of the American population is believed to be extroverts, that tells us therefore that extroversion is not a guarantee of
effective leadership, it is simply one behaviour that will allow for shareholder interaction.

**Empowerment** of the project manager; this is the single most important upliftment for the project manager working where there is such a disabling authority gap. The project leaders need to be genuinely empowered by senior management, as this will boost the morale of the manager and contagiously give his excitement. Empowerment is giving basic opportunities and encouragement to either develop or utilise the skills and competencies. There is a degree of autonomy in empowerment, and this is necessary for effective project leadership in embedded projects.

A new finding on how interpersonal relations were perceived by the respondents by introducing a bi-pronged construct against the traditional monolithic-approach. The respondents perceived this as dual with **introversion and extroversion** as new and separate entrants in place of this variable. Further to this, the research findings throw new light on the possible effectiveness of extroverts above introverts as good relation builders. This should be taken as another area of extensive research to expand on the qualities required for effective leadership. **Extroversion may make someone better in building interpersonal relationships.**

The research findings indicate that there is a relationship between the discoveries in that one may lead to the other. Starting with empowerment, an empowered project leader may be able to decide on employment or who is seconded to him, be able to promote or decide on remuneration for team members, and possible be able to remove those who do not cooperate. This will provide the same authority that a functional manager has, and may reduce resistance and consequently the authority gap.

**New knowledge implied from findings;** there is a school of thought suggesting that there is no need for project leaders or rather the project leader has got no direct impact on the success or failure of the project. This study has established:
• A relationship between the personality of a leader and the impact that has on team member performance. The acceptance of personality of the leader as a factor of productivity and emotional intelligence as a critical component of personality supports the fact that the presence of a leader with certain characteristics promotes productivity in projects.

• Two leadership styles seem to have been implied, contrary to the current views on leadership that support transformational leadership. This brings about a new controversial (implied) finding that says, if it is true that women are good transformational leaders, in this research only transactional and autocratic leadership styles are supported and these are predominant styles of leadership by men. There are those who argue against gender based leadership styles, but it is agreed on that women are more consultative, lead by consensus, democratic and participative in their approach. These styles are not implied in this research, which in a sense says women may not be good project leaders after all.

• These implications create a new terrain from which to launch research, possibly more industry focused research on women and men leadership need to be conducted. In this research, barely one fifth of the respondents came from construction which may be perceived to have needed of aggressive leadership. The rest would have been your average light weight businesses.

**Surprises on what was always taken** for granted as knowledge and came up differently in the findings.

a. Knowledge areas though they have been emphasised extensively by the PMBOKs, it is surprising that these **do not feature as important critical core competencies** for effective project leadership. The respondents perceive that they are not of critical importance, presumably because they are generally lead by specialised people and are not necessarily the work of the project leader.

b. Communication has featured fairly well, and though it has always been known to be important, this research gives more **prominence to communication** than to other knowledge areas. Expectations were that cost management,
human resource management and procurement management were going to be at the top.

c. Emotional intelligence is discussed in leadership literature ‘in passing,’ as it has not been considered to be of great importance. The research findings to tell a different story, as it seems to form the basis of all the other variables discussed. In a sense all the other variables discussed are essentially derivatives or extensions of emotional intelligence.

The following personality attributes highlighted in the research all belong to emotionally intelligent people, who can be described as follows:

- An individual with high EI will be able to consciously create a good working environment because they understand the emotions of other people and know how to treat them,

- they can make friends and keep both communication and interaction alive, they are emotionally stable and have developed a personality that enables them to be acceptable by many people,

- they know when and how to give up without losing out, they will know what leadership style to apply to who because they understand people’s emotions,

- they can deal appropriately with both introverts and extroverts and will tend to be empathetic to others,

- they know how to adjust to a likable personality, because they understand emotions they can also know how best to communicate to people of different interests,

This finding suggests that the older one is the most likely they will be tolerant and appreciative apart from being wise due to experience and age. become better, more effective and able project leaders, it will therefore be best to use age as one of the criteria for deciding on who should manage a project.
10.7 GENERAL MANAGERIAL IMPLICATIONS
This study may be repeated in parts with a wider well stratified and more diverse project-team; special emphasis should be put on stratification by gender, race, and levels in the hierarchy of organisations. If sampling is done by random stratification, some aspects of the results may be different from what the current research has found out. Cultural differences, hierarchical levels, gender and type of industry stratifications should be used to identify differences based on those inherent differences. Special consideration should be given to the botho or ubuntu leadership styles which are a part of black culture and values. The diversities that need to be looked at will comprise among other things, knowledge on the gender mix, the racial mix, the cultural mixes and nationality mixes in the target population. Because culture is the primary determinant of the values and the leadership prototypes, it would be important to stratify the population accordingly. There is therefore a need of getting to the bottom of all the project management competencies influence on effective project leadership and get to understand how project leadership effectiveness impact on reduction of authority gap.

10.8 CONCLUSIONS
The projectification of organisational operations is on the increase, and projects by definition have now been moved from the engineering field to any undertaking limited by time, quality and costs. There will be many more projects to be undertaken; this necessitated the need to study project leadership as a trend for the future. This statement is supported by the increase in the enrolment of university students in project management. There is a corresponding increase and interest in the short courses in project management and related programs across industries. This research is therefore both appropriate and timely as it experiences the gap in knowledge that is necessary to produce knowledgeable and effective project leaders.

The findings have once more emphasised what type of soft skills should be focused on in training future project leaders. Soft skills seem to have been established as a requirement for effective project execution. It is also established that while interpersonal relations are important, people who are extrovert seem to benefit better than those who are introvert. Emotional intelligence featured strongly, adding to previous literature assumptions that emotional intelligence is an important aspect of
the whole process of effective management. The assumption made generally is that the older the person, the more the experience and the higher the levels of emotional intelligence.

In summary it means that communication, leadership style, interpersonal relations related to extroverts, personality, emotional intelligence and stakeholder interaction are critical core competencies required for effective project leadership. The study also reveals that effective project leadership can be successfully achieved when management is empowered with responsibility and authority of managing the project and the project team. The study indicates that genuineness and responsiveness of management are the key elements of successful effective project management.
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Dear Participant

RESEARCH PROJECT: CRITICAL CORE COMPETENCIES FOR STRATEGIC PROJECT MANAGEMENT.

Mr L. E. JOWAH is a registered Doctor of Commerce [D. Comm] student in the Department of Business Management at the Nelson Mandela Metropolitan University in Port Elizabeth, South Africa. He is currently busy with an empirical study investigating the generic critical core competencies required for effective project leadership in project based operations. It is envisaged that this study will provide useful insight in identifying key aspects related to the learning of project management given the proliferation of “management-by-projects” in the business world today.

The purpose of this study is to identify competencies that are critical for the success of projects, currently project failure rate ranges from 30 – 49% depending on the classification of project success / project failure. The questionnaire is comprised of 3 sections, Section A measuring the competencies and Section requests for biographical information. All data sources will be treated as confidential and would be used for research purposes only. The majority of the data will be reported in statistical form and no individual respondents will be identified. You can complete the questionnaire anonymously. Thank you very much for your willingness and time to complete this questionnaire.

Regards

Prof NE Mazibuko & Prof M Tait

Study promoter

Mr Larry Jowah

Research
Questionnaire

Dear Respondent

This questionnaire is an academic exercise investigating the core competencies required for effective strategic project leadership. Your identity is protected and you will not be quoted anywhere, do not put any form of identification on the questionnaire. Please respond to ALL the questions by putting an X in the respective boxes [numbers] corresponding to each statement. Use the following scale: 1= Strongly Disagree, 2 = Disagree, 3=Indifferent, 4= Agree and 5= Strongly Agree.

**SECTION A**

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<td>Gives progress information to colleagues and clients</td>
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<td>Always uses relevant communication media to stakeholders</td>
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<td>progress</td>
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<tr>
<td>Clearly communicates functional requirements for members</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Communicates clearly the project scope, charter and WBSs.</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
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<tr>
<td>PERFORMANCE</td>
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<tr>
<td>Always wants tasks completed within stipulated time</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
</tr>
<tr>
<td>Always wants his / her work completed in time</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>The WBS for the project is clearly understood and known</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
</tr>
<tr>
<td>Be a good and balanced team builder and maintainer.</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
</tr>
<tr>
<td>Should be able to identify good from performers</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>task focussed and not worry about petty excuses by workers</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Manage time well to allow completion of tasks in time</td>
<td>1</td>
<td>2</td>
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</tr>
<tr>
<td>Be able to divide work correctly into workable WBSs.</td>
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<td>Task focussed and ignores petty excuses by workers.</td>
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<tr>
<td>Need for an understanding of the role of coalition in projects</td>
<td>1</td>
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</tr>
<tr>
<td>Tactful in dealing with unpredictable followers and seniors</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Compromises when no negative effects to task achievement</td>
<td>1</td>
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<td>5</td>
</tr>
<tr>
<td>Interact with a few people to avoid familiarity</td>
<td>1</td>
<td>2</td>
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</tr>
<tr>
<td>Adaptable to any conditions without fear of favours</td>
<td>1</td>
<td>2</td>
<td>3</td>
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</tbody>
</table>

317
<table>
<thead>
<tr>
<th>Fit into my leadership prototype to have my buy in and cooperation.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good interpersonal skills and relates well to all people</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Able to work well with team members of different types</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Understand that projects are executed through people for people</td>
<td>1</td>
<td>2</td>
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<td><strong>EFFECTIVE PROJECT LEADERSHIP</strong></td>
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<tr>
<td>Should be dedicated and focused on work objectives</td>
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<td>2</td>
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<td>4</td>
<td>5</td>
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<tr>
<td>Always looks for the right ways of doing the right things</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Brave and prepared to account for errors done in good faith</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Entrepreneurial and tries new methods to improve operations</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Accepts that he/she makes mistakes and learns from them</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Realises the importance of culture in dealing with followers</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
<tr>
<td>Knows that gender is not a pre-determinant of performance</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
<tr>
<td>Racially sensitive and allows for cultural differences</td>
<td>1</td>
<td>2</td>
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<td>5</td>
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<tr>
<td><strong>PERSONALITY</strong></td>
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</tr>
<tr>
<td>Should be an agreeable and cooperative personality</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
<tr>
<td>Should have an exemplary character emphasising integrity</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
<tr>
<td>Should be tolerant of ambiguity and remain composed</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Should be focused on goals and emphasis on excellence</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>should have cognitive ability to think through clearly</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Self-confident and sure of what has to be done in the project</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>communicate and clarify the vision to the employees and entice a buy in</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>straight forward, open, transparent and reliable personality</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>KNOWLEDGE AREAS</td>
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<td>0</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>able to plan the operations and resource allocations well</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>able to organise the workforce and all necessary resources</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>able to control both human and material resources well</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>The correct time allocation is always worked out well</td>
<td>1</td>
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<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>takes calculated risks in venturing into use of new technology</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>pre-empts risk by managing not disrupts project operations</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>coach and mentor employees to make them productive</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>numerically literate and always quantifies information</td>
<td>1</td>
<td>2</td>
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<td>5</td>
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<tr>
<td>has good working knowledge right-round about the project</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
</tr>
<tr>
<td>choose correct combination of influence tactics for progress</td>
<td>1</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>influence with sensitivity, and flexibility</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
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<tr>
<td>EMOTIONAL INTELLIGENCE</td>
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<tr>
<td>learn from experience and avoids repeating past</td>
<td>1</td>
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<td>5</td>
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<tr>
<td>errors</td>
<td>shows high levels of motivation and drive for achievement</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>question issues critically, constructively and analytically</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>racially sensitive and allows for cultural differences</td>
<td>1</td>
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<td>5</td>
</tr>
<tr>
<td>Empathetic, puts himself in the place of the other people</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Self-awareness by knowing his strengths and weaknesses</td>
<td>1</td>
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</tr>
<tr>
<td>Self-management by showing emotional restraint in conflicts</td>
<td>1</td>
<td>2</td>
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<td>5</td>
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<td>Self-management - conscious of importance of good conduct</td>
<td>1</td>
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<td>5</td>
</tr>
<tr>
<td>Self-management by thinking through issues before acting</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
<tr>
<td>contextual astuteness – able to adjust to different situations</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
<tr>
<td>understands that employees have emotions and concerns too</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<td>5</td>
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<tr>
<td>NETWORKING</td>
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</tr>
<tr>
<td>Have strong human relational and interpersonal skills</td>
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<td>2</td>
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<tr>
<td>Be able to network of build a network of stakeholders</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Need for an understanding of the role of politics in projects</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
<tr>
<td>Need to meet all legal requirements of a project by leaders</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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</tr>
<tr>
<td>socialise at all levels of the organisation</td>
<td>1</td>
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<td>4</td>
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</tr>
<tr>
<td>uses networking as a strategic alliance for project operations</td>
<td>1</td>
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<td>5</td>
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</tr>
<tr>
<td>able to network effectively with senior management</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
<tr>
<td>able to network with both internal and external stakeholders</td>
<td>1</td>
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<tr>
<td>develops a reputation as an expert to influence stakeholders</td>
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<tr>
<td>POWER</td>
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<tr>
<td>able to know what power he / she has and utilise the same</td>
<td>1</td>
<td>2</td>
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<td>5</td>
</tr>
<tr>
<td>realises the importance of politics in project execution</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>uses coalition to gather support for project execution</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I think good leaders should resort to legitimate power</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Personal power is critical for effective leadership</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Good leadership should be supported by top management</td>
<td>1</td>
<td>2</td>
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<td>4</td>
<td>5</td>
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</tbody>
</table>

**AUTHORITY GAP FOR PROJECT MANAGERS**

<table>
<thead>
<tr>
<th>I have full authority to make decisions for the project</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are certain decisions I may not make as a project manager.</td>
<td>1</td>
<td>2</td>
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</tr>
<tr>
<td>Statement</td>
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<tr>
<td>--------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>I have to consult always before I make certain decisions.</td>
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<tr>
<td>I cannot decide independently on the suppliers of material.</td>
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<tr>
<td>I am not allowed to recruit employees directly.</td>
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<tr>
<td>I can only make decisions with the team members.</td>
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<tr>
<td>Occasionally I had my decisions rejected by my boss.</td>
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<tr>
<td>My boss always meddles with my decision processes.</td>
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<tr>
<td>My boss instructs me on what I should and should not do.</td>
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<tr>
<td>All decisions must be ratified by senior management.</td>
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</table>

**AUTHORITY GAP FOR TEAM MEMBERS**

<table>
<thead>
<tr>
<th>Statement</th>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have the full authority to make decisions for the project.</td>
<td></td>
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</tr>
<tr>
<td>Feel that certain decisions must be left to the project manager</td>
<td></td>
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</tr>
<tr>
<td>Must consult with senior management before taking a decision regarding the project.</td>
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<tr>
<td>Make the decisions on suppliers of material.</td>
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<tr>
<td>Are directly responsible for appointment of employees.</td>
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<tr>
<td>Are always subject to rejection by senior management.</td>
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<tr>
<td>Senior managers are always meddling with our decisions.</td>
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<tr>
<td>Am allowed to manage the project independently.</td>
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<tr>
<td>I take instructions from senior management on what I do.</td>
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<tr>
<td>Are responsible for the Gantt charts, PERT and other tools.</td>
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</table>
SECTION B. BIOGRAPHY

Please tick (v) in the relevant box and fill in the blanks when necessary.

Please indicate your gender

<table>
<thead>
<tr>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
</table>

Please indicate your age in years

<table>
<thead>
<tr>
<th>30 – 39</th>
<th>40 – 49</th>
<th>50 – 59</th>
<th>60 + YRS</th>
</tr>
</thead>
</table>

Please indicate your position in the organisation

<table>
<thead>
<tr>
<th>Project manager</th>
<th>Project team member</th>
<th>Operations staff</th>
<th>Other</th>
</tr>
</thead>
</table>

Please indicate how long have you been involved in projects at the above-mentioned level

<table>
<thead>
<tr>
<th>0 - 5 years</th>
<th>6 – 10 years</th>
<th>11 – 15 years</th>
<th>16 – more years</th>
</tr>
</thead>
</table>

Please indicate your involvement in project team meetings

<table>
<thead>
<tr>
<th>No</th>
<th>Sometimes</th>
<th>Fairly regularly</th>
<th>Always</th>
</tr>
</thead>
</table>

Please indicate how regular are you in project team meetings

<table>
<thead>
<tr>
<th>No meetings</th>
<th>For problems only</th>
<th>No stipulated times</th>
<th>Regular times</th>
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</thead>
</table>

Please indicate who calls for the meetings

<table>
<thead>
<tr>
<th>Any team member</th>
<th>Project manager</th>
<th>Senior manager</th>
<th>Scheduled dates</th>
</tr>
</thead>
</table>

Please indicate whether there are senior managers responsible for the day to day operations

<table>
<thead>
<tr>
<th>No one</th>
<th>One involved daily</th>
<th>Many involved</th>
<th>The team only</th>
</tr>
</thead>
</table>

Please indicate the industry you are involved in

<table>
<thead>
<tr>
<th>Construction</th>
<th>I.T.</th>
<th>Events</th>
<th>Other</th>
</tr>
</thead>
</table>
THANK YOU FOR YOUR COOPERATION