The Conception and Operationalization of leadership in construction companies

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ABSTRACT

Purpose – This study aims to examine how manager's leadership styles correlates with leadership outcomes and perceptions of subordinates and management in the construction industry. On the practical side, it seeks to inform project managers on how their leadership style is conceived by subordinate's and to determine how leadership is operationalized by middle management. Academically, the study aims to provide additional insights into the leadership field by contributing to the future development of this study area.

Design/methodology/approach – Leadership styles, conception and leadership outcomes in terms of effectiveness and operationalization were measured using a modified Bass and Avolio's multifactor leadership questionnaire (MLQ) and a modified Porter et al.'s organizational commitment questionnaire (OCQ). A total of 80 respondents working at construction companies in South Africa participated in the study.

Findings –The study revealed that most construction companies perceive leadership in the construction industry in South Africa to be a mixture of transactional and transformational leadership but is more transactional by nature. A strong positive correlation was found between employees and management on the conception of leadership. Managers and employees believe that immediate supervisors are managers instead of leaders. The research also indicated with a strong positive correlation between management and employees that a transformational leadership style is preferred. Employees and managers feel that leadership is operationalized in such a way that supervisors are effective leaders by continuously creating ways to increase efficiency. Traits which were rated to be the most important for leadership effectiveness are; self-confidence and motivation, Competencies which were rated to be critical for leadership effectiveness are; manage, control and communication. Leadership development is very important for the sustained operation of companies and should be linked to business strategies. A strong positive correlation was found between employees and management on the operationalization of leadership.

Practical implications – Importance of leadership in construction projects is undisputable. As the industry is going global and projects are increasingly complex, leaders have a more important role to play in sustaining success of their projects and organizations they serve and people they lead. Leadership has always mattered and its significance in the contemporary business world is now more important than ever before. Research on the

subject can make a valuable contribution to the efforts to enhance the performance of the industry. (S. Toor,G. Ofori, 2008) Managers are directly and interactively involved with employees, therefore their leadership ability demands sensitivity to others(Lekganyane, J Oosthuizen,2006). Supervisors need to be aware that different leadership styles exhibited by managers or project managers are appropriate on different types of projects. That there is a need to maintain a balance between relations with people and getting the job done because relations with people are as important as getting the job done and the two should not be considered mutually exclusive. If relations with people and getting the job done is considered to be mutually exclusive, change would not happen or be smooth as the leadership may not be effective. Matching the right combination of leadership traits, competencies and considering the required behaviour as well as the relevant situational factors is crucial.

Originality/value – This paper is an attempt to understand how leadership factors like; transformational, transactional and laissez-faire leadership is conceived and operationalized in the South African construction industry and what the relationship is between the views of subordinates and management. Information obtained from the operationalization of leadership will shed light on the effectiveness of leadership in the industry. This research also provides new information to improve shortcomings of leaders through leadership development. The assessment of leadership effectiveness and other leadership outcomes with the proper implementation of recommendations on shortcomings could improve project success rates which will ensure growth, profitability, share holder value and sustainable development of construction companies in South Africa.

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CHAPTER1: ORIENTATION

1. 1 INTRODUCTION

South Africa, a country plagued by the presence of crime, corruption, poverty, HIV / AIDS pandemic and now recently the xenophobic violence is calling for a leadership overhaul, whereby leaders reinvent themselves or make way for new leaders to address the above challenges. The business environment of construction organisations, and consequently, the way such businesses have to be managed, has changed significantly over the last 50 years. These changes emanate from two principal sources: global/macroeconomic changes, and sector-specific changes. In many cases these changes have caused the fortunes of construction organisations to decline, but in contrast, some organisations have excelled throughout this period (Nesan and Holt, 1999). Effective leadership is essential for every construction project and leadership behaviour is an important variable having significant impact on the success of project management (Gharehbaghi and McManus, 2003, p54).

In practice, there are many construction companies with projects facing problems and the causes of the problems can often be traced to the project managers. Some of them may have insufficient competencies or their traits may not fit with the nature of their work. Besides, they may use inappropriate leadership styles in dealing with subordinates on construction projects. Effective performance and great work outcomes from subordinates are always desirable, but they do not always happen. People normally respond well only to appropriate types of leadership. The best style would lead them to work effectively (Likhitwonnawut, 1996, p40).

The construction industry is one of the most important industrial sectors in an economically developing country such as South Africa. Proper leadership style of project managers is necessary to sustain the industry. Unfortunately, the uncertain nature of this industry coupled with the difficulty and dynamics of most construction projects create daily problems for professionals (Nguyen *et al.*, 2004, p400).

Leadership research is gaining increasing importance in construction management since it can have much effect on work performance and impact on project outcomes. Appropriate leadership approach can shape subordinates' performance in a desirable way and facilitate construction projects to go smoothly. In addition, adopting suitable leadership approaches will create subordinate satisfaction with a higher project success rate as a result. As leadership is gaining importance how leadership is conceived and operationalized is becoming a key management question.

Leadership brand is a reputation for developing exceptional managers with a distinct set of talents that are uniquely geared to fulfil customer's and investor's expectations. Thus in line with the above statement it can be conceded that a construction company with a leadership brand would inspires faith that employees and managers will consistently make good on the firm's promises. (Ulrich and Smallwood, 2007). The research seeks to investigate and assess how leadership is conceived and operationalized in the practice within the construction industry in South Africa.

1. 2 PURPOSE OR OBJECTIVES OF THE RESEARCH

The primary objective of this study is to investigate and asses how leadership is conceived and operationalized in the construction industry in South Africa.
The secondary objectives include:

- defining leadership in the context of the construction industry;
- determine if project leaders are using leadership approaches or managerial approaches during the execution of projects.
- highlighting the leadership traits that suitable leaders should possess and the manner of distinguishing such leaders;
- establishing the leadership competencies that suitable leaders should possess.
- determine how employees and management experience leadership.
- draw conclusions and make recommendations on leadership conception and operationalization in the construction industry.

1. 3 STATEMENT OF THE PROBLEM AND SUB-PROBLEM

1.3.1 RESEARCH PROBLEM

One of the challenges that every supervisor or manager faces is the task of bringing people together to function as a team. In today's competitive environment, managers need to decide what will enable their team to provide the highest level of quality, customer service or task accomplishment. Although there are rare exceptions, in most situations, the ability to respond to quality and customer service is much stronger when people operate as a team (Stark & Flaherty, 1999:p125). The manager with the ideal leadership traits is needed to ensure a learning environment with strategic direction, ability to cope with change and finally the ability to innovate for excellence (Moran & Brightman, 2001:p66-74 and Potter, 2001:p54-58).

Managerial work is being altered by sweeping trends in economics, politics, and society (Dess & Picken, 2000, p50). The trend toward globalisation continues to accelerate as foreign competition intensifies, foreign markets become more important, and more companies become multinational or participate in cross-national joint ventures. Cultural

diversity of the workforce within organization is increasing. To build cooperative relationships requires considerable empathy, respect for diversity, and understanding of the values, beliefs, and attitudes of people from different cultures. Changes in the structure of organizations present yet another challenge. Many organizations are being decentralized into smaller, semi-autonomous units. Flattened by eliminating layers of middle management. Team-based organizations which is mainly found in the construction industry have more shared leadership, and team leaders are expected to be more of a coach and facilitator and less of a director and controller (Yukl& Lepsinger,2004, p60).

Another trend is increased reliance on outside suppliers, consultant and sub contractors that provide supplies, materials, or services when needed on a just-in-time basis. In the many cases the vertically integrated firm that did everything itself is being replaced by a networked organization that outsource most activities to specialists. Despite many similarities leader in construction organizations are expected to function more like entrepreneurs than traditional managers, and they need more knowledge about information technologies and more skills in project management (Horner-Long & Schoenberg, 2002, p70).

Effective leaders are not simply born or made; they are born with some leadership ability and needs to develop it. Whatever a person's leadership ability is, a person can develop his leadership skills (Lussier & Achua, 2004:p9).With today's focus on teamwork, leadership ability is important to everyone in the organisation, not just managers. The definition of leadership does not suggest that influencing employees is the task of the manager alone; employees influence others. Anyone can be a leader within any group or department (Lussier, 1998:p213). Leaders are important in a variety of organisational settings (Kets, 2001:p1-40). Organisations would be less efficient without leaders and, in extreme cases, would be unable to accomplish purposeful goals (Ivancevich & Matteson, 1996:p411). Leadership skills can be developed to be used in personal and professional life as leader and follower (Lussier & Achua, 2004, p20). Considering the importance and relevance of leadership in order to ensure managerial and organisational success, leadership needs to be further analysed.

Some authors (e.g. Bennis & Nabus, 1985; Zaleznik,1977, p40) contend that leadership and management are qualitatively different and mutually exclusive. The most extreme distinction involves the assumption that management and leadership cannot occur in the same person. In other words, some people are managers and other people are leaders. The definition of managers and leaders assume they have incompatible values and different personalities.

In contrast Covey (1992) views management and leadership in his book titled; Principle-Centered leadership as not mutually exclusive; in fact, it might be said that leadership is the highest component of management. And leadership itself can be broken into two parts one having to do with vision and direction, values and purposes, and the other with inspiring and motivating people to work together with a common vision and purpose.

1.3.2 RESEARCH QUESTION

How is leadership conceived and operationalized in the practice within the construction industry?

1.3.2. a Sub-problem 1:

How is leadership conceived within the construction industry?

1.3.2. b Sub-problem 2:

How is leadership operationalized in the practice within the construction industry?

1. 4 DEFINITIONS

The following definitions were adopted for the purpose of this research:

Leadership is 'the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organization…" (House et al.,1999,p. 184).

Management Rost (1991) defined management as an authority relationship that exists between a manager and subordinates to produce and sell goods and services.

Conception of leadership- is seen as an indication of the perceptions of employees and management of the leadership style that the project leaders use. (Defined for the purpose of this research)

Operationalization of leadership-is seen as an indication of the effectiveness and utilisation of leadership styles and is mainly an expression of how the leadership outcomes are perceived by employees and middle management (Defined for the purpose of this research)

Project management can be seen as an essentially bureaucratic system of control, based on principles of visibility, predictability and accountability, and operationalized through the adherence to formalized procedures and constant written reporting mechanisms (Hodgson, 2004).

1. 5 DELIMINATION OF THE STUDY

DEMARCATION OF THE STUDY

One of the essentials required for managing an organisation is leadership. Managerial leadership has been identified as important and critical to managing organisational

change and establishing future sustainability (Bartol & Martin, 2004:p3). It is for this reason that the role of leadership is emphazised. This paper looks into the concept of leadership. The author would like to assess how employees and middle management perceive leadership in the frame work of the leadership traits and competencies supporting effectiveness. (Lekganyane J, 2006, p239)The focus is mainly on the construction engineering sector of South Africa in the Gauteng and North West provinces.

Ivancevich and Matterson (1996:p411) is of the opinion that leadership is a narrower concept than management. They further maintain that leaders may or may not be managers. The main purpose of exerting leadership influence is to achieve relevant goals. Leaders attempt to influence individuals or groups to achieve important goals (Ivancevich & Matteson, 1996:p412). The above is not necessarily correct. One can view leadership as a wider concept then management. Management can be viewed as critical sub-responsibilities of the leader.

Some studies done by authors like Lekganyane dispute the claim that leadership makes a difference. However, there is plenty of evidence to the effect that leadership can impact performance. Leaders do not always make a difference, but they can and do in multiple cases (Gibson *et al.*, 2000:272). (Lekganyane, 2006, p 239) The difference that is made through the operationalization of leadership in the construction industry in the frame work of project success and leadership effectiveness as perceived by employees and middle management is the focus of this study. How leadership is conceived and operationalized by other stakeholders like; clients, environmentalist, shareholders, suppliers and subcontractors is an important part of the investigation but does not form part of this research.

1. 6 IMPORTANCE OF THE STUDY

There are numerous theories and an enormous amount of empirical work. Qualitative work is rare but has become increasingly common. Sometimes the field is divided into three broad categories: leader traits, leader behavioral style, and symbolic leadership (Andersen, 2000)(S. Toor,G. Ofori, 2008).

Sashkin and Garland (1979) conclude that ‘‘By any objective measure, the study of leadership has failed to produce generally accepted, practically useful, and widely applied scientific knowledge’’ (p. 65). According to Yukl (1989) the field

. . . is presently in a state of ferment and confusion. Most of the theories are beset with conceptual weaknesses and lack strong empirical support. Several thousand empirical

studies have been conducted on leadership effectiveness, but most of the results are contradictory and inconclusive (Yukl,1989, p. 253).

Fiedler (1996, (p.241) complains that ‘‘there has been much moaning and groaning in the past that we didn’t know anything worthwhile about leadership, that leadership theories and research lacked focus and were chaotic, and some writers even asked whether there is such a thing as leadership’’. The commitment to an objectivist paradigm promising the accumulation of knowledge through development and verification of hypothesis has not led to the delivery of the goods (Alvesson & Deetz, 2000). Practitioners seem to view academic leadership as abstract, remote, and of limited relevance (Burack, 1979; House & Aditya, 1997)(S. Toor,G. Ofori, 2008).

There is a wide spectrum of definitions of leadership and focus on the subject matter. Yukl (1989, p254) notes that ‘‘the numerous definitions of leadership that have been proposed appear to have little else in common’’ than involving an influence process. He seems to attribute part of the lack of progress in the field to its variety and, like many others in the field, wants more homogeneity and coherence. However, the author doubt that a common definition of leadership is practically possible and whether it would be very helpful if it were. It does not hit the target, and may also obstruct new ideas and interesting ways of thinking. That two thirds of all leadership texts do not define the subject matter may be read as supporting the view that leadership is indeed difficult to pin down (Rost, cited in Palmer & Hardy, 2000)(S. Toor,G. Ofori, 2008).

The review by Shamas-ur-Rehman Toor, George Ofori, (2008, p352-371); A review of empirical studies and new directions for research, found that empirical studies on leadership in the construction industry mostly base their conclusions on the perceptions of respondents without providing objective measurement of outcomes of the leadership process. Hence, there is a need to evaluate leadership performance by objective measurements such as general effectiveness and follower satisfaction, follower well-being, organizational and project performance, personal growth of leaders, influence on innovation, effectiveness in terms of cost, time, and quality, management and satisfaction of stakeholders, decision making and dispute resolution capabilities, and interface management (see Toor and Ofori, 2008a). Objective measurement of leadership outcomes in the construction industry will help organizations to estimate the return on the investment in leadership development programs (Toor and Ofori, 2007)(S. Toor,G. Ofori, 2008).

This research will provide new information on how leadership is conceived in the construction industry and what can be done to improve shortcomings of leaders through

leadership development. Information obtained from the operationalization of leadership will shed light on the effectiveness of leadership in the industry. The assessment of leadership effectiveness and other leadership outcomes with the proper implementation of recommendations on shortcomings could improve project success rates which will ensure growth, profitability, shareholder value and sustainable development of construction companies in South Africa.

1. 7 OUTLINE OF THE RESEARCH REPORT

Orientation of the research is done under chapter 1 where the author outlines the purpose and objectives on the research. The life problem and sub-problem is discussed and a problem statement is established which is followed by a research problem and research question. The study is delaminated and its importance is established with related definitions. Foundation of the research study is outlined in chapter 2 where an overview is given of the South African construction industry and the role of leadership. The Research hypothesis and null hypothesis is then established. The literature review is outlined in chapter 3 where the relevant leadership theories and leadership frameworks are discussed with a focus on leadership traits and competencies as a guide to measure leadership effectives. Research methodology is outlined in chapter 4 where the author discusses the methodology that was followed during the research. Key questions and concepts are also outlined with the limitations of the research. Research results is outlined in chapter 5 where the author looks at findings of this research and findings of other related studies. Data analysis is conducted which is followed with a discussion on ethical considerations of the research. This data analysis section is concluded with a discussion on significance and validity. Research closeout is outlined in chapter 6 where the author discusses research findings ,draw conclusions on findings and make recommendations. Recommendations are made for future research. An annexure section is included which contains data from related studies, research tools that was used during this research and the research schedules.

CHAPTER2: FOUNDATION OF THE RESEARCH STUDY

2.1 OVERVIEW OF THE SOUTH AFRICA CONSTRUCTION INDUSTRY

Most industries are dynamic in nature and the construction industry is no exception. Its environment has become more dynamic due to the increasing uncertainties in technology, budgets, and development processes. An engineering construction project is completed as a result of a combination of many events and interactions, planned or unplanned, over the life of a facility, with changing participants and processes in a constantly changing environment (Sanvido et al., 1992). The concept of project success has remained ambiguously defined in the construction industry. Project success is almost the ultimate goal for every project. However, it means different things to different people. While some writers consider time, cost and quality as predominant criteria, others suggest that success is something more complex. The ability of a project manager to lead or manage is a major factor toward project success (Albert, 2004).

Leadership is 'the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organization…" (House et al., 1999: 184). Rost (1991:p45) defined management as an authority relationship that exists between a manager and subordinates to produce and sell goods and services.

Historically the construction industry mainly operated in a context of management being managers instead of leaders. There is a continuing controversy about the difference between leadership and management. It is obvious that a person can be a leader without being a manager and a person can be a manager without being a leader. Rost (1991:p45) proposed that leading was not necessary for a manager to be effective in the producing and selling goods and services. However, even when authority is a sufficient basis for downward influence over subordinates, a leadership relationship seems necessary for influencing people over whom the leader has no authority (e.g peers). In organizations where change is unavoidable like construction companies a leadership relationship with subordinates also seems necessary.

For several years, the mainstream paradigm of leaders in the construction industry has been technology- and project-oriented (Pries et al., 2004) and focused on management (Skipper and Bell, 2006a). This orientation of construction firms and conservative culture of the industry is resulting in a shortage of skilful "project leaders" although it has produced a large number of "project managers" (Toor and Ofori, 2006; Toor and Ofori, 2008a). Other studies have noted that construction managers are hardly perceived as leaders (Russell and Stouffer, 2003). The lack of focus on leadership is not only the case in practice; academic research in construction also seems to have done little in the area

(Odusami et al., 2003; Chan and Chan, 2005). Langford et al. (1995) opine that the low volume of leadership studies in construction is due to the lack of knowledge of the industry on the part of social scientists and a lack of understanding of social sciences by those in the industry. In the construction literature, studies on leadership mostly concentrate on investigating the motivational factors and the personal characteristics of project managers (Dulaimi and Langford, 1999). In their recent proposal for authentic leadership development in the construction industry, Toor and Ofori (2008a,b,c) have also lamented on dearth of leadership research in the sector. They assert that the sector has paid too much attention on “management” to the exclusion of “leadership”. However, in recent years, there has been an increasing recognition of the importance of leadership and the role it plays in delivering successful construction projects. This appreciation of leadership in the construction industry has resulted in a slow but gradual increase in the number of publications on leadership and related topics (see Toor and Ofori, 2007) (Shamas-ur-Rehman Toor, George Ofori, 2008, p352-371).

Some of the recent initiatives of the International Council for Research and Innovation in Building and Construction (CIB) have also resulted in formation of a task group on leadership in construction (TG64) which has released its ambitious plans. The introductory statement of TG64 notes that “The challenges of globalization, new markets, changing demographics and new technologies are transforming the focus of construction leaders and require the implementation of new competitive strategies, forging of international alliances and the adoption of new practices. The industry needs to develop, implement and support the leadership required to successfully lead construction projects and organizations in the new construction environment.” (CIB News Letter, 2006). To make progress in the efforts towards the achievement of these objectives, and the furtherance of research on leadership in the construction industry in general, it is pertinent to review the work that has been done on different sub-topics of leadership in construction and consider the state-of-the art of research in this area. By considering past research and ongoing changes in the global construction environment, a road map for leadership research in the construction industry can be prepared to meet the current needs, and the long-term development of construction industry leaders(Shamas-ur-Rehman Toor, George Ofori, 2008, p352-371).

Modern leadership goes beyond getting people to do what the leader wants them to do. Leadership today is about bringing out the very best people have to offer and helping to focus everyone's energy and enthusiasm along a unified front to achieve common goals. Outstanding leaders assess their own abilities to lead. They truly care about people, and they are responsive to the concerns of others. This people-oriented attitude creates one of the most powerful conditions for successful leadership - trust. Modern leaders build

teams and oversee the critical elements of teamwork - communication, cooperation, and collaboration. Effective leaders encourage shared values among employees, such as open communication, honesty, quality, respect, and mutual support. Appropriate leadership in the construction industry results in self-managed teams and shared leadership among team members. Progressive leadership will be required for improvement, growth, and survival of construction businesses in the next millennium. Spatz D M (1999,p64).

Defining managing and leading as distinct roles, processes, or relationship may obscure more than it reveals if it encourages simplistic theories about effective leadership. Most scholars seem to agree that success as a manager or administrator in modern organizations necessarily involves leading. How to integrate the two processes has emerged as a complex and important issue in the organizational literature (Yukl& Lepsinger, 2004).

2.2 SITE MANAGEMENT AND PROJECT LEADERSHIP

Site managers are the formal project leaders of construction projects. They are responsible for the day-to-day management of a wide range of activities on the construction site, including the managerial, technical, and legal aspects of work. The site manager is thus a specific type of project leader holding a central and decisive function in the construction project. The literature on project leadership and project management (So¨derlund, 2004; Hobday, 2000; Lundin and So¨derholm, 1995) emphasizes the complexity of the project leader's work (Alexander Styhre, 2007,p275).

Early studies of project leadership, such as Wilemon and Cicero (1970) and Butler (1973), point to the ambiguities and conflicts built into the project leader role. Since projects are designed to accommodate complex and "extraordinary" activities which do not fit into the conventional organization form, projects tend and are supposed to be more ad hoc and flexible than regular organizations. As a consequence, a substantial part of the project management literature is preoccupied with the formalization and control of projects (Hodgson, 2004; Clegg and Courpasson, 2004; Ra¨isa¨nen and Linde, 2004). A more critical view of project management emphasizes that in order to render project management practices legitimate, these have been modelled on conventional and, in many cases, outmoded bureaucratic procedures and routines (Hodgson, 2004). Hodgson points to this Janus-faced nature of project management: Project management can be seen as an essentially bureaucratic system of control, based on principles of visibility, predictability and accountability, and operationalized through the adherence to formalized procedures and constant written reporting mechanisms. At the same time, however, project management draws upon the central rhetoric of empowerment, autonomy and

self-reliance central to post-bureaucratic organizational discourse (Hodgson, 2004, p. 88) (Alexander Styhre, 2007,p277).

The construction industry has from the outset been projectified (in Midler's, 1995, apt term) and thus site managers rely on a long professional tradition. Fraser (2000) showed that the site manager's personal traits significantly influenced the effectiveness of the construction project, testifying to the common belief within the industry that site managers play a key role in the effectiveness of construction projects. Site management is characterized by a high work overload, long working hours, and many conflicting parties to deal with including the management, the subcontractors, the subordinates, the client, etc. This trait of the job makes it very prone to stress. Studies of site managers suggest that they experience their work life as problematic in terms of needing to juggle a multiplicity of activities and because they have to perform a work role wherein it is essentially problematic to predict forthcoming events and occurrences (Styhre and Josephson, 2006; Mustapha and Naoum, 1998; Davidson and Sutherland, 1992). In addition, the work of the site manager has become more and more focused on administrative and legal procedures than on leading the actual construction work on site (Styhre, 2006). By and large, the work of the site manager demands the capacity to navigate a work situation fraught with ambiguities as well as emerging and unpredictable events and occurrences. Given these characteristics of the job, construction industry companies have worked on different approaches to supporting their site managers, including additional administrative staff, increased engineering support, and leadership training (Alexander Styhre, 2007,p279).

2.3 UNIQUE CHALLENGES OF A UNIQUE INDUSTRY

The uniqueness of the construction industry is probably the most often mentioned feature in books and journals. This uniqueness also makes construction project management a distinct discipline as it poses considerable challenges in various contexts. Toor and Ofori (Toor, Ofori,2006) present the taxonomy of construction industry challenges which comprises industry specific challenges, general business challenges, and operating environment challenges (socio-cultural, economic, technological, legal and regulatory, and ethical). Industry specific challenges include poor social image of the construction industry, fluctuating construction activity, greater private-sector participation in infrastructure projects, globalization of the construction industry leading to increased foreign participation in domestic industries, growing size of projects, the need to integrate an increasingly large number of construction processes, multi-project environments, widening application of franchising in the industry, increasing vertical integration in the packaging of projects, and increasing trend of strategic alliances such as mergers, acquisitions, and partnering relationships (Shamas-ur-Rehman Toor *, Ofori, 2007).

Other researchers note challenges such as the gap between research and practice and the need to attain the highest client value as well as its creation, capturing, and distribution. The construction industry faces major leadership challenges such as those relating to the workforce including lack of quality people owing to difficulty in attracting talent, ageing workforce, dealing with issues such as change or transition, teamwork and communication, and training and education. One major challenge of traditional construction paradigm is the emergent human resource strategies despite the fact that industry is badly suffering from scarce human resources. Toor and Ofori (Toor SR, Ofori G,2006) note that the socio-cultural challenges facing the industry include spreading wave of terrorism and political upheavals and cross cultural issues. Economic challenges include funding difficulties, uncertain economic conditions, threats of high inflation, and rapidly fluctuating stock values and exchange rates. Technological challenges include increased use of information and communication technology (ICT) such as in e-procurement, technological gap between the industries in developed and developing countries and matters of technology transfer, and growing need for innovation to gain competitive edge. Legal and regulatory challenges include different legal systems, litigation procedures, and arbitration methods within and across countries. Ethical challenges comprise corruption in both developing and industrialized countries and fraudulent and unethical professional practices (Toor SR, Ofori G,2006)(Shamas-ur-Rehman Toor *, George Ofori, 2007).

These challenges, together with rapid changes in the business culture have led to a widespread adoption of flattened organizational structures and empowerment strategies. To improve the operational flexibility of organizations, several new structures have emerged such as networks, collaborations, federalist structures, the shamrock structure, and virtual organizations. Pries et al. (Pries F, Doree A, Van Der Veen B, Vrijhoef R, 2004;22:7–10) note that the mainstream paradigm of construction industry leaders is conventional in nature and remains technology- and project-oriented. He argues that industry leaders must take appropriate initiatives to change the old paradigms and make the construction industry more flexible to adapt to the modern business environment. There lies a task ahead and construction leaders need to develop necessary capabilities to accomplish the future challenges (Shamas-ur-Rehman Toor *, George Ofori, 2007).

2.4 LEADERSHIP

There are growing indications that many corporate organisations in South Africa are warming up to the realisation that it has a social responsibility not only to the community it services, but extends to the country and the international community. This may necessitate a strategy for survival, as a result of pressures from interested stakeholders,

further to exploit South Africa's natural resources, space and exquisite beauty, and to ensure interconnection that will enable South Africa to compete globally. To this end companies will have to build leadership pools with candidates and really apply leadership theory effectively. Having general leadership qualities combined with specific leadership qualities needed to meet unique future challenges, requirements and situations (Meyer and Boninelli, 2004, p298).

The word leadership means different things to different scholars hence there are various perceptions of leadership. It has been described in terms of the position, personality, responsibility, influence process, an instrument to achieve a goal, behaviours, result from interaction and given some other meanings by various scholars. Most definitions have a common theme of directing a group towards a goal. Stogdill defined leadership as the process (act) of influencing the activities of an organized group in its efforts toward goal setting and goal achievement (Stogdill, 1950). (S.O Ogunlana,K Limsila, 2008,p164). In addition Ivancevich and Matteson defined leadership as an influence in an organizational setting or situation, the effects of which are meaningful and have a distinct impact on and facilitate the achievement of challenging organizational relevant goals (Ivancevich & Matteson, 1996:412 and Northouse, 2000, p30). These definitions suggests that a person can influence the behavior of others (Bass, 1990:45). The ability to influence does not solely emerge from a person's position in the organisation.

Leaders can be found everywhere in organisations and they make themselves stand out when, through the application of influence, relevant goals are achieved. Lussier (2006:75) and Lussier and Achua (2004:5) define leadership as "the influencing process of leaders and followers to achieve organisational objectives through change". Daft (2005:552) continues to minimise the definition of leadership to: "the ability to influence people toward the attainment of goals." (Daft & Marcic, 2004:5). Kinicki and Williams (2006:444) adapt their take on this definition as: "Leadership is the ability to influence employees to voluntary pursues organizational goals".

Leadership has been defined in terms of traits, behaviours, influence, interaction patterns, role relationships, and occupation of administrative position. Yukl, 2006, p100 has cited about ten definitions of leadership from different authors, and it is believed that there are more definitions than that. It is therefore difficult to establish one all-inclusive definition. The leadership role is sometimes perceived as a pure management activity, in other cases it is perceived as synonymous with power and others will describe a leader as the popular person.

With even a cursory investigation of typical leadership studies it is clear that there is no shortage of assumptions made with regard to leaders themselves. The first, and somewhat most obvious, is the assumption that all managers are leaders. A second set of assumptions is tied to the heroic conceptualization of leadership. To begin to address the problems arising from potentially false assumptions when conducting a typical leadership study, researchers must first be more explicit in their operationalizations and justification for what a leader is and why, precisely, a given sample represents "leaders". For example, in many cases managers may in actuality be acting as leaders. (Hunter, et al, 2007).The above definition seeks to describe the behaviour or the skill required of an individual who is in a leadership position.

One definition cited by Yukl, (2006: p100) which almost sums up what leadership is "leadership is defined as the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and the success of the organizations" (House, et al., 1999:184). In this research, the concept of leadership is considered in the context of the view of House ,1999 and Covey (1992) which states that; Management and leadership is not mutually exclusive.

2.4.1. Leadership approach

The present study uses charismatic leadership approach to identify the leadership style of project managers. In this approach, leadership is conceptualised by the behavioural areas from laissez-faire style (non-leadership), through transactional leadership (which hinges on reward system and punishments), to transformational leadership (which is based on inspiration and behavioural charisma) (Bass and Avolio, 1993). The approach is chosen because of its currency in management research and the efficacy demonstrated through research findings. The various components are now elaborated (Ogunlana,K Limsila, 2008,p164).

2.4.2.Laissez-faire style

An avoidant leader may either not intervene in the work affairs of subordinates or may completely avoid responsibilities as a superior and is unlikely to put in effort to build a relationship with them. Laissez-faire style is associated with dissatisfaction, unproductiveness and ineffectiveness (Deluga, 1992). (S.O Ogunlana,K Limsila, 2008,p164)

2.4.3.Transactional style

Transactional leaders focus mainly on the physical and the security needs of subordinates. The relationship that evolves between the leader and the follower is based

on bargaining exchange or reward systems (Bass, 1985; Bass and Avolio, 1993)(S.O Ogunlana,K Limsila, 2008,p164).

2.4.4. Transformational style

Transformational leader encourages subordinates to put in extra effort and to go beyond what they (subordinates) expected before (Burns, 1978). The subordinates of transformational leaders feel trust, admiration, loyalty, and respect toward leaders and are motivated to perform extra-role behaviours (Bass, 1985; Katz and Kahn, 1978).

Transformational leaders achieve the greatest performance from subordinates since they are able to inspire their subordinates to raise their capabilities for success and develop subordinates' innovative problem solving skills (Bass, 1985; Yammarino and Bass, 1990). This leadership style has also been found to lead to higher levels of organizational commitment and is associated with business unit performance (Barling et al., 1996). (S.O Ogunlana,K Limsila, 2008,p164) The following discussions on leadership factors and leadership outcomes are extracted from Bass and Avolio's (2004) MLQ manual.

2.4.5. Leadership factors

The leadership factors used to measure transformational, transactional and laissez-faire leadership style in this study are from the Multifactor Leadership Questionnaire (MLQ) developed by Bass and Avolio based on the theory of transformational leadership. They are:

2.4.5.1. Laissez-faire factor:

The non-leadership. Leaders in this type will always avoid getting involved when important issues arise and avoid making decisions.

2.4.5.2. Transactional leadership factors:

Contingent reward. This factor is based on a bargaining exchange system in which the leader and subordinates agree together to accomplish the organizational goals and the leader will provide rewards to them. Leaders must clarify the expectations and offer recognition when goals are achieved. Management-by-exception (active). The leader specifies the standards for compliance, as well as what constitutes ineffective performance, and may punish subordinates for being out of compliance with those standards. This style of leadership implies closely monitoring for mistakes, and errors and then taking corrective action as quickly as needed. Management-by-exception (passive). Passive leaders avoid specifying agreements, clarifying expectations and standards to be achieved by subordinates, but will intervene when specific problems become apparent. This style does not respond to situations and problems systematically (S.O Ogunlana,K Limsila, 2008,p165).

2.4.5.3. Transformational leadership factors:

Idealised influence charisma. This factor consists of firstly, idealised influence attributed, and secondly, idealised influence behavioural. They are the charismatic elements in which leaders become role models who are trusted by subordinates. The leaders show great persistence and determination in the pursuit of objectives, show high standards of ethical, principles, and moral conduct, sacrifice self-gain for the gain of others, consider subordinates' needs over their own needs and share successes and risks with subordinates. Inspirational motivation-Leaders behave in ways that motivate subordinates by providing meaning and challenge to their work. The spirit of the team is aroused while enthusiasm and optimism are displayed. The leader encourages subordinates to envision attractive future states while communicating expectations and demonstrating a commitment to goals and a shared vision (S.O Ogunlana,K Limsila, 2008,p167).

Intellectual stimulation-Leaders stimulate their subordinates' efforts to be innovative and creative by questioning assumptions, reframing problems, and approaching old situations in new ways. The intellectually stimulating leader encourages subordinates to try new approaches but emphasizes rationality. Individualized consideration-Leaders build a considerate relationship with each individual, pay attention to each individual's need for achievement and growth by acting as a coach or mentor, developing subordinates in a supportive climate to higher levels of potential. Individual differences in terms of needs and desires are recognized (S.O Ogunlana,K Limsila, 2008,p168).

2.4.5.4. Leadership outcomes

The outcomes from leadership quality consist of three measurable factors: effectiveness (reflects the leader's efficacy in achieving organizational outcomes, objectives, goals and subordinate's needs in their job); satisfaction (reflects the degrees to which subordinates are satisfied with their leader's behavior and the leader works with others in a satisfactory way); and extra effort (reflects the degrees to which the leader can increase subordinates' desire to succeed and subordinates exert effort higher than their normal rate). In order to develop a measuring instrument to establish how leadership is conceived in the practice within the construction industry various leadership traits for effective leadership have been identified. The framework of effective leadership will be used as tool to evaluate how leadership is conceived by employees and middle management in the construction industry. The various leadership traits and competencies are identified and discussed and is considered as the framework for the empirical research (S.O Ogunlana,K Limsila, 2008,p170).

2.5 HYPOTHESIS

2.5.1. Research hypothesis

Ho (Research), Leadership is not conceived and operationalized in the practice within the construction industry in South Africa.

Ha1 (Research), Leadership is negatively conceived and not effectively operationalized

Ha2 (Research), Leadership is positively conceived and effectively operationalized.

2.5.2.Sub-problems

Sub-problem 1

Null hypothesis, Ho1; There is no correlation between employees and management on the conception of leadership.

Alternative hypothesis, Ha1; There is a correlation between employees and management on the conception of leadership.

Sub-problem 2

Null hypothesis, Ho2; There is no correlation between employees and management on the operationalization of leadership.

Alternative hypothesis, Ha2; There is a correlation between employees and management on the operationalization of leadership.

2.5.3. Parametric and none parametric test hypothesis

Ho; The two samples come from a common distribution.

Ha; The two samples do not come from a common distribution

CHAPTER3: LITERATURE REVIEW

3.1 RELEVENT LEADERSHIP THEORIES

In the next section, selected research on project leadership is presented with a particular focus on overall leadership roles. This section includes a suggested framework referred to as the Overall-Project-Leadership-Role framework.

3.1.1. Overall-Project-Leadership-Role framework

3.1.1.1. Overall project leader roles in the construction industry.

Since Gaddis' (Chen J. Confucius , 1990) seminal article about the emergence of a new professional, referred to as the project manager, there has been a continuous discourse about what a project manager (or leader) does. An indirect answer to this question has been given by the classical body of project management, which focuses on planning methods and tools. This stream of research has been what (Engwall Collinson D.1998) referred to as the normative school of project management research, or by Kolltveit, (Cooke-Davies T,2001,p90) as the task perspective. The theoretical basis for this stream of research, as well as the idea of rational choice (i.e. that project work should be based on rationality (Cooke-Davies T,2001,p90) is found in Taylor's Scientific Management. In a recent review of project management literature, Kolltveit (Cooke-Davies T,2001,p90) argues that a shift from a task perspective towards a leadership perspective has been made within the project literature. This shift, for example, is manifested in the increased number of articles addressing leadership issues of projects. Typically, such articles follow one of two main logics: either they focus on leadership in specific industries or situations, such as clinical research (Covey SR,1992) , information technology (Crawford LH,2001), or design consultants (Crawford LH.2005) ; or they make their starting-point in existing leadership concepts and/or theory, such as charismatic leadership (Cawford LH, Hobbs JB, Turner JR, 2005) or transformational leadership (Dainty ARJ, Cjeng M, Moore DR, 2005); hence applying these concepts/ theories to the project context. Additionally, although not always explicitly stated, most leadership studies do also include a dimension of national culture as a result of the selected sample, i.e. (Dulewicz V, Higgs MJ, 2003). (Ralf Muller , J. Rodney Turner, 2006a).

An interesting observation is that, although calls have been made for more project leadership research within the field of project management for more than a decade (Fiedler FE, 1967), research on project leadership is still limited. Significant for research on project leadership is that it is the field of project management that incorporates leadership theories and models, not vice versa. A pragmatic conclusion, therefore, is that it is the field of project management that must take responsibility for the development of appropriate theories of project leadership. Within this process, two strategies are

possible. Either a inductive approach can be used where existing theories, models, and concepts from (general) leadership research is transferred, applied, and tested in the project context; or a deductive approach can be used where the specific aspects of project leadership is described, and theory is built on grounded theory inspired approaches. This paper follows the logic of an inductive approach, as a means for testing the application of Leadership approaches like; Laissez-faire style, Transactional and Transformational styles (Ralf Muller, J. Rodney Turner, 2006a).

3.1.1.2. Overall project leader roles – framework

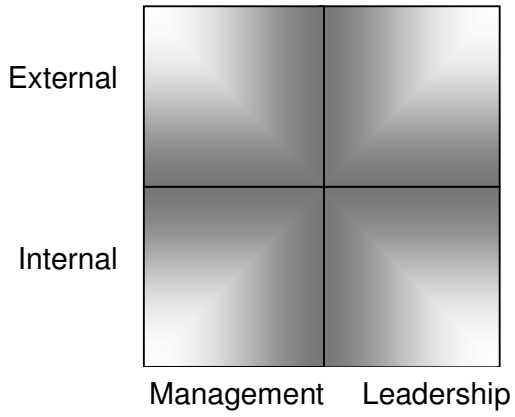
On the most general level of analysis, leadership can be demarcated into the two roles of management and leadership (Fiedler FE, 1967; Frame JD, 1987; Goleman D, Boyatzis RE, McKee A, 2002; Hair J, Anderson RE, Tatham RL, Black WC,1998) Typically, management deals with planning, budgeting, controlling, and structuring (i.e. to manage complexity). In contrast, leadership refers to a process of directing, visioning, and motivating: including visioning, coordinating, motivating, and the development of individuals (i.e. to manage change) (Frame JD, 1987). The relationship between these roles is under debate. For pedagogical reason, these two roles are often separated and polarized as described above. However, a consensus exists among researchers regarding the complementary relationship between these two roles (Fiedler FE, 1967; Frame JD, 1987; Goleman D, Boyatzis RE, McKee A, 2002; Hair J, Anderson RE, Tatham RL, Black WC,1998). In the context of projects, the relative balance between management and leadership can be said to favour to management. The reason is that, in the case of general leadership, the vision plays a significant role. However, the goal of a project is generally well-defined. As consequence, the role of a project manager has focused much on managerial activities such as planning, monitoring, and controlling, rather than on creating a vision. In addition to management and leadership roles, another important distinction worth noticing is the distinction between the internal role and the external role (Ralf Muller , J. Rodney Turner, 2006a).

The classical body of project management has had a strong focus on the internal role of the project leader, mainly as a planner and monitor. The reason for this is that the project leader (by definition) has the responsibility of managing a time-limited and goal directed administrative and organisational unit (i.e. the project). Most often, this role of the planner is also complemented by team leadership roles, such as managing the team and managing team enteries and withdrawals (House RJ,1971, p321). Other researchers have stressed the importance of managing the organisational environment. Examples of such external activities are: networking, lobbying, resource gathering and ambassadorial activities (Judgev K, Mu¨ ller R, 2005, p19), as well as organizational politics (Keegan AE, Den Hartog DN, 2004 ; Kets De Vries MFR, Florent-Treacy E, 2002). Alternatively said,

the work of project leaders can be described as a combination of managerial roles and leadership roles, as well as internal and external roles – all with complex relationships. Accordingly, to categorise the roles of a project leader on an overall level, a practical, although primitive, framework is suggested below (Ralf Muller ,J. Rodney Turner, 2006a).

The first dimension that of management and leadership, is based upon the distinction suggested by Kotter (Frame JD, 1987): where management refers to a perspective with a focus on an economic transaction between leader and follower. In contrast, leadership refers to a process of directing, visioning, and motivating: including visioning, coordinating, motivating, and the development of individuals (i.e. to manage change). The second dimension of the framework; internal role vs. external role, is a distinction that follows the managed organisational unit. Internal focus refers to issues that take part within the project; external focus refers to issues that take part outside the project, yet (may) affect the project. Combining these dimensions, the framework in Fig. 1 emerges. The first quadrant in the Overall-Project-Leader-Role framework is entitled internal management which refers to planning activities of internal issues (i.e. project management). As mentioned, the majority of research within the normative school of project management research, i.e. (Collinson D. 1998) planning tools and techniques (such as project management planning tools and techniques, Gantt charts, and Work-Breakdown-Structures) falls into this quadrant. The second quadrant is entitled internal leadership, which refers to leadership activities inside the project. Team integration is one example of an activity that would fall into this quadrant. Typically, research from a group dynamic perspective (i.e. House RJ,1971) would fall into this quadrant. The third quadrant, entitled external management, refers to formal planning activities outside the project, such as project portfolio planning, resource planning, project re-definition, and project termination (i.e. activities typically managed by a steering committee). Managing the aggregated project plan (Kirkpatrick SA, Locke EA, 1991) and the decision groups around this activity falls into this quadrant. Finally, the fourth quadrant, entitled external leadership, refers to the leadership of unplanned and informal activities outside the project. Examples of such activities are: networking, lobbying, resource gathering, and ambassadorial activities (Judgev K, Mu¨ ller R, 2005), as well as organizational politics (Keegan AE, Den Hartog DN, 2004 ; Kets De Vries MFR, Florent-Treacy E, 2002). (Ralf Muller , J. Rodney Turner, 2006a).

Figure 1: Overall-Project-Leadership-Role framework



(Ralf Muller, J. Rodney Turner, 2006a) / International Journal of Project Management 26 (2008) 338–347.

3.1.2 Views of historical leadership schools

Building on the behavioural, contingency and visionary schools of leadership, the emotional intelligence school (Goleman D, Boyatzis RE, McKee, 2002). and the competency school (see for instance: (Marshall W. Leaders,1991p80, Zaccaro SJ, Rittman AL, Marks MA, 2001, p:83.; Kets De Vries MFR, Florent-Treacy E,2002:p295; Dulewicz V, Higgs MJ,2003).have shown in a general management context that the manager's leadership style influences the performance of their organization, and that different leadership styles are appropriate in different contexts. On the other hand, the project management literature has almost studiously ignored the contribution of the project manager, and his or her competence to the success of their project (Turner JR, Mu¨llerR, 2005, p49). Over the past twenty years, there has been a changing understanding of what constitutes project success (Judgev K, Mu¨ ller R, 2005,p19). In the 1980s, researchers focused on the application of tools and techniques (Morris PWG. 1988, Pinto JK, Slevin DP1988). More recently they have focused on risk management and governance support the project receives from the parent organization ((Cooke-Davies T,2001,p185, Blomquist T, Mu¨ ller R,2006). Historically, research into project management has emphasized efficiency rather than behavioural or interpersonal factors, (Munns AK, Bjeirmi BF,1996,p8). (Ralf Muller , J. Rodney Turner, 2006a).

Over the last 75 years six schools of leadership have evolved as is presented under Table 1.

School	Period	Main idea	Example authors
Confucius	500BC	Relationships (jen), values (xiao) process (li), moderation (zhangrong)	Chen
Aristotle	300BC	Relationships (pathos) values (ethos), process (logos)	Collinson, Covey
Barnard	1938	Relationships versus process	Barnard
Trait	1930s–1940s	Effective leaders show common traits, leaders born not made.	Kirkpatrick and Locke
Behaviour or style	1940s–1950s	Effective leaders adopt certain styles or behaviours	Blake and Mouton Tannenbaum and Leadership skills can be developed Schmidt
Contingency	1960s–1970s	What makes an effective leader depends on the situation	Fiedler , House , Robbins
Visionary or charismatic	1980s–1990s	Two styles: Transformational: concern for relationships. Transactional: concern for process	Bass
Emotional intelligence	2000s	Emotional intelligence has a greater impact on performance than. intellect	Goleman et al. [19]
Competency	2000s	Effective leaders exhibit certain competencies, including traits, behaviours and styles Emotions, process, intellect Different profiles of competence better in different situations	Dulewicz and Higgs [16]

Table1; Matching the project manager's leadership style to project type Ralf Muller , J. Rodney Turner, 2006a.

Five schools have suggested that different leadership styles are appropriate in different circumstances. (Also shown in Table 1 are three historical schools going back 2500 years.) These schools have been reflected in the Project Management literature, although literature ignored the contribution of the project manager to project success (Turner JR, Mu¨ ller R,2005,P49). (Ralf Muller , J. Rodney Turner, 2006a).

3.1.2.1. Four early schools

The trait school suggests good leaders exhibit certain traits which they are born with. The behavioural school assumes effective leaders display given behaviours or styles, which can be developed. Most authors from the behavioural school assume different behaviours or styles are appropriate in different circumstances, but that was formalized by the contingency school. TurnerJR,1999, from work he did at Henley Management College, identified seven traits of effective project managers: problem solving ability; results orientation; energy and initiative; self-confidence; perspective; communication; negotiating ability. However, he did not consider whether different traits would be appropriate on different types of projects. Based on the work of (Frame JD,1987), he also took the four leadership styles, laissez- faire, democratic, autocratic and bureaucratic, and suggested how each style was appropriate at a different stage of the project life-cycle: feasibility, design, execution and close-out, respectively. The visionary school identifies two types of leaders, those who focus on relationships and communicate their values, and those who focus on process, called transformational and transactional leaders, respectively (Bass BM, 1990, p19). Confucius and Aristotle had similar views on leadership. Keegan and Den Hartog (Keegan AE, Den Hartog DN,2004,p18). predicted that transformational leadership would be more appropriate for project managers. However, in their study, even though they found a preference for transformational leadership, they could find no significant link. Thus across all projects, that one dimension was not a significant determinant of success as a project manager.

However, based on the work of Dulewicz and Higgs (Dulewicz V, Higgs MJ,2003) and interview results (Ralf Muller , J. Rodney Turner, 2006a) predict that they would find a transformational leadership style preferred on complex change projects and a transactional style preferred on simple, engineering projects.

3.1.2.2. Emotional intelligence school

This school assumes all managers have a reasonable level of intelligence. What differentiates leaders is not their intelligence, but their emotional response to situations.

Goleman et al. identify nineteen leadership competencies grouped into four dimensions:

1. Personal competencies

_ self-awareness (mainly Confucius's moderation)

_ self-management (mainly Confucius's values)

2. Social competencies

_ social awareness (mainly Confucius's values)

_ relationship management (mainly Confucius's relationships).

They also suggest six management styles, with different profiles of competencies: visionary; coaching; affiliative; democratic; pacesetting; and commanding. Through a survey of 2000 managers they identified situations in which each style is appropriate. The first four are best in certain situations, but are adequate in most situations medium to long term. They classify the last two styles as toxic. They say they work well in turn-around or recovery situations, but if applied medium to long term they can poison a situation, and demotivate subordinates. Lee-Kelley and Leong (Lee-Kelley L, Leong KL,2003;p91) set out to find whether a project manager's familiarity with the project management knowledge areas was a determinant of their success as a project manager. What they found was a project manager's self-confidence and self-belief, arising out of their experience as a project manager, influenced their perception of success. Thus the manager's emotional intelligence affects their perception of success, which can feed through to make success (or failure) a self-fulfilling prophecy. However, this is not related to the type of project (Ralf Muller , J. Rodney Turner, 2006a).

3.1.2.3. Competency school

This school says effective leaders exhibit certain competencies. It encompasses all the previous schools because traits and behaviours are competencies, it says certain competency profiles are appropriate in different situations, it can define the competency profile of transformational and transactional leaders, and it suggests emotional intelligence as one of four groups of competencies. After a substantial review of the literature on leadership competencies, Dulewicz and Higgs (Dulewicz V, Higgs MJ,2003.) identified fifteen competencies which influence leadership performance.They group the competencies into three competence types, which they call intellectual (IQ), managerial (MQ) and emotional (EQ). Dulewicz and Higgs also identified three leadership styles, which they called Goal Oriented, Involving and Engaging. Through a study of 250 managers working on organizational change projects they showed goal oriented leaders are best on low complexity projects, involving leaders best on medium complexity projects and engaging leaders best on high complexity projects. Thus, they showed that on organizational change projects: _ certain leadership styles lead to better results than others; _ different leadership styles are appropriate depending on the complexity of change. Crawford (Crawford LH, 2001, Crawford LH 2005,p7) investigated the competence of project managers, and found different profiles appropriate for different types of project. However, she did not investigate leadership style. Dainty et al. (Dainty ARJ, Cjeng M, Moore DR, 2005, p2) identified twelve behavioural competencies for construction project managers. They reduce these to two core competencies, team leadership and self-control. The competencies are discussed under the competencies section 3.6.

3.1.3 Charismatic leadership

Klein and House (1995) call charismatic leadership ‘‘a fire that ignites followers’ energy and commitment producing results above and beyond the call of duty.’’ These effects are seen to have a higher probability of occurrence in stressful environments and situations where followers look to leaders to deliver them from their difficulties (Northhouse, 2001). (Louis W. Fry, 2003, p 693).

Weber (1947) defined the characteristics that have specific charismatic effects on followers. These characteristics include

1. having a strong desire to influence others,
2. being a role model for the beliefs and values leaders want their followers to adopt (e.g., Gandhi as a model for non-violent civil disobedience), 700 L.W. Fry / The Leadership Quarterly 14 (2003) 693–727.
3. articulating ideological goals with moral overtones. (e.g., Martin Luther King’s I Have a Dream speech),
4. communicating high expectations and showing confidence in followers’ abilities to meet these expectations, which then increases their self-efficacy and sense of competence; this in turn increases their performance (Avolio & Gibbons, 1988),
5. arousing task-relevant motivation by tapping followers’ needs for esteem, power, and/or affiliation,
6. linking the identity of followers to the collective identity of the organization.(Louis W. Fry, 2003, p 693).

According to House (1977), effects that are a direct result of charismatic leadership include follower trust in the leader’s ideology, similarity between follower’s beliefs and the leader’s beliefs, unquestioning acceptance of the leader, expression of warmth toward the leader, follower obedience, identification with the leader, emotional involvement with the leader’s goals, and heightened goals for followers and follower confidence in goal achievement. Charismatic leaders thus transform follower’s self-concepts and fashion linkages between the identity and values of followers and the collective identity or values of the organization. In this fashion, workers will view the work as an expression of themselves and thus rewarding in and of itself. Thus, the effects of charismatic leadership are primarily implemented by emphasizing intrinsic motivation while de-emphasizing extrinsic motivation. In short, charismatic leadership works because it creates congruence between followers and their values and the organization’s values and culture. (Louis W. Fry, 2003,p 693).

3.1.4 Transactional leadership

Bass (1985, 1998), Bass and Avolio (1990, 1994), Benis and Nanus (1997), Burns (1978), and Tichy and Devanna (1986), also attempt to link leaders and followers within a motivation theory framework through transactional and transformational leadership. These authors view leadership as being inseparable from follower's needs. Effective leaders are those individuals who are able to understand and tap into the needs and motives of followers to simultaneously reach leader and follower goals (Louis W. Fry, 2003, p 693).

Transactional leadership underlies most leadership models, which focus on exchanges between leaders and followers (Northouse, 2001). It is an extrinsic-based motivation process whereby leaders achieve their goals while followers receive external rewards for job performance. An example is the manager who offers rewards, such as promotions, extra pay, or time off, for employees who surpass their goals. Transactional leadership is at the heart of the management process aimed at keeping the organization running smoothly and efficiently. Its emphasis is primarily on control through rule compliance (Galbraith,1977) and maintaining stability within the organization rather than promoting change. By clarifying expectations and satisfying followers' external needs, followers build their confidence and morale and are more productive (Daft, 2001). (Louis W. Fry, 2003, p694).

3.1.5 Transformational leadership

In stark contrast, transformational leadership is an intrinsically based motivational process whereby leaders engage followers to create a connection that raises the level effort and moral aspiration in both. Transformational leadership views charisma as a necessary but not sufficient condition for transformational leadership (Yammarino, 1993). Its purpose is to create significant change in both followers and the organization. Transformational leaders are attentive to the needs and motives of followers and help inspire them to develop into leaders, reach their potential for growth and development, and go beyond their own self-interest for the good of the group (Bass, 1998). The most important role of the transformational leader, however, is to paint a vision of a desired future state and communicate it in a way that causes followers to believe and have faith in the vision of organizational transformation to make the pain of change worth the effort (Tichy & Devanna, 1986). Burns (1978) points to Mahatma Gandhi as a classic example of transformational leadership. Since both control and change are essential processes for organizational effectiveness, effective leaders, depending on the situation, must be able to exhibit both transactional and transformational leader behavior. They must not only have the ability to build a vision and empower and energize others, but also demonstrate

the skill to design structures and control and reward systems to motivate people to achieve the vision (Kets De Vries,1998). Thus, transactional and transformational leadership are seen to be a single continuum rather than being mutually exclusive (Yammarino, 1993)(Louis W. Fry, 2003,p 694).

3.2. OTHER LEADERSHIP THEORIES

New trends are indicating a focus on workplace spirituality as a new leadership theory. These rapidly accelerating trends for workplace spirituality and the new learning organizational paradigm appear to be confluent. A key issue that must be addressed is what are the qualities and processes for strategic leadership, leadership in empowered teams, and personal leadership for facilitating this confluence. Spiritual leadership can be viewed as a field of inquiry within the broader context of workplace spirituality. Both are areas of research in the early stage of development and therefore lack a strong body of theory and research findings (Louis W. Fry, 2003, p 695).

From an ethics and values perspective, leaders have an impact on establishing and reinforcing personal, team, and organizational values (Northouse,2001). Ethics is central to leadership because of the nature of the leadership process and the need to engage followers to accomplish mutual goals. However, very little research has been published on the theoretical foundations of leadership ethics and values. Greenleaf's (1977, 1978) writing on servant leadership holds that the primary purpose of business should be to create a positive impact on its employees and community. The framework for servant leadership consists of helping others discover their inner spirit, earning and keeping others trust, service over self-interest, and effective listening. Covey's (1989, 1991) principle-centered leaders, like Greenleaf's servant leaders, willingly try to live in service (calling) to others in harmony with natural laws and universal principles. The purpose of the seven habits is to help one find a renewing harmony (membership) and balance in life in spite of constant changes and outside pressures. Drawing upon the seven habits, principle-centered leaders are continually learning, are service oriented, believe in other people, radiate positive energy, see life as an adventure, are synergistic, lead balanced lives, and exercise for self-renewal. Covey introduces the four master principles of personal trustworthiness, interpersonal trust, managerial empowerment, and organizational alignment. Principled-centered leaders then practice these principles from the inside out at the personal, interpersonal, managerial, and organizational levels to unleash the creativity, talent, and energy of a work force whose jobs in the past neither required nor rewarded use of such resources. Kouzes and Pozner (1987, p.30) define leadership as ''the art of mobilizing others to want to struggle for shared aspirations.'' Five fundamental practices that enable leaders to get extraordinary things include challenging the process, inspiring a shared vision, enabling others to act, modeling the

way, and setting the example by behaving in ways that are consistent with shared values. Four essential leader characteristics and values that followers admire and that give the leader credibility in motivating people to perform and satisfy the basic human need for calling in making a difference include being honest, forward-looking, inspiring in pursuit of a shared vision, and competent (Kouzes & Pozner, 1993). When people perceive their leaders to have high credibility, they are significantly more likely to be organizationally committed and productive. Value-based leadership is predicated on shared, strongly internalized values that are advocated and acted on by the leader (Bass & Avolio, 1994; House, 1996; House & Shamir, 1993). These leaders give meaning to follower effort and organizational goals by connecting them to the deeply held values of subordinates. Value-based leaders articulate a vision of a better future to energize extraordinary follower motivation, commitment, and performance by appealing to subordinates' values, enhancing their self efficacy and making their self-worth contingent on their contribution to the leaders' mission and the collective vision (House & Shamir, 1993). Empirical evidence from over 50 studies demonstrates that a value-based leader's behavior has powerful effects on follower motivation and work unit performance, which effect sizes generally above 50 (Bass & Avolio, 1994; Fry, Vitucci, & Cedillo, 2003; House & Shamir, 1993; Malone & Fry, 2003). L.W. Fry / The Leadership Quarterly 14 (2003) 693–727 709 Barrett (1998, 2003) proposes that there must be a strong alignment among the personal values of employees, the values of the current organization, and the desired values employees consider necessary for a high-performance organization. He suggests that each level of Maslow's (1954, 1968) hierarchy of needs can be thought of as a level of consciousness, and that self-actualization (the highest state) can be expanded to include four distinct stages in the development of spiritual awareness—transformation, cohesion, inclusion, and unity.

3.3 LEADERSHIP STYLE IN THE CONSTRUCTION INDUSTRY

Leadership style is a joint outcome of the leader's self-related cognitive information, personality traits, the underlying motives, and his understanding of operating situational variables (Toor SR, Ofori G,2006). The outcome of some research on leadership in the past has resulted in the identification of a number of leadership styles such as democratic and authoritarian (Tannenbaum AS, Schmitt WH, 1958;36:95–101), task- and relationship-oriented (Fiedler FE, 1967), autocratic, consultative, and joint decision making (Blake RR, Mouton JS, 1978), servant leadership (Vroom VH, Jago AG,1988), authority-compliance, impoverished management, country club management, team management, middle of the road management (Greenleaf RK, 1977), directing, coaching, supporting and delegating (Hersey P, Blanchard KH, 1982), transactional, transformational, and laissez faire (Avolio BJ, Bass BM,1991), charismatic leadership (House RJ. 1977. p. 189–207), self-leadership (Manz CC, Sims HP, 1987;32:106–28),

spiritual leadership (Fry LW, 2003;14:693–727), and authentic leadership (Luthans F, Avolio BJ, 2003. p. 241–58). Researchers in the construction industry have also explored leadership styles suitable for construction professionals. The least preferred coworker (LPC) measure of Fiedler's (Fiedler FE, 1967) contingency model of leadership has been mostly widely used. In one of the earliest studies, Monaghan (Monaghan TJ, 1981) observed that project managers who were high in task and low in people consideration produced an acceptable level of commercial performance. Another study described project managers as ''socially independent''(Bresnen M, Bryman A, Beardsworth A, Ford J, Keil E, 1986;112(3):370–86) although the calculated LPC scores suggested the task-oriented behavior of the subjects. Seymour and Abd-Elhaleem (Seymour D, Abd-Elhaleem T, 1991;9(4):228–32) noted that the effectiveness of project managers is fairly synonymous with task-oriented leadership. Rowlinson et al.(Rowlinson S, Ho T, Yun PK, 1993;11:455–65) examined variations of leadership styles employed by the same construction managers in different circumstances. They found the managers tended to use a supportive style in feasibility study and pre-contract stages of works and a directive style as construction progressed. Dulaimi and Langford (Dulaimi M, Langford DA, 1999;125(4):256–64) also considered the project managers in their study as socially independent. They noted that project manager's personal orientation and the situational variables were independent of one another (Shamas-ur-Rehman Toor *, George Ofori,2007).

In another study of construction site managers, Fraser (Fraser C, 2000;18(1) 29–36) found that those who scored high on the effectiveness scale favored team-style leadership, those following a production style of leadership scored the lowest of all, and those using a compromise leadership style had middle range effectiveness scores. Contrary to earlier studies, in another study of project managers in Thailand, Ogunlana et al. (Ogunlana SO, Siddiqui Z, Yisa S, Olomolaiye P, 2002;20:385–400) found that the relationship-oriented leadership style was considered to be more important than the task oriented style for project managers. Fellows (Fellows R, Liu A, Fong CM, 2003;21:809–18.), in a study of the quantity surveyors in Hong Kong, observed that they were mostly relationship-orientated and tended to adopt a supportive style of leadership. The expressed preference for relationship orientation was stronger amongst contractors than consultants. In their survey of leadership styles of construction professionals in Turkey, Giritli and Oraz (Giritli H, Oraz GT, 2004;22:253–62 .) observed that (i) female and male managers were similar in terms of their transactional leadership behavior but their transformational practices were significantly different, suggesting the task-oriented style of both sexes in a gender-congruent context; and (ii) managers in higher positions were stronger in pacesetting style than those in lower management positions, indicating that senior managers led by example, yet exerted tight control over the performance of their

subordinates. In a rather international study of leadership in the construction industry, Chan and Chan (Chan ATS, Chan EHW, 2005;131(4):413–22) found that all transformational factors—which are charisma, inspirational motivation, intellectual stimulation, and individualized consideration—and contingent reward of transactional factors—which are contingent reward, management- by-exception, active and passive—were highly correlated with the rated outcomes (such as leader effectiveness, extra effort by employees, and employee's satisfaction with the leaders). Their study also revealed that well-perceived leadership styles of the building professionals were inspirational motivation, idealized attributes, intellectual stimulation, idealized behaviors, contingent reward, and individualized consideration. They recommend that building professionals should adopt and promote the use of transformational leadership in their interactions with employees in order to realize greater employee performance and satisfaction (Chan ATS, Chan EHW, 2005;131(4):413–22). In a survey on leadership for mega project, Toor and Ogunlana (Toor SR, Ogunlana SO,2006) observed that the attributes of transformational leaders were rated high as compared to those of transactional leaders. They also observed that the use of authority and punishment was rated among the lowest of leadership behaviors. Above research studies show that there is no agreement on what leadership style best suits the construction professionals and project managers. This is arguably understandable because no leadership style can be considered to be the best in all circumstances and at all times (Fiedler FE, 1967, Blake RR, Mouton JS), and context is a vital factor for the success and effectiveness of any particular leadership style (Fellows R, Liu A, Fong CM, 2003;p21). Moreover, most of the identified leadership styles are self-centered, task-centered, relationship-centered, or change-centered. These styles do not tell if the effort behind the leadership is genuine, reliable, truthful, and earnest. Leaders can pretend, and put such styles on show for certain purposes. They can even pretend to be charismatic and transformational while being different in reality (Yukl G, 2002;10(2):p285–305). George et al. (George B, Sims P, McLean AN, Mayer D, 2007;85(2):p129–38) also claim there can be no absolute trait-profile of leaders, for if there was one ''cookie-cutter leadership style, individuals would be forever trying to imitate it. They would make themselves into personae, not people, and others would see through them immediately.'' Another important question is whether general leadership characteristics (such as task- and/or relationship- orientation, clarity of vision, intellectual stimulation, active or passive management, and so on) suffice in making up the character of an effective construction project leader. In the next section, the notion of authentic leadership and its potential application in the construction industry is discussed. (Shamas-ur-Rehman Toor *, George Ofori, 2007).

3.4 LEADERSHIP RESEARCH IN THE CONSTRUCTION INDUSTRY

Research has shown that the project manager is one of the most important success factors of projects. Site managers have an impact on the overall quality and cost of the project and the quality of the individual site manager may affect the project cost by as much as 10% (Herbert A, Martvall K, Wirdenius H, 1970;7:19–20). Leadership is one of the most important subjects in management studies (Toor SR, Ogunlana SO,2006). However, many authors have not been able to articulate the idea of leadership despite the large volume of research and literature on the area (Giritli H, Oraz GT, 2004;22:253–62, Kets de Vries MRF, 1997. p. 50–271). Particularly in the construction industry, not much work has been done on leadership (Odusami KT, Iyagba RRO, Omirin MM, 2003; 21:p519–27). Dulaimi and Langford (Dulaimi M, Langford DA, 1999;125(4):256–64) argue that most studies on leadership in the construction industry concentrate on investigating the motivational factors and the personal characteristics of project managers. Few studies focus on how leadership is conceived and operationalized in the construction industry. However, due to the changing environment of the construction industry and increasing realization of people- side of project management, researchers have shown more interest during last few years. Toor and Ofori (Toor SR, Ofori G; 2007), in their recent review of empirical work on leadership in construction, have shown that the number of publications in this area have consistently grown during the last decade. Out of total 44 publications, Toor and Ofori (Toor SR, Ofori G; 2007) show that more than 50% have been published during the last decade. This shows a mounting interest of the research community in leadership in the construction industry. The lack of focus on leadership is not limited only to research in the construction industry. Practicing construction professionals are also hardly seen as leaders (Bresnen M, Bryman A, Beardsworth A, Ford J, Keil E, 1986;112(3):370–86). A recent poll of the American Council of Engineering Companies (cited in Russell JS, Stouffer B, 2003; p2–3) revealed that very few people view consulting engineers as community leaders while a large percentage of respondents perceived them as technical consultants. Several reasons have been suggested to explain why the construction industry has not undertaken any significant research on leadership and its practical use in the industry. Langford et al. (Langford DA, Fellows R, Hancock M, Gale A,1995) opine that the low volume of leadership studies in the construction industry is due to the lack of understanding of knowledge of the industry on the part of social scientists and a lack of understanding of the social sciences by those in the industry. (Shamas-ur-Rehman Toor *, George Ofori,2007).

3.5 LEADERSHIP TRAITS

As was indicated under section 3.2 many studies have concluded that leaders and leadership are important .As such, an interest arose in what sets apart individuals who

become leaders from those who do not. This has led to an interest in the distinctive traits of leadership (Gibson *et al.*, 2000:p273). Although modern research clearly states that traits are not the only factor, this research does not disregard the impact and importance of leadership behaviour as well as situational factors. In the trait theory of leadership, characteristics of leaders have been studied. This approach assumes that a finite number of individual traits of effective leaders could be found. Although some studies have reported that these traits contribute to leadership success, leadership success is however neither primarily nor completely a function of these or other traits (Gibson *et al.*, 2000:p275).

Traits that have been identified include:

- ***Dominance:*** Successful leaders want to be managers and to take charge. However, they are not overly bossy and do not use a bullying style (Lussier & Achua, 2004:p37 and Bateman & Snell,1999: p411).
- ***Self-confidence:*** Leaders display self-assurance about their abilities and foster confidence among followers. Self-confidence influences individual goals, efforts and task persistence. Without strong self-confidence, leaders are less likely to attempt to influence followers to take on difficult tasks and to set challenging objectives for themselves and followers (Lussier & Achua, 2004:p38-39 and Gibson *et al.*, 2000:p274-275).
- ***High energy:*** Leaders have the drive and work hard to achieve goals. They have enthusiasm and do not give up. They have a high tolerance for frustration as they strive to overcome obstacles through preparation. They take initiative to bring about improvements rather than ask permission (Lussier & Achua, 2004:p38 and Bateman & Snell, 1999:p411).
- ***Stability:*** Stability is associated with managerial effectiveness and advancement. Stable leaders are emotionally in control of themselves, secure and positive. Effective leaders have a good understanding of their own strengths and weaknesses. They are oriented towards self-improvement rather than being defensive. This relates to effective leaders knowing when to lead and when to follow. They compensate for weaknesses by letting others with the strength lead in those areas (Lussier & Achua, 2004:p39 and Robert & Achua, 2001:p39).
- ***Locus of control:*** Locus of control is on a continuum between external and internal belief in control over one's destiny. Externalisers believe that they have no control over their fate and that their behaviour has little to do with their performance. Internalisers (leaders) believe that they control their fate, that their behaviour directly affects their performance. Leaders take responsibility for who they are, for their behaviour and performance and for the performance of their organisational unit (Lussier & Achua, 2004:p39 and Robert & Achua, 2001:p39).

- ***Sensitivity to others:*** Sensitivity to others refers to understanding group members as individuals, what their position on issues is and how best to communicate with and influence them. To be sensitive to others requires empathy and the ability to place oneself in another person's position, to see things from others' point of view (Lussier & Achua, 2004:p41 and Robert & Achua, 2001:p41).
- ***Abilities:*** Effective leaders share certain abilities and skills that enable them to do their job, although the exact importance of a particular ability cannot be known with certainty. Some of the more important abilities associated with leadership effectiveness include the ability to get along with people who embrace persuasiveness, tact and diplomacy. The effective leader must display more than passing technical knowledge relevant to the task undertaken by the followers (Gibson *et al.*, 2000:p274).
- ***Intelligence****:* Leaders generally have above-average intelligence. Intelligence refers to cognitive ability to think critically, to solve problems and make decisions. However, intuition, also called hidden intelligence, is important to leadership success (Lussier & Achua, 2004:p40 and Oosthuizen, 2004:p83).
- ***Flexibility****:* Flexibility refers to the ability to adjust to different situations. Leaders need to stay ahead of the immense changes in the world and the pace of change. Without flexibility, leaders would be successful only in limited situations that fit their style of leadership. (Lussier & Achua, 2004:p41 and DuBrin, 1997:p189).
- ***Integrity****:* Integrity refers to behaviour that is honest and ethical, making a person trustworthy. Trustworthiness is an important part of business success. Followers must trust the leader. Unless one is perceived to be trustworthy, it would be difficult to retain the loyalty of followers or to obtain cooperation and support from peers and superiors (Lussier & Achua, 2004:p40 and Ivancevich & Matteson, 1996:p415).
- ***Motivation:*** Leaders seem to exhibit a relatively high need for power, but they act on that need in socially acceptable ways. Effective leaders work within the system to accomplish socially desirable outcomes. Another motivation that sets leaders apart is a relatively high need for achievement (Gibson *et al.*, 2000:p275). Through investigating research as presented by the above-mentioned researchers and authors, eleven primary leadership traits are identified. These traits are indicated as being relevant for success (Thornton, 2004).

Strong leadership is necessary to be able to establish performance direction and to cope with change. A manager should internalise different facets of his/her character in order to handle different people in different situations. An effective manager has to modify, change or adapt his natural character to suit different purposes and conditions (Beer, 1990:p11-12). At times, different people make incompatible demands on the manager, creating role conflicts. The extent to which a manager is able to successfully reconcile the divergent demands is related to the manager's effectiveness (Yukl, 1981:172). This is not

a new concept and was recognised already in 1981 by some authors such as Yukl. In order to develop a measuring instrument to establish how leadership is operationalized in the practice within the construction industry various operation competencies for effective leadership have been identified.

3.6 LEADERSHIP COMPETENCIES

In line with the industry's institutional and organisational challenges key competencies were identified;

- **Strategic Capability and Leadership (Intellectual competencies)-**Provides a vision, sets the direction for the organisation and/or unit and inspires others to deliver on the organisational mandate.
- **Programme and Project Management (Managerial competencies)-**Plans, manages, monitors and evaluates specific activities in order to deliver the desired outputs and outcomes.
- **Financial Management (Managerial competencies)-**budgets, controls cash flow, institutes risk management and administers tender procurement processes in accordance with generally recognised financial practices in order to ensure the achievement of strategic organisational objectives.
- **Change Management (Managerial competencies)-**Initiates, supports and champions organisational transformation and change in order to successfully implement new initiatives and deliver on service delivery commitments.
- **Knowledge Management (Managerial competencies)-** Obtains, analyses and promotes the generation and sharing of knowledge and learning in order to enhance the collective knowledge of the organisation.
- **Service Delivery Innovation Champions (Emotional competencies)-**New ways of delivering services that contribute to the improvement of organisational processes in order to achieve organisational goals.
- **Problem Solving and Analysis (Emotional competencies)-**Systematically identifies, analyses and resolves existing and anticipated problems in order to reach optimum solutions in a timely manner.
- **People Management and Empowerment (Managerial competencies)-**Manages and encourages people, optimises their outputs and effectively manages relationships in order to achieve organisational goals.
- **Client Orientation and Customer Focus (Managerial competencies)-**Willing and able to deliver services effectively and efficiently in order to put the spirit of customer service into practice.
- **Communication (Managerial competencies)-**Exchanges information and ideas in a clear and concise manner appropriate for the audience in order to explain, persuade, convince and influence others to achieve the desired outcomes.

- **Honesty and Integrity (Emotional competencies)-**Displays and builds the highest standards of ethical and moral conduct in order to promote confidence and trust in the Public Service (www.usb-ed.com).

Amongst other challenges Meyer and Boninelli, 2004 list mergers and acquisitions, new product market opportunities and any other challengers that have a potential to require skills and leadership competencies. Cross-cultural leadership studies indicate that cultural differences influence leadership behaviour, and management philosophies typically evolve in harmony with the cultures within which they function. Although South Africa is a complex amalgam of several cultures, the dominant management practices are for historical reasons. Corporate South Africa is, however, becoming more diverse and inclusive of all race groups, which challenges the dominant management paradigm. If South African organizations are to survive, leaders need to understand different expectations of all the people in this country, and they need to develop those leaders who are expected to lead organizations to their vision. (Booysen, 2001). Therefore it makes sense for organizations to develop leaders in order to meet the future challenges. The drive from contractors to meet future challenges is the reason why leadership as an emergent process is becoming more visible.

Leadership development is about harnessing all essential skills required for leadership. Such skills include: good communication; being articulate; ability to think on your feet; humour; flexibility; integrity; compelling presence and empathy amongst other things (http://www.impactfactory.com/p/leadership_skills_training_development/issues_1327-1104-81184.html).

Leadership development programs must build on the learning opportunities that already occur in people's everyday lives. Adopting a few of the principles will improve the company's ability to design effective leadership development programs (http://www.morassociates.com/better_ldr_dev_progrm.html).

CHAPTER4: RESEARCH METHODOLOGY

4.1 METHODOLOGY

The approach that was followed was to use existing theory and collecting information by way of interviewing the management and employees of construction companies in 16 organisations in South Africa. A questionnaire, designed specifically for this study, was used as a tool to gather information with the aim to gain an understanding of the conception and operationalized of leadership, and its alignment to theory as presented in the literature review. An analysis of the responses was made and compared to the literature review. Information obtained from the analysis was done based on theoretical postulations to establish level of conformance by each company in relation to theoretical teachings, and to look at differences in the opinion of management and employees on leadership conception and application in each company. Based on the outcome of the analysis, areas for improvement was identified and recommendations were made where applicable.

4.1.1 Theoretical framework

Qualitative research seeks a better understanding of complex situations. Qualitative research is often exploratory in nature, and it uses observations to build theory from the ground up. Lee (1999,p15) . In contras quantitative research is used to answer questions about relationships among measured variables with the purpose of explaining, predicting, and controlling phenomena. This approach is sometimes called the traditional, experimental, or positivist approach (Leedy PD & Ormrod JE. 2005, p95).

A quantitative research methodology was used during the investigation. This research looked at all related aspects as a lot of information or data from the chosen contractors was obtained and was reduced into a sizeable or workable database. This data was also presented in a way that it is properly classified and easily understand in the form of figures, tables, etc. Lastly, the research was conducted to provide management of contracting companies with information to make informed decisions on the role of leadership as management of contracting companies are not fully knowledgeable about how leadership is conceived and operationalized in the practice within the construction industry.

4.1.2 Type of qualitative design and the assumptions that underlie it

Descriptive research –This types of research involves either identifying the characteristics of an observed phenomenon or exploring possible correlations among two or more phenomena, The research examines a situation as-it-is an does not involve changing or modifying the situation under investigation neither is it intended to determine cause-and-

effect relationships. Quantitative research methodologies are part of descriptive research. The type of quantitative research instrument that was used is a Survey research. Some scholars use the term survey research to refer to almost any form of descriptive, quantitative research (Gay &Airasian, 2003;Johnson 2001). In this study Survey research involves acquiring information about one or more groups of people by asking them questions and tabulating their answers. The ultimate goal is to learn about a large population (South African construction industry) by surveying a sample of that population; thus this approach is also called descriptive survey or normative survey. Survey research typically employs a face-to-face interviews or a written questionnaire (Leedy PD & Ormrod JE. 2005, p183).

4.1.2.1 Assumptions

A questionnaire was used because of the relative lower cost in comparison with interviews and because participant can respond to questions with some degree of assurance that their responses will be anonymous, and so they may be more truthful than they would be in a personal interview. The draw backs of questionnaires are the fact that the majority of people who receive questioners don't return them hence the low return rates. The samples which are returned are not necessary representative of the original selected sample. Even when people are willing to participate in the research their responses will reflect their reading and writing skills and perhaps, their misinterpretation of one or more questions (Leedy PD & Ormrod JE. 2005,p189). Furthermore, by specifying in advance all of the questions that will be asked- and thereby eliminating other questions that could be asked about the issue or phenomenon in question the researcher is at risk of gainong only limited and possible distorted information (Dowson &MCInervey, 2001). Quantitative research operates under the assumption that reality is and can be easily divided into discrete, measurable variables.

Several other assumptions will be made when conducting this research. It is assumed that;

- All participants have relatively the same understanding of leadership and their industry provides the same environment for the different companies to make valuable contributions to the research,
- The different construction companies are at the same level in terms of valuing leadership,
- Participants at the same job level have the same background and training of the concept under investigation;
- Differences in ethnical backgrounds, cultural, racial, and gender of participants has a negligible impact on the research results;

- Differences in education levels, age and political affiliations of participants have a negligible impact on the research results; and
- Differences in culture and years of operation of all construction companies have a negligible impact on the research results.
- Certain cause-effect relationships can account for the pattern observed in the phenomenon.
- The phenomenon under investigation is somewhat lawful and predictable; it is not comprised of completely random events.

4.1.3 Role of researcher (including qualifications)

The role of the quantitative researchers will be to seek explanations and predictions that will be generalized to the bigger population in South Africa. The intent is to establish, confirm or validate relationships and to develop generalizations that contribute to theory. The object is to seek a better understanding of complex leadership concepts and phenomena in the construction industry. The researcher is a mechanical engineer by profession and holds the following qualifications; N Dip Electrical engineering, B Eng Mechanical Engineering, B(Hons) Maintenance Engineering, MOT, GCC mining, GCC factories, Registered professional engineer with ECSA and is registered with the following engineering bodies; SAIEE, SAMECH, Chamber of Engineering technology and AMRE.

4.1.4 Research instrument design.

A questionnaire survey was adopted for collecting data because of its advantage in yielding responses in standard format from a large number of respondents and the benefit of collecting data from respondents from geographically dispersed locations. Please refer to Appendix C to obtain more detail on the questionnaire. The questionnaire was formulated from both the literature review and previous surveys.

The measurements adopted in the questionnaires are:

- *Leadership behaviour.* Leadership behaviours in this research were measured by using a modified version of Bass and Avolio's (2004) multifactor leadership questionnaire (MLQ) Form 5X. The original MLQ comprises 36 statements for measuring nine leadership behaviours of leadership styles. In this research, the definition of leadership and management was first tested. Which was followed by measuring the conception of leadership behaviours in the context of the laissez-faire (non-leadership), the transactional leadership and transformational leadership styles (which is based on inspiration and behavioural charisma) (Bass and Avolio, 1993).Ten statements were used to measure how the different behaviors are conceived by employees and management. (Q1,2,3,4,9,10,11,12,14,16,)

- *Leadership outcome.* There were nine additional statements in the original MLQ for measuring leadership outcomes resulting from project managers' leadership approach. In the modified questionnaire six statements were used to measure how the different leadership outcomes are conceived by employees and management (Q 5, 6, 7, 17, 18, 19). Under operationalization three statements were used to measure leadership effectiveness levels (Q20, 21, 22) and one statement for measuring satisfaction levels of employees and management (Q27).
- *Work performance.* A rating tool was devised for employees and middle management to evaluate the effectiveness of their project leaders which is a reflection of their work performance. The measurement required participants to rate each statement on a five-point rating scale ranging from “strongly agree” to “strongly disagree” based on their experience with the project leaders. Two statements were was used to measure how work performance is conceived by employees and management.(Q8,15)
- *Organizational commitment.* The organizational commitment questionnaire (OCQ), developed by Porter *et al.* (1974) was used to measure the commitment level of project leaders. It consists of 15 item statements. Nine statements are positive aspects, and six are negative. The respondent is required to rate each item on a 5-point rating scale ranging from “strongly disagree” to “strongly agree”. The OCQ form was modified to suite this research. One statement was used to measure how organizational commitment is conceived by employees and management.(Q14) Under operationalization three statements were used to measure leadership development and strategic planning (Q24,25,26) (S.O Ogunlana,K Limsila, 2008,p167).

4.1.5 The questionnaires

The pilot survey questionnaire- A first draft of the questionnaire was sent to six participants as the pilot survey. Three construction companies completed the pilot questionnaire and based on their requested comments, minor amendments were made formulating the final format of the questionnaire.

4.1.6 Procedure for administration of the research instrument and control of variables

In the light of the above view this research made use of interviews and observations as tools for data collection with a representative sample large enough to make generalizations possible. A few participants in these construction companies was selected who will shed light on the phenomenon under investigation.

The following contracting companies have been chosen as our sample for this research;

Robtek, Metso, Vaal Engineering, AL Mining Technics, CrushPro, Pylon Engineering, Galison, Almec, Bids Investment, Rand Sandblasting, G.D Irons Construction, Fiele Engineering, Ultra Reconditioner, Tau Engineering, Carlson Engineering (see Annexure C: Research Questioner). A Questionnaire was used for collections of information which was either sent to participating construction companies whose representatives would not be able to do face to face interviews or used to collect information in face to face interviews for consistency of information collected. A structured questionnaire was used in this study so that comparison of phenomenon collected is easier and themes of presenting data are easily formulated.

Data from questionnaires, interviews, as well as from records is presented in themes, tables, graphs etc for easy comparison and analysis. Analysis of this data will then be carried out where conclusions and recommendations will be drawn up to assist management to take further decisions in an attempt to improve the status quo with regard to leadership. Please see attached the full management plan, timeline and feasibility of this study in Annexure A (Critical Milestones of the research).

4.1.7 Data analysis strategies

A. Analysis approach

Considerable use of inductive reasoning was made use of in this qualitative research as many specific observations were made and questions asked after which inferences about larger and more general phenomena was drawn. Furthermore, a subjective data analysis methodology was followed by scrutinizing the body of data presented from the findings in search of patterns-subjectively identified-that the data reflects. After which a theme was identified in the data using an inductive process then a more deductive mode to verify or modify it with additional data. Interpretive narratives was constructed from the data to assess how leadership is conceived and operationalized in the practice within the construction industry in South Africa. Data analysis in the research involved the following steps;

1.Organization data from questionnaires,
2.Categorization of data,
3.Interpretation of single instances,
4.Identification of patterns,
5.Sythesis and generalization.

Hypothesis testing

Hypothesis testing as described in Diammantpoulos and Schlegelmich was used to do the analysis. Data processing was done by cross-tabulations of a various variables with

employment level opinion related questions. The object will be to ascertain whether there is an association (dependency) between the view of management and employees for each variables. The null hypotheses is used to determine relationships of variables, thus whether variables are not different in terms of responses or opinion. The alternative hypotheses on the other hand is being used to determine if variables are different or not equal to, thus to determine whether the background and the opinions given are different or not equal so that alternative conclusions could also be made on the initial opinions expressed.

The p-value (or significance value) related to the hypothesis test is used where if the p-value of the test is found to be less than (< 0.05), then it implies that there is a dependence (i.e. the null-hypothesis of independence (or no difference) is rejected). In other words there is a significant difference between the variables being assessed in terms of their results. If the p-value of the test is found to be > 0.05, then two variables do not differ significantly in terms of opinion (Diammantpoulos and Schlegelmich, 2000).

The analyses that follow will look at verifying as to whether the null hypotheses (Ho) given are accepted, thus whether the two variables were indifferent (not different) if not establish other alternatives hypotheses (H1) that support the relationship between the variables chosen.

B. Parametric and none parametric test

Parametric and none parametric test was used to assess correlations and dependencies. The Wilcoxon Rank Sum Test was used on questions 1-20 and 23, 24, 27. Chi-squared test on questions 21,22,25,26 The Pearson correlation was used to evaluate the correlation between employees and management options on each question.

The Two-Sample Rank-Sum Test

The term non-parametric test originated because the test statistic in such a test does not depend on sample estimate(s) of parameter(s) in a population distribution. The one-sample t-test is a parametric test. The t-statistic involves and is, the sample mean and sample standard deviation. These are estimates of the parameters m and s, the mean and standard deviation of the population distribution, which is assumed to be a normal curve in the one-sample t-test problem (Bhattacharyya & Johnson ,1977, p 538).

The Wilcoxon rank-sum test, also known as the Mann–Whitney test and sometimes called the Mann–Whitney–Wilcoxon test, is a nonparametric alternative to the two-sample t-test. Usually, we will refer to this test simply as the two-sample rank-sum test. It can be used to compare two populations when the variable of interest is either quantitative or ordinal and the data are from two independent samples. The hypotheses of interest concerns whether or not values in one population tend to be larger than values in the other population (Bhattacharyya & Johnson [1977, p 538).

The Null and Alternative Hypotheses for the Two-Sample Rank-Sum Test

The null and alternative hypothesis for the two sample rank-sum test can be stated as;

H0: No difference in the distribution of values in the two populations.

Ha: The values in one population tend to be larger than values in the other.

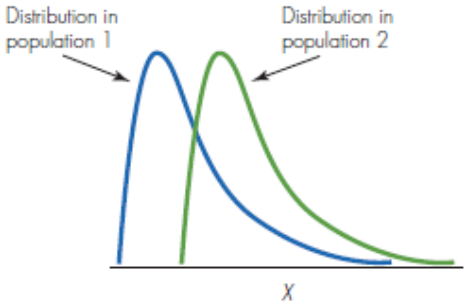


Fig. 2 Two population distributions for the Wilcoxon rank-sum test (Bhattacharyya & Johnson, 1977, p 538).

The alternative will be one-sided if we specify which particular population might tend to have larger values. For instance, a statement that management tend to strongly agree with the definition of leadership from (House et al.,1999, p184) would be a one-sided alternative hypothesis. The null and alternative hypotheses can be written as hypotheses about the two population medians if we assume that the response variable is continuous and the two population distributions have the same shape, differing possibly only by a shift of location. Figure 2 illustrates this assumption. With this assumption, the null hypothesis can be written as H0: h1= h2, where h1 and h2 denote the medians of the two populations being compared. As usual, the alternative hypothesis may be one-sided (either Ha: h1>h2 or Ha: h1<h2) or two sided (Ha: h1 not equal to h2) (Bhattacharyya & Johnson ,1977, p 538).

The Rank-Sum Statistic

The two-sample rank-sum test is based on ranks that are assigned to the observed values in the two samples. The rank of an observation is its location in the ordered list of data, where the data are ordered from smallest to largest. The rank is 1 for the smallest data value, 2 for the second smallest value, and so on. For instance, the

ranks for the values 65, 62, 67 are 2, 1, 3. When two or more observations have the same value, the rank for each observation is the midrank, or average, of the lowest and highest ranks that would have been given if the values had not been tied. For example, the ranks for the ordered list of values 60, 65, 65, 67, 70 are 1, 2.5, 2.5, 4, 5, respectively. The two observations equal to 65 are tied for second and third place in the ordered list, so each is given the rank 2.5, the average of 2 and 3. The test statistic for the two-sample rank-sum test is W_sum of the ranks (within the overall dataset) for the observations in the first sample (Bhattacharyya & Johnson ,1977, p 538).

The Wilcoxon Rank-Sum Test

The Wilcoxon rank-sum test is a nonparametric alternative to the two sample t-test which is based solely on the order in which the observations from the two samples fall.

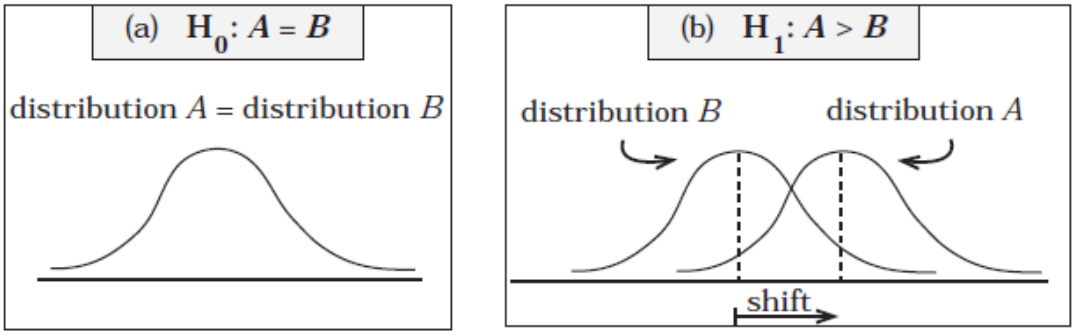


Figure 3 : Illustration of H0 : A = B versus H1 : A > B. for the Wilcoxon Rank-Sum Test(Bhattacharyya & Johnson [1977, p 538).

The Wilcoxon test is based upon ranking the nA + nB observations of the combined sample. Each observation has a rank: the smallest has rank 1, the 2nd smallest rank 2, and so on. The Wilcoxon rank-sum test statistic is the sum of the ranks for observations from one of the samples. Let us use sample A here and use wA to denote the observed rank sum and WA to represent the corresponding random variable (Bhattacharyya & Johnson ,1977, p 538).

Notes

1. The Wilcoxon test is still valid for data from any distribution, whether Normal or not, and is much less sensitive to outliers than the two-sample t-test.
2. If one is primarily interested in differences in location between the two distributions, the Wilcoxon test has the disadvantage of also reacting to other differences between the distributions such as differences in shape.
3. When the assumptions of the two-sample t-test hold, the Wilcoxon test is somewhat less likely to detect a location shift than is the two-sample t-test. However, the losses in this regard are usually quite small.
4. Nonparametric confidence intervals for μ = e¹A ¡ e¹B, the difference

between the two population medians (or any other measure of location), can be obtained by inverting the Wilcoxon test, provided one is willing to assume that the two distributions differ only by a location shift. A 95% confidence interval (Welch) for the difference in means is given by [¡0:1; 1:0].

5. In a practical situation in which we are uneasy about the applicability of two-sample t methods, we use both of them and the Wilcoxon and feel happiest when both lead to very similar conclusions.

6. The Mann-Whitney test is essentially identical to the Wilcoxon test, even though it uses a different test statistic (Bhattacharyya & Johnson ,1977, p 538).

Limitations of nonparametric tests

The Wilcoxon rank sum test provides a significance test for these hypotheses, but only if an additional assumption is met: both populations must have the same distributions. The same-shape assumption is too strict to be reasonable in practice. As the preferred version of the two-sample test does not require that the two populations have the same standard deviation—that is, it does not make a same-shape assumption. Fortunately, the Wilcoxon test also applies in a much more general and more useful setting (Bhattacharyya & Johnson [1977, p 538).

Ties

The exact distribution for the Wilcoxon rank sum is obtained assuming that all observations in both samples take different values. This allows us to rank them all. In practice, however, we often find observations tied at the same value. The usual practice is to average any assign all tied values of the ranks they occupy

The exact distribution for the Wilcoxon rank sum W applies only to data without ties. Moreover, the standard deviation must be adjusted if ties are present. The normal approximation can be used after the standard deviation is adjusted. We might apply the chi-square test. Although the chi-square test answers our general question, it ignores the ordering of the responses and so does not use all of the available information. In the case of this research the alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties (Bhattacharyya & Johnson ,1977, p 538).

Chi square two sample

The chi-square two sample test is based on binned data. Note that the binning for both data sets should be the same. The basic idea behind the chi-square two sample test is that the observed number of points in each bin (this is scaled for unequal sample sized) should be similar if the two data samples come from common distributions. More formally, the chi-square two sample test statistic can be defined as follows.

Perform a chi-square two sample test that two data samples come from the same distribution. Note that we are not specifying what that common distribution is.

Ho; The two samples come from a common distribution.

Ha; The two samples do not come from a common distribution

Test Statistic:

For the chi-square two sample test, the data is divided into k bins and the test statistic is defined as

$$\chi^2 = \sum_{i=1}^{k} \frac{(K_1 R_i - K_2 S_i)^2}{R_i + S_i}$$

where the summation is for bin 1 to k, R_i is the observed frequency for bin i for sample 1, and S_i is the observed frequency for bin i for sample 2. K1 and K2 are scaling constants that are used to adjust for unequal sample sizes. Specifically,

$$K_1 = \sqrt{\frac{\sum_{i=1}^{k} S_i}{\sum_{i=1}^{k} R_i}}$$

$$K_2 = \sqrt{\frac{\sum_{i=1}^{k} R_i}{\sum_{i=1}^{k} S_i}}$$

This test is sensitive to the choice of bins. Most reasonable choices should produce similar, but not identical, results.

Critical Region

The test statistic follows, approximately, a chi-square distribution with (k - c) degrees of freedom where k is the number of non-empty bins and c = 1 if the sample sizes are equal and c = 0 if they are not equal. Therefore, the hypothesis that the distribution is from the specified distribution is rejected if C > CHSPPF(1-alpha,k-c) where CHSPPF is the chi-square percent point function with k - c degrees of freedom and a significance level of alpha.

The term significance level (alpha) is used to refer to a pre-chosen probability and the term "P value" is used to indicate a probability that you calculate after a given study.

90% critical value (alpha = 0.10) for the chi-square two sample test statistic

95% critical value (alpha = 0.05) for the chi-square two sample test statistic

99% critical value (alpha = 0.01) for the chi-square two sample test statistic

These parameters will be used in subsequent analysis (Press, Teukolsky, Vetterlling, and Flannery, 1992, p. 614-622.).

2 by k chi-square test

Several proportions can be compared using a 2 by k chi-square test. For example, a random sample of people can be subdivided into k age groups and counts made of those individuals with and those without a particular attribute. For this sample, a 2 by k chi-square test could be used to test whether or not age has a statistically significant effect on the attribute studied. This is a test of the independence of the row and column variables, it is equivalent to the chi-square independence tests for 2 by 2 and r by c chi-square tables.

$$\chi^2 = \sum_{i=1}^{r}\sum_{j=1}^{c}\frac{(O_{ij}-E_{ij})^2}{E_{ij}}$$

- where, for r rows and c columns of n observations, O is an observed frequency and E is an estimated expected frequency. The expected frequency for any cell is estimated as the row total times the column total then divided by the grand total (n).

Assumptions of the tests of independence:

the sample is random

each observation may be classified into one cell (in the table) only

If there is a meaningful order to your k groups (e.g. sequential age bands) then the chi-square test for trend provides a more powerful test than the unordered independence test above (Armitage and Berry, 1994; Altman, 1991).

$$\mu = \sum_{i=1}^{k}\frac{n_i v_i}{N}$$

$$\chi^2_{trend} = \frac{\left[\sum_{i=1}^{k} r_i v_i - R\mu\right]^2}{p(1-p)\left[\sum_{i=1}^{k} n_i v_i^2 - N\mu^2\right]}$$

- where each of k groups of observations are denoted as ri successes out of ni total with score vi assigned. R is the sum of all ri, N is the sum of all ni and p = R/N.

P values

The P value or calculated probability is the estimated probability of rejecting the null hypothesis (H0) of a study question when that hypothesis is true. The null hypothesis is usually an hypothesis of "no difference". The only situation in which you should use a one sided P value is when a large change in an unexpected direction would have absolutely no relevance to your study. This situation is unusual; if you are in any doubt then use a two sided P value.

The alternative hypothesis (H1) is the opposite of the null hypothesis; and is the hypothesis set out to investigate. If your P value is less than the chosen significance level then you reject the null hypothesis i.e. accept that your sample gives reasonable evidence to support the alternative hypothesis. The choice of significance level at which you reject H0 is arbitrary. Conventionally the 5% (less than 1 in 20 chance of being wrong), 1% and 0.1% ($P < 0.05$, 0.01 and 0.001) levels have been used. These numbers can give a false sense of security. Most authors refer to statistically significant as $P < 0.05$ and statistically highly significant as $P < 0.001$ (less than one in a thousand chance of being wrong).

At this point, a word about error. Type I error is the false rejection of the null hypothesis and type II error is the false acceptance of the null hypothesis. As an aid memoir: think that our cynical society rejects before it accepts.

The significance level (alpha) is the probability of type I error. The power of a test is one minus the probability of type II error (beta). Power should be maximised when selecting statistical methods (Armitage and Berry, 1994; Altman, 1991).

Pearson's chi-square test

From Wikipedia, the free encyclopedia

Pearson's chi-square (χ^2) test is the best-known of several chi-square tests – statistical procedures whose results are evaluated by reference to the chi-square distribution. Its properties were first investigated by Karl Pearson. In contexts where it is important to make a distinction between the test statistic and its distribution, names similar to Pearson X-squared test or statistic are used. It tests a null hypothesis that the frequency distribution of certain events observed in a sample is consistent with a particular theoretical distribution. The events considered must be mutually exclusive and have a total probability of 1. Pearson's chi-square is the original and most widely-used chi-square test (Chernoff and Lehmann 1954).

Definition

Pearson's chi-square is used to assess two types of comparison: tests of goodness of fit and tests of independence. A test of goodness of fit establishes whether or not an observed frequency distribution differs from a theoretical distribution. A test of independence assesses whether paired observations on two variables, expressed in a contingency table, are independent of each other .The first step in the chi-square test is to calculate the chi-square statistic. In order to avoid ambiguity, the value of the test-statistic is denoted by X^2 rather than χ^2: this also serves as a reminder that the distribution of the test statistic is not exactly that of a chi-square random variable. However some authors do use the χ^2 notation for the test statistic. An exact test which does not rely using the approximate χ^2 distribution is Fisher's exact test: this is

significantly more accurate in evaluating the significance level of the test, especially with small numbers of observation. The chi-square statistic is calculated by finding the difference between each observed and theoretical frequency for each possible outcome, squaring them, dividing each by the theoretical frequency, and taking the sum of the results. A second important part of determining the test statistic is to define the degrees of freedom of the test: this is essentially the number of observed frequencies adjusted for the effect of using some of those observations to define the "theoretical frequencies"(Chernoff and Lehmann 1954).

Test for fit of a distribution

In this case N observations are divided among n cells. A simple application is to test the hypothesis that, in the general population, values would occur in each cell with equal frequency. The "theoretical frequency" for any cell (under the null hypothesis of a discrete uniform distribution) is thus calculated as the reduction in the degrees of freedom is p=1: notionally because the observed frequencies O_i are constrained to sum to N.

When testing whether observations are random variables whose distribution belongs to a given family of distributions, the "theoretical frequencies" are calculated using a distribution from that family fitted in some standard way. The reduction in the degrees of freedom is calculated as p=s+1, where s is the number of parameters used in fitting the distribution. For instance, when checking a 3-parameter Weibull distribution, p=4, and when checking a normal distribution (where the parameters are mean and standard deviation), p=3. In other words, there will be (n − p) degrees of freedom, where n is the number of categories;

X^2 = the test statistic that asymptotically approaches a χ^2 distribution.
O_i = an observed frequency;
E_i = an expected (theoretical) frequency, asserted by the null hypothesis;
n = the number of possible outcomes of each event.

The chi-square statistic can then be used to calculate a p-value by comparing the value of the statistic to a chi-square distribution. The number of degrees of freedom is equal to the number of cells n, minus the reduction in degrees of freedom, p.
The result about the number of degrees of freedom is valid when the original data was multinomial and hence the estimated parameters are efficient for minimizing the chi-square statistic. More generally however, when maximum likelihood estimation does not coincide with minimum chi-square estimation, the distribution will lie somewhere

between a chi-square distribution with n – 1 – p and n – 1 degrees of freedom (See for instance Chernoff and Lehmann 1954).

Test of independence

In this case, an "observation" consists of the values of two outcomes and the null hypothesis is that the occurrence of these outcomes is statistically independent. Each outcome is allocated to one cell of a two-dimensional array of cells (called a table) according to the values of the two outcomes. If there are r rows and c columns in the table, the "theoretical frequency" for a cell, given the hypothesis of independence, is and fitting the model of "independence" reduces the number of degrees of freedom by p = r + c – 1. The value of the test-statistic is

The number of degrees of freedom is equal to the number of cells rc, minus the reduction in degrees of freedom, p, which reduces to (r – 1)(c – 1).

For the test of independence, a chi-square probability of less than or equal to 0.05 (or the chi-square statistic being at or larger than the 0.05 critical point) is commonly interpreted by applied workers as justification for rejecting the null hypothesis that the row variable is unrelated (that is, only randomly related) to the column variable.[1] The alternative hypothesis corresponds to the variables having an association or relationship where the structure of this relationship is not specified (Chernoff and Lehmann ,1954).

Assumptions

The chi square test, when used with the standard approximation that a chi-sqare distribution is applicable, has the following assumptions:Random - A random sampling of the data from a fixed distribution or population. Sample Size - A sample with a sufficiently large size is assumed. If a chi square test is conducted on a sample with a smaller size, then the chi square test will yield an inaccurate inference. The researcher, by using chi square test on small samples, might end up committing a Type II error. Sample Size (per cell) - Adequate cell sizes. Some require 5 or more, some require more than 5, and others require 10 or more. A common rule is 5 or more in all cells of a 2-by-2 table, and 5 or more in 80% of cells in larger tables, but no cells with zero count. When this assumption is not met, Yates' correction is applied. Independence - The observations are always assumed to be independent of each other. This means chi-square cannot be used to test correlated data (like: matched pairs, panel data). In those cases you might want to turn to McNemar's test.

Problems

The approximation to the chi-square distribution breaks down if expected frequencies are too low. It will normally be acceptable so long as no more than 10% of the events

have expected frequencies below 5. Where there is only 1 degree of freedom, the approximation is not reliable if expected frequencies are below 10. In this case, a better approximation can be obtained by reducing the absolute value of each difference between observed and expected frequencies by 0.5 before squaring; this is called Yates' correction for continuity.

In cases where the expected value, E, is found to be small (indicating either a small underlying population probability, or a small number of observations), the normal approximation of the multinomial distribution can fail, and in such cases it is found to be more appropriate to use the G-test, a likelihood ratio-based test statistic. Where the

Generalization

In order to generalise the results into the population parameters, the confidence interval concept was applied. The 95% confidence level was assumed. The confidence interval reflects a range that the author is confident (but not certain) contains the population parameters. The limits are deduced by the following formula (for n>30)

$- z\sqrt{[(p(1-p)/n]} \leq \pi \leq p + z\sqrt{[(p(1-p)/n]}$;

Where

p = sample proportion

π = population proportion

Standard sampling error = $\sqrt{[(p(1-p)/n]}$

From tables: ƶ =±1.96 @ 95% confidence interval

Please refer to Appendix I for a tabular presentation of the generalization of the sample to the population.

4.1.8. Methods of achieving validity

To ensure the internal validity of the research study, the author took precautions to eliminate other possible explanations for the results that were observed. The triangulation strategy was used to increase the probability that their explanations are the most likely ones for the observations. Multiple sources of data was collected with the hope that they will all converge to support the hypothesis. The thinking behind this approach is supported by Leedy & Ormrod (2005), who is of the opinion that the internal validity of a research study is the extent to which its design and the data it yields allow the researcher to draw accurate conclusions about cause-and-effect and other relationships within the data.

The following strategies on the other hand was used to enhance the external validity of the research project. A representative sample was taken and replication in different

companies was used. A specific representative number of people who is estimated to be 50% of the management and 50% of employees was sampled. Replication was achieved by repeating the same study on various construction companies. The same interview forms were used within the different construction companies. This approach is also supported by Leedy PD & Ormrod (2005), who stipulate that the external validity of the research study is the extent to which its results apply to situations beyond the study itself- in other words, the extent to which the conclusions drawn can be generalized to other applications.

4.2 KEY QUESTIONS AND CONCEPTS

The key questions and concepts that will be investigated are; How leadership is conceived and operationalized in the practice within the construction industry in South Africa. The author will examine the importance of leadership in South African construction industry as an emergent process.

4.3 LIMITATIONS

It is clear that the field of interest can become very wide which might result in a lengthy research. Limited resources and funding prevented the researcher from studying all the key questions and concepts. There are also time limitations that resulted in a reduced choice of sample size. Only 16 construction companies were researched. The number of participants from construction companies was limited to 10 of which 50% was employees and 50% was management samples. The background of most of the construction companies that were samples is engineering construction companies instead of civil construction companies. The researcher had to sample mainly engineering construction companies due to poor cooperation from some well known civil companies. Another reason for the focus on engineering construction companies is the fact that the research results could be used in the immediate working environment of the researcher to add value through recommendations to contracting companies.

Most of the responding construction companies are in the Gauteng and North West province which is not a true reflection of the general South African construction industry population. Due to financial and time constrains results are mainly a reflection of companies in Gauteng and North West province with a strong engineering background.

CHAPTER5: RESEARCH RESULTS

5.1. FINDINGS

Findings indicated that the data is not a normal distribution but a skew normal distribution. It was also found that the sampling method that was used was not effective because the questionnaire was given to supervisors who had to hand it out to subordinates. This process might have resulted in employees being afraid of victimization or feeling intimidated to answer questions in such a way that would have had a bad reflection on the company and immediate supervisors. The fact that the construction companies that were consulted were mostly contractors with whom the researcher was dealing with on a daily basis could also have resulted in incorrect data as these companies might have been under pressure to create a good impression with the researcher. Co-operation from the management of other construction companies who were afraid to reveal their in house management challenges was another problem. The researcher decided to focus on construction companies that he was dealing with as co-operation from extended companies was not satisfactory. Questionnaire were issued to companies and were never completed as indications showed that the supervisor might have been afraid of being evaluated. Other challenges were the fact that participants did not understand all the questions which revealed the design was not sufficient for lower level employees. Participating companies did not complete all questionnaires that were issued and did not maintain the 50/50% split between management and employees.

5.2.INITIAL DATA ANALYSIS: DESCRIPTIVE STATISTICS

Profile of respondents

Among a total of 80 respondents from different companies categorisation was done with regard to the perception of management and employees on leadership of the responding companies with suitable graphical displays. The following paragraphs presents results of the survey.

Frequency distributions

In terms of the conception of leadership by employees and management respondents 54%, 40% of respondents agreed and strongly agreed that leadership is the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organization and that management is an authority relationship that exists between a manager and subordinates to produce and sell goods and services. 74% of respondents agreed that management and leadership are not mutually exclusive. 65% of respondents agreed that most immediate supervisors are managers instead of leaders. Most respondents indicated that their supervisors have the ability to understand complex issues , makes good decisions and solves difficult problems. Supervisors needs to understand complex issues which enables

them to utilise opportunities. A great number of samples indicated that their supervisors have the ability to control their emotions but sometimes acts selfishly and do not admit to making mistakes. Most respondents indicated that their supervisors influence employees in order to achieve set objectives and persist under difficult or complex conditions. Supervisors are able to handle high demands when taking responsibility. A great number of respondents indicated that their supervisors are ethical and is able to deal well with conditions of uncertainty in the work environment. Respondents further indicated that they respect their supervisors and are happy with their employment and are optimistic about the future of their employment with their current employers.

In terms of the operationalization of leadership 95% of employees and management respondents agreed that their supervisors are effective leaders. 50% of respondents indicated that their companies do not have a leadership development program that is linked to the business strategy of the company. Ranking of importance Triats are presented in figure 5.

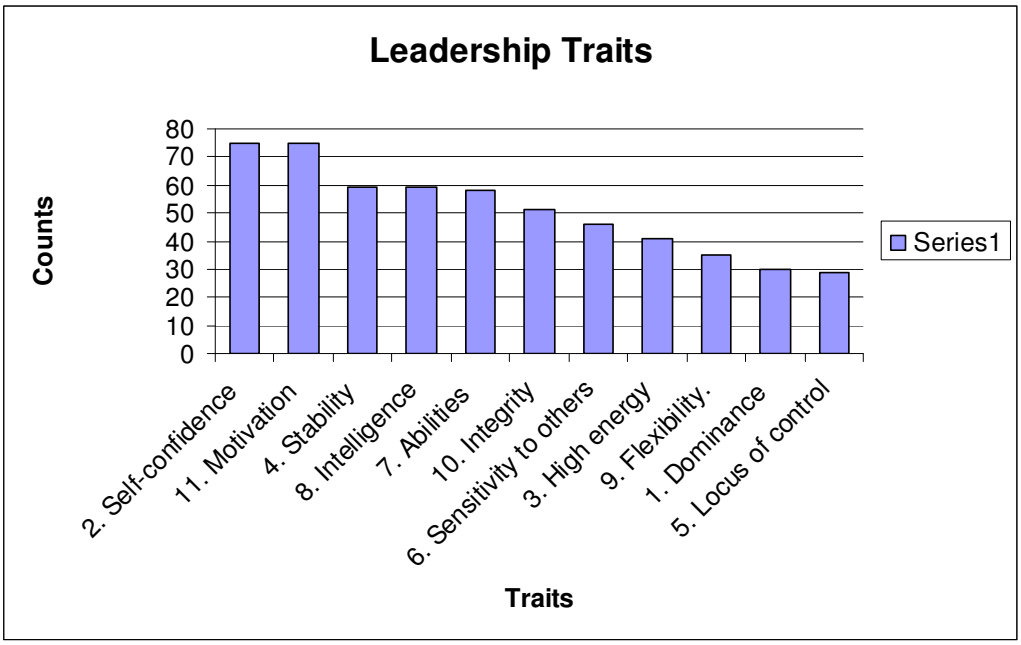


Figure 4 Ranking of importance of Traits.

Figure 4 is a graphical representation of the importance of the different traits that supervisor should have to be effective leaders in terms of the opinion of employees and management

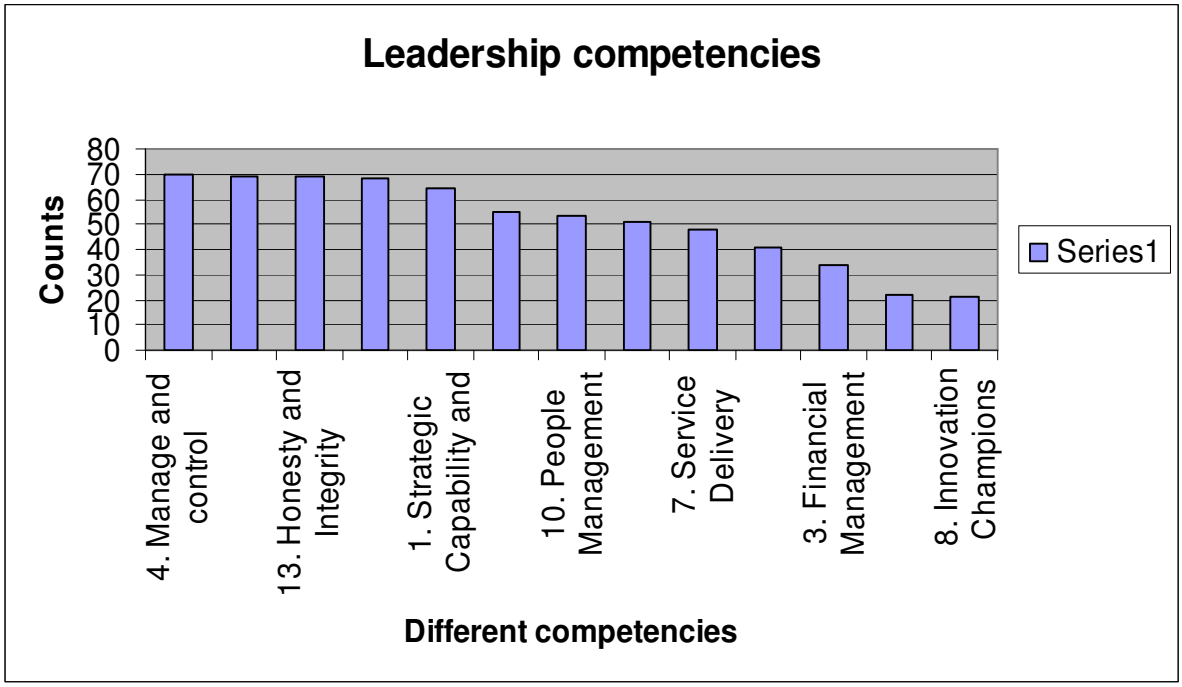


Figure: 5 Ranking of Leadership competencies

Figure:5 is a graphical representation of the importance of the different competencies that supervisors should have to be effective leaders in terms of the opinion of employees and management.Please refer to Appendix F for a tabular presentation of frequency distributions.

5.3. DATA ANALYSIS

Data from respondents were analyzed in the form of descriptive statistics. The relationship between leadership and management styles, leadership outcomes, to subordinate and supervisor (management) perceptions was examined through correlation analysis using Excel. The current study explored how leadership style is conceived and operationalized by subordinates and middle management in the construction industry. The results from the analyses of data collected from 16 companies show that each project manager uses a variety of leadership styles as the occasion demands: transactional , transformational and *laissez-faire*. Some project managers mostly apply transformational leadership but in some circumstances they may act in a transactional way. Irrespective of the leadership outcomes, subordinates' performance and commitment is still impacted by the dominant leadership behavior or style normally adopted by each project manager. The behavior of the project leader is ultimately the main building block of the type of supervisory style cultured in the company.

D. NUMERICAL AND GRAPHICAL DESCRIPTION OF A SINGLE VARIABLE

The following guidelines were used during the data;

Chi-test returns the probability that a value of the c^2 statistic could have happened by chance under the assumption of independence. Rejecting H0 means the two samples come from a different distribution. (Press, Teukolsky, Vetterlling, and Flannery, 1992)

For the Wilcoxon rank-sum test rejecting Ho means there is a difference in the distribution of values in the two samples. (Bhattacharyya & Johnson ,1977,).

Cramer's V value is an indication of the association of nominal variables. Zero indicating no association and one indicating a strong association (Diammantpoulos and Schlegelmich, 2006).

The p-value for the Pearson Correlation is an indication of the correlation between ordinal variables. One or negative one indicating a strong positive or negative correlation and zero indicating no correlation. (Chernoff and Lehmann 1954).

How is leadership conceived?

Cross-tabulations for Question1.

The data analysis indicated that 100% of management and 88% of employees agree or strongly agrees that leadership is 'the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organization.This can be regarded as a transformational leadership characteristic. (S.O Ogunlana,K Limsila, 2008,p167)

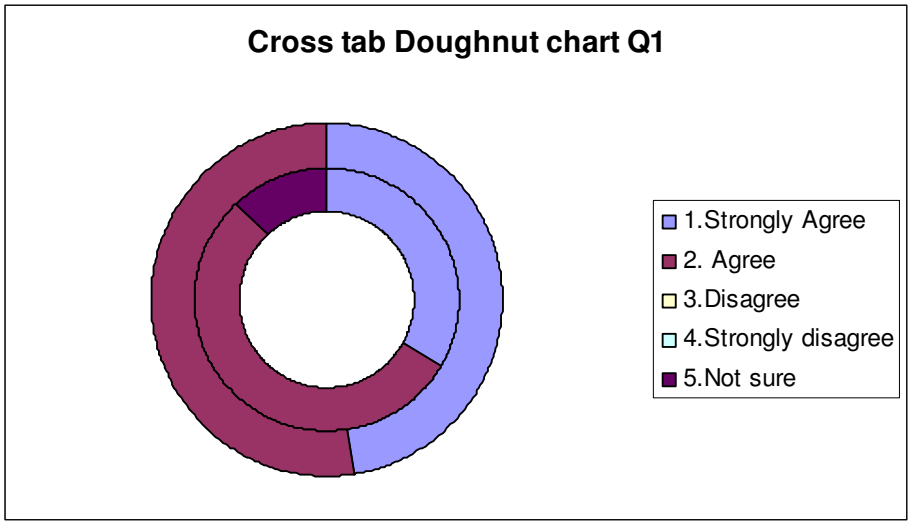


Figure 6: Cross-tabulation Doughnut chart for Question1. (Note: In all Doughnut charts the outer ring represents the management sample and the inner ring represents the employees sample.)

Null Hypothesis: There is no difference in opinions between management and employees on the definition of leadership.
Alternative Hypothesis: There is a difference in opinions between management and employees on the definition of leadership.

The p-value for the Pearson Correlation was 0.945. No significant difference between management and employees in terms of their opinions were found. The null-hypothesis of independence was not rejected. As indicated, there seems to be a small difference. Overall, a 94% of sample agrees with the definition of House et al.,1999,p. 184 on leadership. We can use the Wilcoxon test for the hypotheses. The alternative hypothesis is two-sided because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value of 0.

Question1 Ho is not rejected In conclusion there is no significant difference in opinions between management and employees on the definition of leadership.

Cross-tabulations for Question2.

The data analysis indicated that 92% of management and 95% defined management as an authority relationship that exists between a manager and subordinates to produce and sell goods and services. This can be regarded as *laissez-faire*l leadership characteristics. (S.O Ogunlana,K Limsila, 2008,)

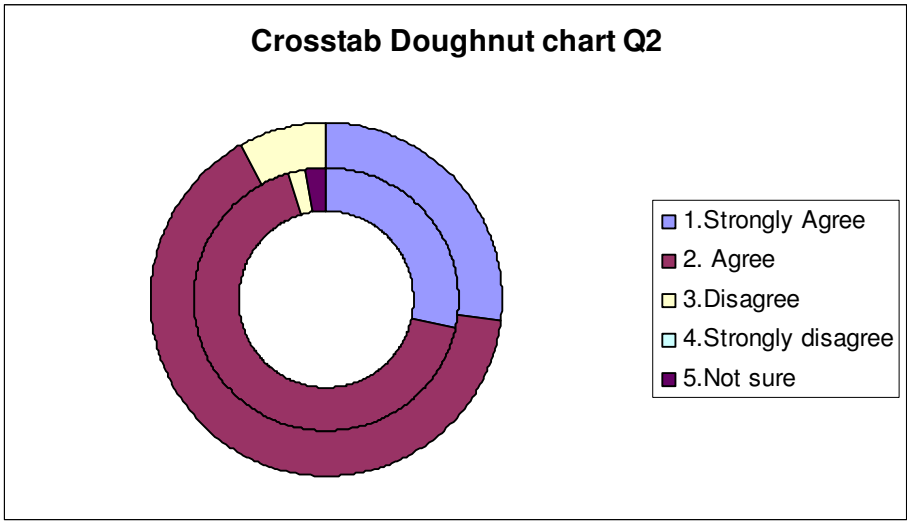


Figure 7: Cross-tabulation Doughnut chart for Question 2

Null Hypothesis: There is no difference in opinions between management and employees on the definition of management.
Alternative Hypothesis: There is a difference in opinions between management and employees on the definition of management.

The p-value for the Pearson Correlation was 0.994. No significant difference between management and employees in terms of their opinions were found. The null-hypothesis of independence was not rejected. As indicated, there seems to be a small difference. Overall, a 94% of sample agrees with the definition of Rost (1991) on management. We can use the Wilcoxon test for the hypotheses. The alternative hypothesis is two-sided because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value of 0.

Question2 Ho is not rejected In conclusion there is no difference in opinions between management and employees on the definition of management.

Cross-tabulations for Question 3.

The data analysis indicated that 71% of management and 76% feels that management and leadership are not mutually exclusive. (Covey) This can be regarded as transformational leadership characteristics. (S.O Ogunlana,K Limsila, 2008,)

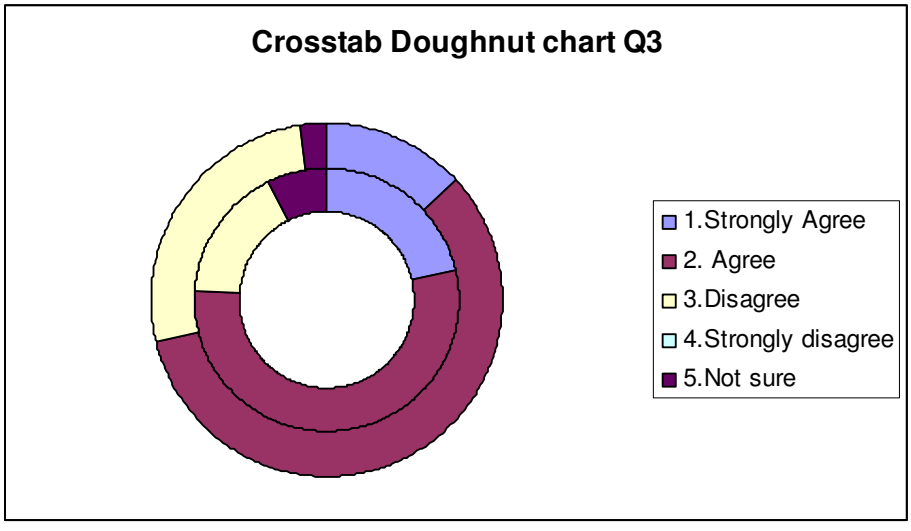


Figure 8: Cross-tabulation Doughnut chart for Question 3.

Null Hypothesis: There is no difference in opinions between management and employees on the exclusivity between leadership and management.

Alternative Hypothesis: There is a difference in opinions between management and employees on the exclusivity between leadership and management.

The p-value for the Pearson Correlation was 0.956. No significant difference between management and employees in terms of their opinions was found. The null-hypothesis of independence was not rejected. As indicated, there seems to be a small difference. Overall, a 74% of sample feels that management and leadership are not mutually exclusive. We can use the Wilcoxon test for the hypotheses The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1and lower Wilcoxon test has a p-value of 0.

Question3 Ho is not rejected In conclusion there is no difference in opinions between management and employees on the exclusivity between leadership and management.

Cross-tabulations for Question 4.

The data analysis indicated that 73% of management and 57% feels most immediate supervisors are managers instead of leaders. This can be regarded as *laissez-faire* leadership characteristics. (S.O Ogunlana,K Limsila, 2008,)

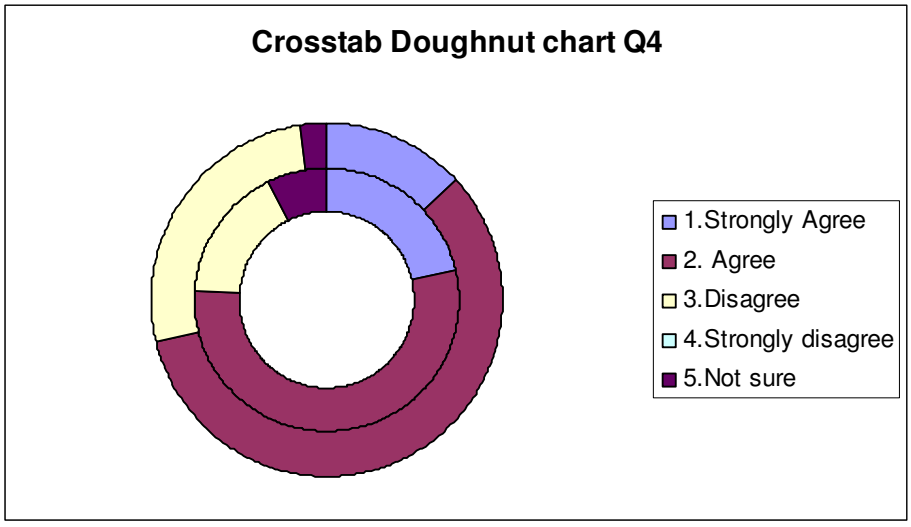


Figure 9: Cross-tabulation Doughnut chart for Question 4

Null Hypothesis: There is no difference in opinions between management and employees on the view of the roles of most immediate supervisors.

Alternative Hypothesis: There is a difference in opinions between management and employees on the view of the roles of most immediate supervisors.

The p-value for the Pearson Correlation was 0.923. No significant difference between management and employees in terms of their opinions were found. The null-hypothesis of independence was not rejected. As indicated, there seems to be a small difference. Overall, a 65% of the sample feels that most immediate supervisors are managers instead of leaders. We can use the Wilcoxon test for the hypothesis testing. The alternative hypothesis is two-sided because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value of 0.

Question4 Ho is not rejected, in conclusion there is no difference in opinions between management and employees on the view of the roles of most immediate supervisors.

Cross-tabulations for Question 5.

The data analysis indicated that 84% of management and 93% feels that supervisors has the ability to understand complex issues. This can be regarded as transformational leadership characteristics. (S.O Ogunlana,K Limsila, 2008,)

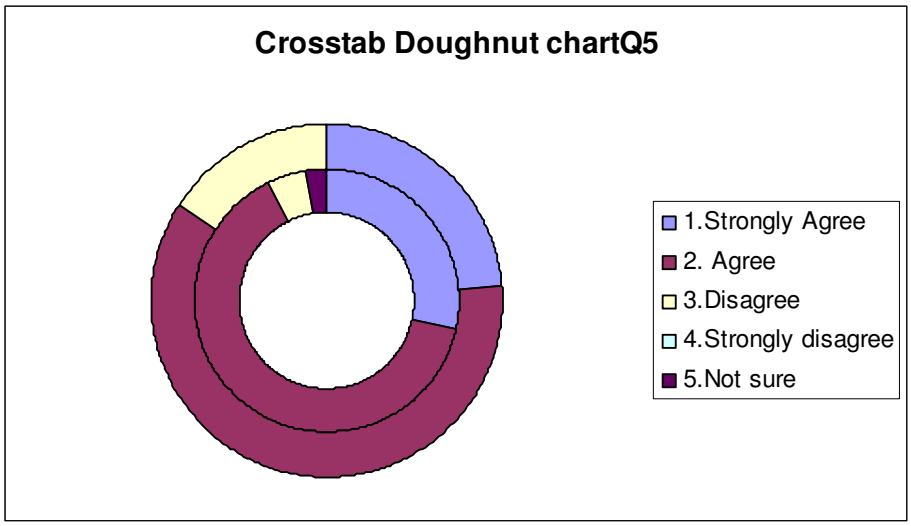


Figure 10: Cross-tabulation Doughnut chart for Question 5

Null Hypothesis: There is no difference in opinions between management and employees on the view of the understanding of complex issues.

Alternative Hypothesis: There is a difference in opinions between management and employees on the view of the understanding of complex issues.

The p-value for the Pearson Correlation was 0.974. No significant difference between management and employees in terms of their opinions was found. The null-hypothesis of independence was not rejected. As indicated, there seems to be a small difference. Overall, a 89% of sample feels that management and leadership feels that supervisors have the ability to understand complex issues. We can use the Wilcoxon test for the hypotheses The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value of 0.

Question5 Ho is not rejected, in conclusion there is no difference in opinions between management and employees on the view of the understanding of complex issues.

Cross-tabulations for Question 6.

The data analysis indicated that 98% of management and 92% feels that supervisors makes good decisions. This can be regarded as transactional leadership characteristics. (S.O Ogunlana,K Limsila, 2008,)

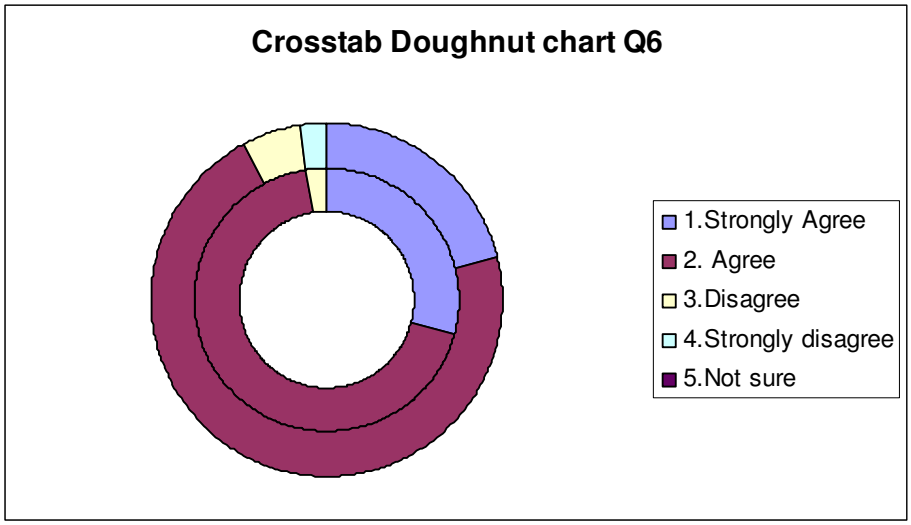


Figure 10: Cross-tabulation Doughnut chart for Question 6.

Null Hypothesis: There is no difference in opinions between management and employees on the view of the decision making abilities of their supervisors.

Alternative Hypothesis: There is a difference in opinions between management and employees on the view of the decision making abilities of their supervisors.

The p-value for the Pearson Correlation was 0.987. No significant difference between management and employees in terms of their view on the decision making abilities of their supervisors. The null-hypothesis of independence was not rejected. As indicated, there seems to be a small difference. Overall, a 95% of sample feels that supervisors makes good decisions. We can use the Wilcoxon test for the hypothesis testing. The alternative hypothesis is two-sided because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value of 0.

Question6 Ho is not rejected In conclusion there is no difference in opinions between management and employees on the view of the decision making abilities of their supervisors.

Cross-tabulations for Question 7.

The data analysis indicated that 81% of management and 83% feels that supervisors solves difficult problems. This can be regarded as transactional leadership characteristics. (S.O Ogunlana,K Limsila, 2008,)

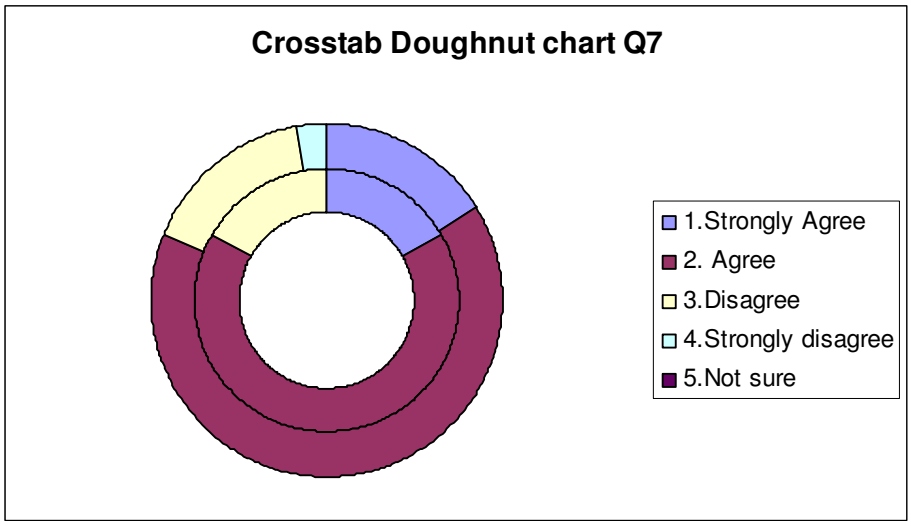


Figure 11: Cross-tabulation Doughnut chart for Question 7.

Null Hypothesis: There is no difference in opinions between management and employees on the view of the problem solving abilities of their supervisors.

Alternative Hypothesis: There is a difference in opinions between management and employees on the view of the problem solving abilities of their supervisors.

The p-value for the Pearson Correlation was 0.999 No significant difference between management and employees in terms of their view on the decision making abilities of their supervisors. The null-hypothesis of independence was not rejected. As indicated, there seems to be a small difference. Overall, a 82% of sample feels that supervisors solves difficult problems. We can use the Wilcoxon test for the hypothesis testing. The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value of 0.

Question7 Ho is not rejected, in conclusion there is no difference in opinions between management and employees on the view of the problem solving abilities of their supervisors.

Cross-tabulations for Question 8.

The data analysis indicated that 92% of management and 81% feels that supervisors has to understand complex issues which enables him to utilise opportunities solves difficult problems. This can be regarded as transactional leadership characteristics. (S.O Ogunlana,K Limsila, 2008,)

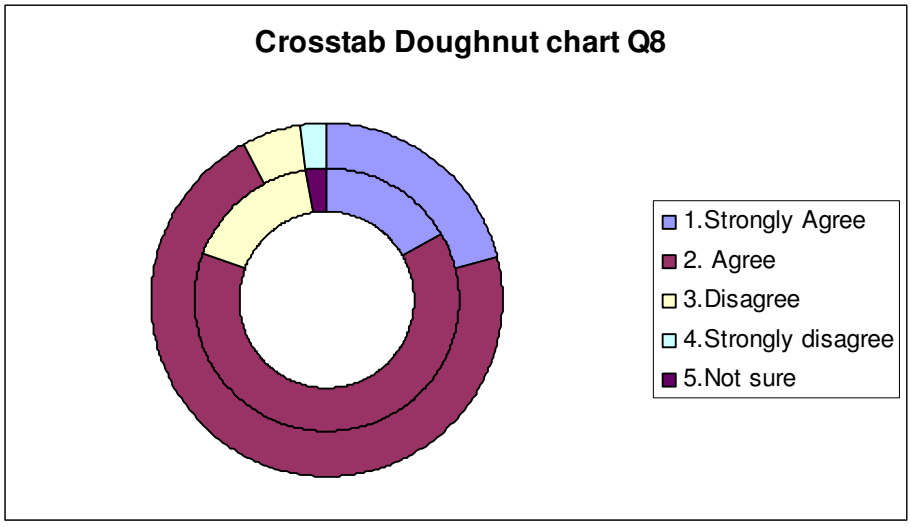


Figure 12: Cross-tabulation Doughnut chart for Question 8.

Null Hypothesis: There is no difference in opinions between management and employees on the view of the problem solving abilities requirements of their supervisors.

Alternative Hypothesis: There is a difference in opinions between management and employees on the view of the problem solving abilities requirements of their supervisors.

The p-value for the Pearson Correlation was 0.975. No significant difference between management and employees in terms of their view on the decision making abilities requirements of their supervisors. The null-hypothesis of independence was not rejected. As indicated, there seems to be a small difference. Overall, a 86% of sample feels that supervisors solves difficult problems. For the Chi square test the P-values is 0.324 which is greater than 0.05 hence there is no significant difference between the view of management and employees from the different companies. The null-hypothesis of independence is accepted.

We can use the Wilcoxon test for the hypothesis testing. The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1. and lower Wilcoxon test has a p-value 0.

Question8 Ho is not rejected In conclusion there is no difference in opinions between management and employees on the view of the problem solving abilities requirements of their supervisors.

Cross-tabulations for Question 9.

The data analysis indicated that 76% of management and 81% feels that supervisors have the ability to control their emotions. This can be regarded as transformational leadership characteristics. (S.O Ogunlana,K Limsila, 2008,)

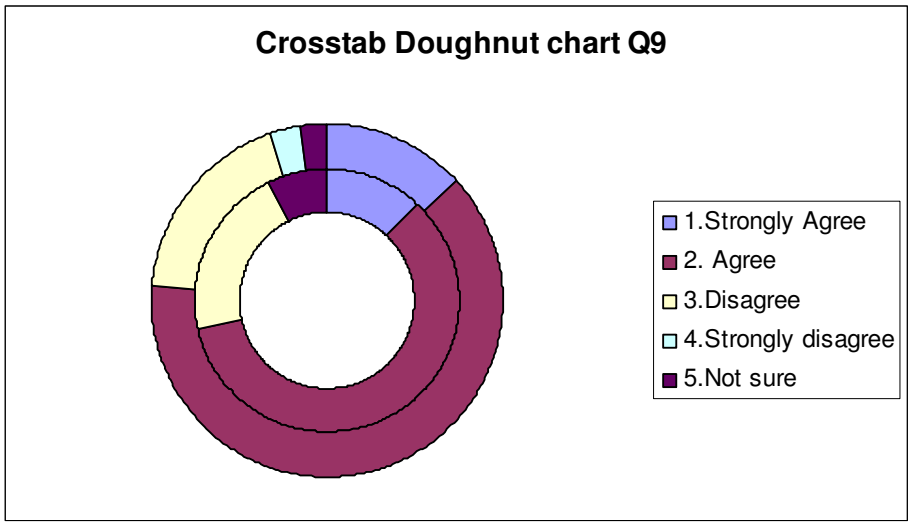


Figure 13: Cross-tabulation Doughnut chart for Question 9.

Null Hypothesis: There is no difference in opinions between management and employees on the view of the self control of their supervisors.

Alternative Hypothesis: There is a difference in opinions between management and employees on the view of the problem solving abilities requirements of their supervisors.

The p-value for the Pearson Correlation was 0.991 No significant difference between management and employees in terms of their view on the decision making abilities requirements of their supervisors. The null-hypothesis of independence was not rejected. As indicated, there seems to be a small difference. Overall, a 74% of sample feels that supervisors have the ability to control their emotions . For the Chi square test the P-values is 0.722 which is greater than 0.05 hence there is no significant difference between the view of management and employees from the different companies. The null-hypothesis of independence is accepted.

We can use the Wilcoxon test for the hypothesis testing. The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value of 0.

Question9 Ho is not rejected, in conclusion there is no difference in opinions between management and employees on the view of the self control of their supervisors.

Cross-tabulations for Question 10.

The data analysis indicated that 42% of management and 60% feels that supervisors sometimes acts selfishly and do not admit to making mistakes. This can be regarded as *laissez-faire*l leadership characteristics. (S.O Ogunlana,K Limsila, 2008,)

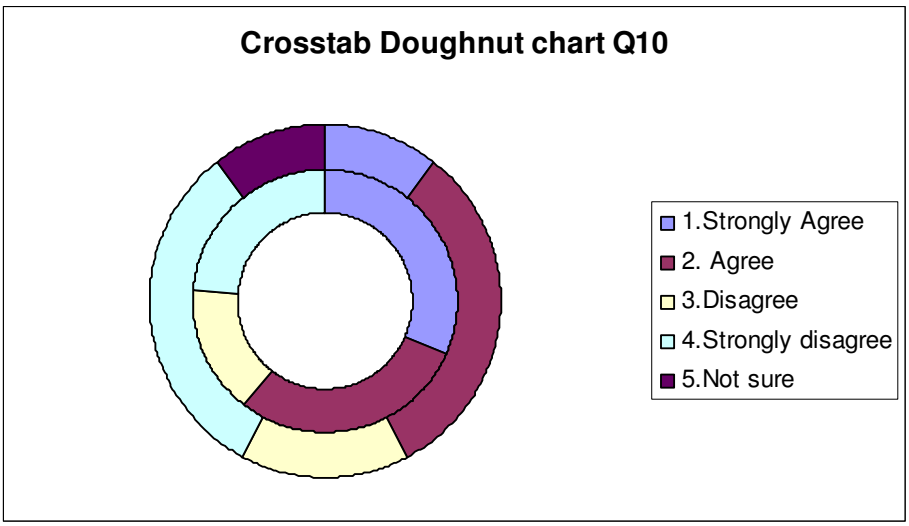


Figure 14: Cross-tabulation Doughnut chart for Question 10.

Null Hypothesis: There is no difference in opinions between management and employees on the view of the actions on supervisors.

Alternative Hypothesis: There is a difference in opinions between management and employees on the view of the actions on supervisors.

The p-value for the Pearson Correlation was 0.445. Significant difference between management and employees in terms of their view on the fact that supervisors acts selfishly and do not admit to making mistakes. The null-hypothesis of independence is rejected. Overall, a 54% of sample feels that supervisors sometimes acts selfishly and do not admit to making mistakes. For the Chi square test the P-values is 0.158 which is greater than 0.05 hence there is no significant difference between the view of management and employees from the different companies. The null-hypothesis of independence is accepted.

We can use the Wilcoxon test for the hypothesis testing. The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value of 0.

Question10 Ho is not rejected, in conclusion there is no difference in opinions between management and employees on the view of the actions of supervisors.

Cross-tabulations for Question 11.

The data analysis indicated that 79% of management and 83% feels that supervisors influence employees in order to achieve set objectives. This can be regarded as transformational leadership characteristics (S.O Ogunlana,K Limsila, 2008).

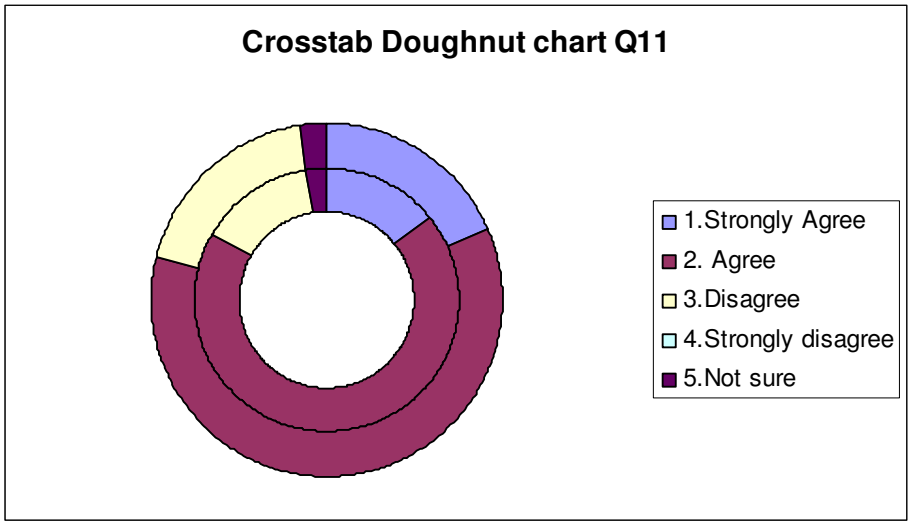


Figure 15: Cross-tabulation Doughnut chart for Question 11.

Null Hypothesis: There is no difference in opinions between management and employees on the view of the influence of supervisors to achieve set objectives.

Alternative Hypothesis: There is a difference in opinions between management and employees on the view of the influence of supervisors to achieve set objectives.

The p-value for the Pearson Correlation was 0.992. No significant difference between management and employees in terms of their view of the influence of supervisors to achieve set objectives. The null-hypothesis of independence is not rejected. Overall, a 81% of sample feels that supervisors influence employees to achieve set objectives.

We can use the Wilcoxon test for the hypothesis testing. The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value of 0.

Question11 Ho is not rejected, in conclusion there is no difference in opinions between management and employees on the view of the influence of supervisors to achieve set objectives.

Cross-tabulations for Question 12.

The data analysis indicated that 82% of management and 55% feels that supervisors influence employees to persist under difficult or complex conditions. This can be regarded as transformational leadership characteristics (S.O Ogunlana,K Limsila, 2008).

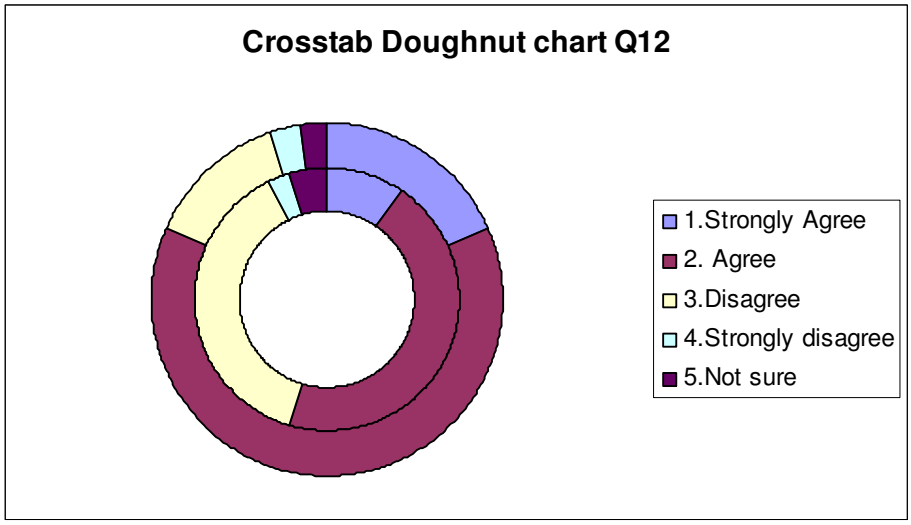


Figure 16: Cross-tabulation Doughnut chart for Question 12.

Null Hypothesis: There is no difference in opinions between management and employees on the view of the influence of supervisors to achieve set objectives under difficult or complex conditions.

Alternative Hypothesis: There is a difference in opinions between management and employees on the view of the influence of supervisors to achieve set objectives under difficult or complex conditions.

The p-value for the Pearson Correlation was 0.770. No significant difference between management and employees in terms of their view of the influence of supervisors to achieve set objectives under difficult or complex conditions. The null-hypothesis of independence is not rejected. Overall, a 68% of sample feels that supervisors influence employees to persist under difficult or complex conditions. For the Chi square test the P-values is 0.120 which is greater than 0.05 hence there is no significant difference between the view of management and employees from the different companies. The null-hypothesis of independence is accepted.

We can use the Wilcoxon test for the hypothesis testing. The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence

there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value of 0.

Question12 Ho is not rejected, in conclusion there is no difference in opinions between management and employees on the view of the influence of supervisors to achieve set objectives under difficult or complex conditions.

Cross-tabulations for Question 13.

The data analysis indicated that 90% of management and 93% feels that supervisors are able to handle high demands when taking responsibility. This can be regarded as contractual leadership characteristics (S.O Ogunlana,K Limsila, 2008).

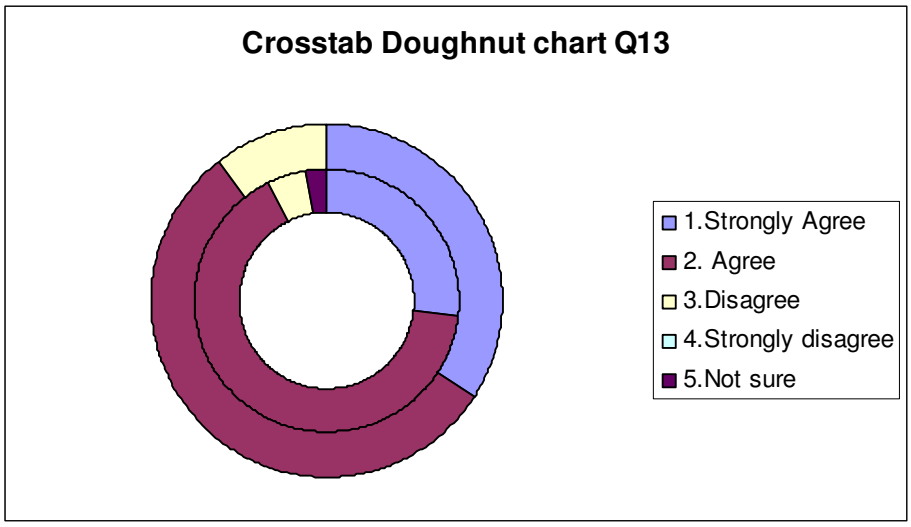


Figure 17: Cross-tabulation Doughnut chart for Question 13.

Null Hypothesis: There is no difference in opinions between management and employees on the view of the abilities of supervisors to work under demanding conditions.

Alternative Hypothesis: There is a difference in opinions between management and employees on the view of the abilities of supervisors to work under demanding conditions.

The p-value for the Pearson Correlation was 0.972. No significant difference between management and employees in terms of their abilities to handle high demands when taking responsibility. The null-hypothesis of independence is not rejected. Overall, a 91% of sample feels that supervisors are able to handle high demands when taking responsibility.

We can use the Wilcoxon test for the hypothesis testing. The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value of 0.

Question13 Ho is not rejected, in conclusion there is no difference in opinions between management and employees on the view of the abilities of supervisors to work under demanding conditions.

Cross-tabulations for Question 14.

The data analysis indicated that 100% of management and 95% feels that supervisors acts ethically in the workplace. This can be regarded as transformational leadership characteristics (S.O Ogunlana,K Limsila, 2008).

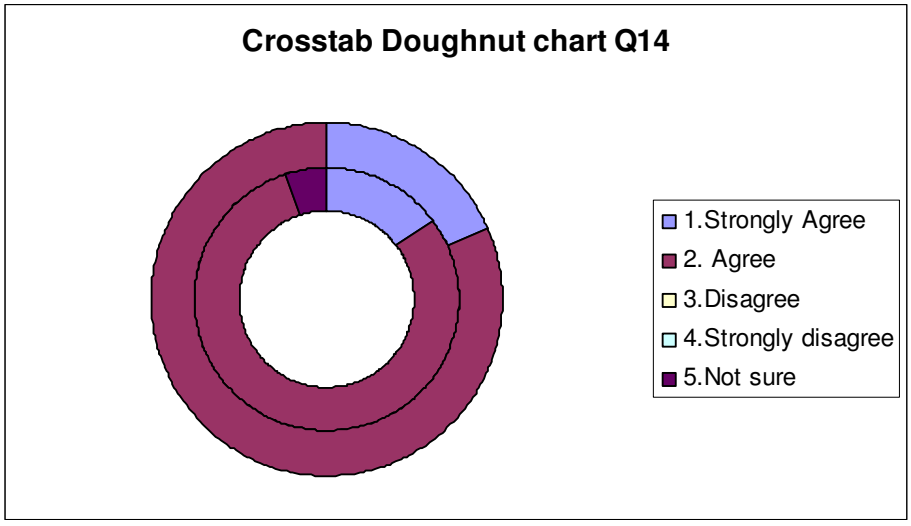


Figure 18: Cross-tabulation Doughnut chart for Question 14.

Null Hypothesis: There is no difference in opinions between management and employees on ethical behaviour.

Alternative Hypothesis: There is a difference in opinions between management and employees on ethical behaviour.

The p-value for the Pearson Correlation was 0.996. No significant difference between management and employees on ethical behaviour. The null-hypothesis of independence is not rejected. Overall, a 99% of sample feels that supervisors have ethical behaviour.

We can use the Wilcoxon test for the hypothesis testing. The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value of 0.

Question14 Ho is not rejected, in conclusion there is no difference in opinions between management and employees on ethical behaviour.

Cross-tabulations for Question 15.

The data analysis indicated that 16% of management and 19% feels that supervisors do not deal well with conditions of uncertainty in their work. This can be regarded as *laissez-faire*l leadership characteristics (S.O Ogunlana,K Limsila, 2008).

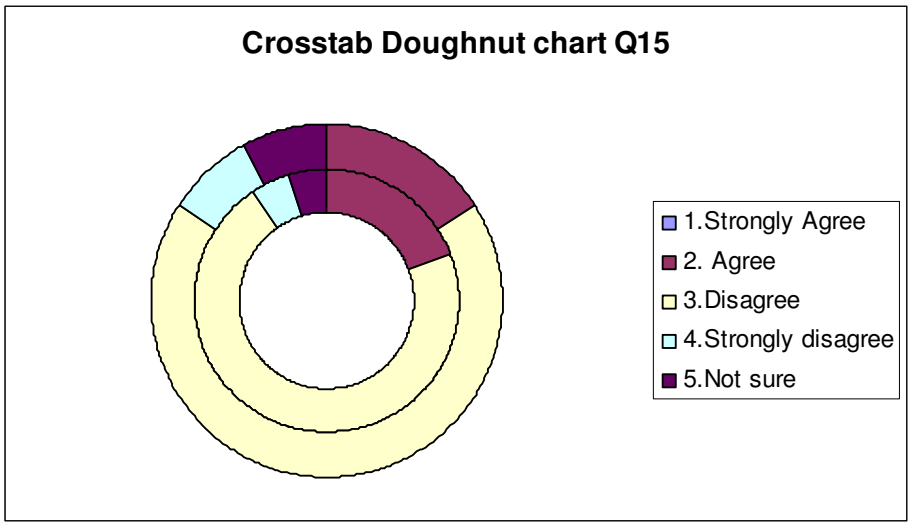


Figure 19: Cross-tabulation Doughnut chart for Question 15.

Null Hypothesis: There is no difference in opinions between management and employees on behaviour of supervisors with conditions of uncertainty in their work.

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Alternative Hypothesis: There is a difference in opinions between management and employees on behaviour of supervisors with conditions of uncertainty in their work.

The p-value for the Pearson Correlation was 0.996. No significant difference between management and employees on behaviour of supervisors with conditions of uncertainty in their work. The null-hypothesis of independence is not rejected. Overall, a 18% of sample feels that supervisors do not behave well with conditions of uncertainty in their work.

We can use the Wilcoxon test for the hypothesis testing. The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value of 0.

Question15 Ho is not rejected, in conclusion there is no difference in opinions between management and employees on behaviour of supervisors with conditions of uncertainty in their work.

Cross-tabulations for Question 16.

The data analysis indicated that 95% of management and 95% respect their supervisors. This can be regarded as transformational leadership characteristics (S.O Ogunlana,K Limsila, 2008).

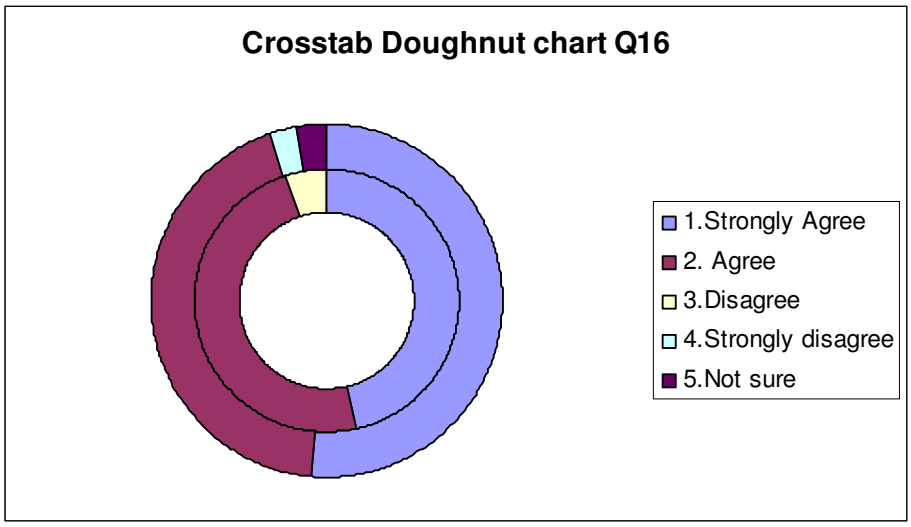


Figure 20: Cross-tabulation Doughnut chart for Question 16.

Null Hypothesis: There is no difference in opinions between management and employees on respect for their supervisors.

Alternative Hypothesis: There is a difference in opinions between management and employees on respect for their supervisors.

The p-value for the Pearson Correlation was 0.981. No significant difference between management and employees on respect for their supervisors. The null-hypothesis of independence is not rejected. Overall, a 95% of sample respect their supervisors. For the Chi square test the P-values is 0.373 which is greater than 0.05 hence there is no

significant difference between the view of management and employees from the different companies. The null-hypothesis of independence is accepted

We can use the Wilcoxon test for the hypothesis testing. The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value of 0.

Question16 Ho is not rejected, in conclusion there is no difference in opinions between management and employees on respect for their supervisors.

Cross-tabulations for Question 17.

The data analysis indicated that 95% of management and 85% of employees says their supervisors are ethical. This can be regarded as transformational leadership characteristics (S.O Ogunlana,K Limsila, 2008).

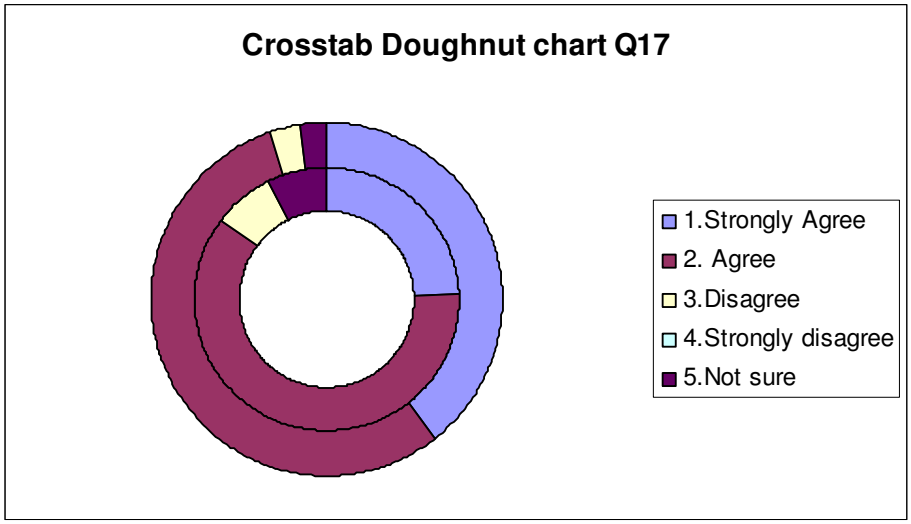


Figure 21: Cross-tabulation Doughnut chart for Question 17.

Null Hypothesis: There is no difference in opinions between management and employees.

Alternative Hypothesis: There is a difference in opinions between management and employees.

The p-value for the Pearson Correlation was 0.941. No significant difference between management and employees on ethics of. The null-hypothesis of independence is not rejected. Overall, a 90% of sample says their supervisors are ethical.

We can use the Wilcoxon test for the hypothesis testing. The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value of 0.

Question17 Ho is not rejected, in conclusion there is no difference in opinions between management and employees.

Cross-tabulations for Question 18.

The data analysis indicated that 92% of management and 95% of employees says they are happy working for their current supervisor. This can be regarded as transformational leadership characteristics (S.O Ogunlana,K Limsila, 2008).

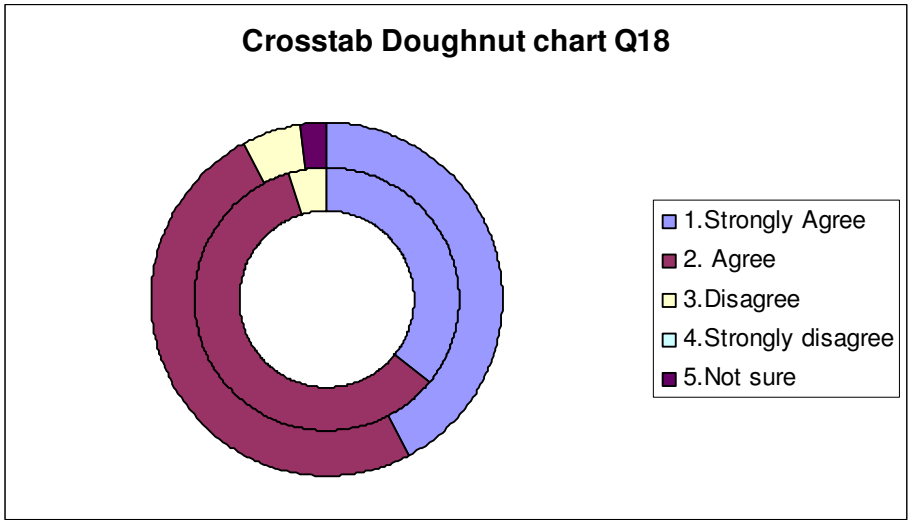


Figure 22: Cross-tabulation Doughnut chart for Question 18.

Null Hypothesis: There is no difference in opinions between management and employees.

Alternative Hypothesis: There is a difference in opinions between management and employees.

The p-value for the Pearson Correlation was 0.978. No significant difference between management and employees on ethics of supervisors. The null-hypothesis of independence is not rejected. Overall, a 94% of sample says they are happy working for their current supervisor.

We can use the Wilcoxon test for the hypothesis testing. The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value 0.

Question18 Ho is not rejected In conclusion there is no difference in opinions between management and employees.

Cross-tabulations for Question 19.

The data analysis indicated that 95% of management and 88% of employees are optimistic about the future of their current employment. This can be regarded as transformational leadership characteristics (S.O Ogunlana,K Limsila, 2008).

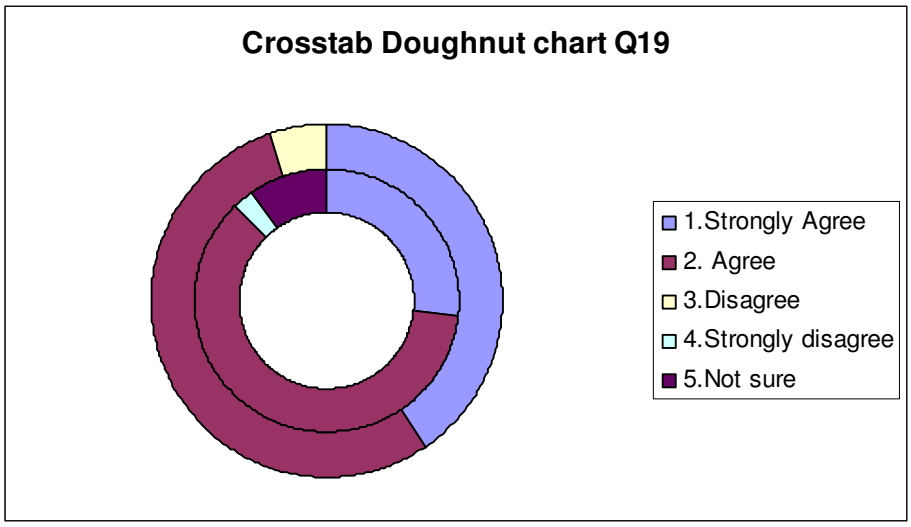


Figure 23: Cross-tabulation Doughnut chart for Question 19.

Null Hypothesis: There is no difference in opinions between management and employees.

Alternative Hypothesis: There is a difference in opinions between management and employees.

The p-value for the Pearson Correlation was 0.929. No significant difference between management and employees. The null-hypothesis of independence is not rejected. Overall, a 91% of sample says they are optimistic about the future of their current employment. For the Chi square test the P-values is 0.092 which is greater than 0.05 hence there is no significant difference between the view of management and

employees from the different companies. The null-hypothesis of independence is accepted.

We can use the Wilcoxon test for the hypotheses The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value of 0.

Question19 Ho is not rejected, in conclusion there is no difference in opinions between management and employees.

How is leadership operationalized?

Cross-tabulations for Question 20.

The data analysis indicated that 97% of management and 93% of employees feels their supervisor are effective leaders. This can be regarded as transformational leadership characteristics (S.O Ogunlana,K Limsila, 2008).

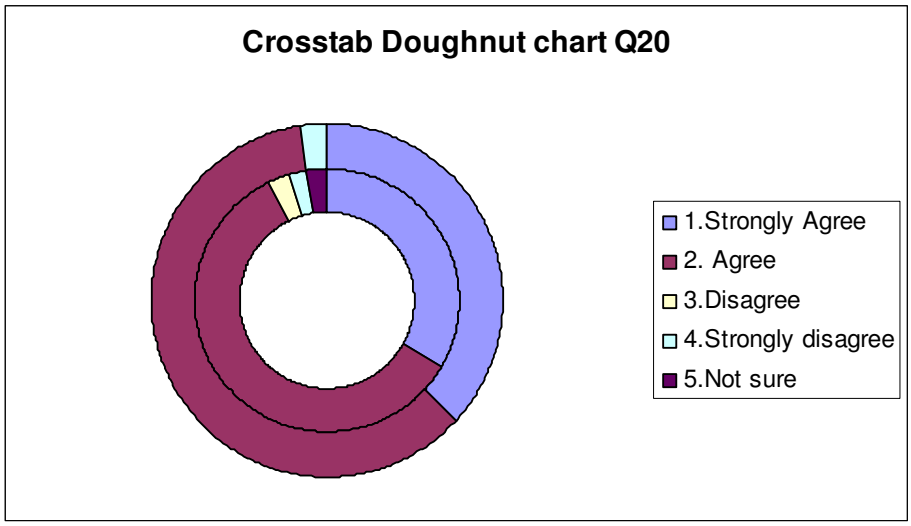


Figure 24: Cross-tabulation Doughnut chart for Question 20.

Null Hypothesis: There is no difference in opinions between management and employees.

Alternative Hypothesis: There is a difference in opinions between management and employees.

The p-value for the Pearson Correlation was 0.998. No significant difference between management and employees. The null-hypothesis of independence is not rejected.

Overall, a 95% of the sample says their supervisor are effective leaders. For the Chi square test the P-values is 0.756 which is greater than 0.05 hence there is no significant difference between the view of management and employees from the different companies. The null-hypothesis of independence is accepted.

We can use the Wilcoxon test for the hypotheses.The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1. and lower Wilcoxon test has a p-value of 0.

Question20 Ho is not rejected, in conclusion there is no difference in opinions between management and employees.

Cross-tabulations for Question 21.

The data analysis indicated that management and employees feels their supervisor needs the following traits to be an effective leaders.

Tabel: 2 Traits Ranked in importance.

Self-confidence	1
Motivation	2
Stability	3
Intelligence	4
Abilities	5
Integrity	6
Sensitivity to others	7
High energy	8
Flexibility.	9
Dominance	10
Locus of control	11

Null Hypothesis: There is no difference in opinions between management and employees.

Alternative Hypothesis: There is a difference in opinions between management and employees.

For the Chi square test the P-values is 0 which is smaller then 0.05 hence there is a significant difference between the view of management and employees from the different companies. The null-hypothesis of independence is not accepted. The p-value for the Pearson Correlation was 0.927 No significant difference between management and employees. The null-hypothesis of independence is not rejected. Cramer's V of 0.518 value is indicating moderate association.

Cross-tabulations for Question 22.

The data analysis indicated that management and employees feels their supervisor needs the following competencies to be a effective leaders.

Table: 3 Competencies Ranked in importance.

Manage and control	1
Communication	2
Honesty and Integrity	3
Problem Solving and Analysis	4
Strategic Capability and Leadership	5
Knowledge Management	6
People Management and Empowerment	7
Programme and Project Management	8
Service Delivery	9
Client Orientation and Customer Focus	10
Financial Management	11
Change Management	12
Innovation Champions	13

Null Hypothesis: There is no difference in opinions between management and employees.

Alternative Hypothesis: There is a difference in opinions between management and employees.

For the Chi square test the P-values is 1 which is greater then 0.05 hence there is no significant difference between the view of management and employees from the different companies. The null-hypothesis of independence is accepted. The p-value for the Pearson Correlation was 1 No significant difference between management and employees. The null-hypothesis of independence is not rejected. Cramer's V of 0.639 value is indicating moderate association.

Cross-tabulations for Question 23.

The data analysis indicated that 92% of management and 93% of employees feels believes that supervisor leader continuously creates ways to increase efficiency in their workplace.

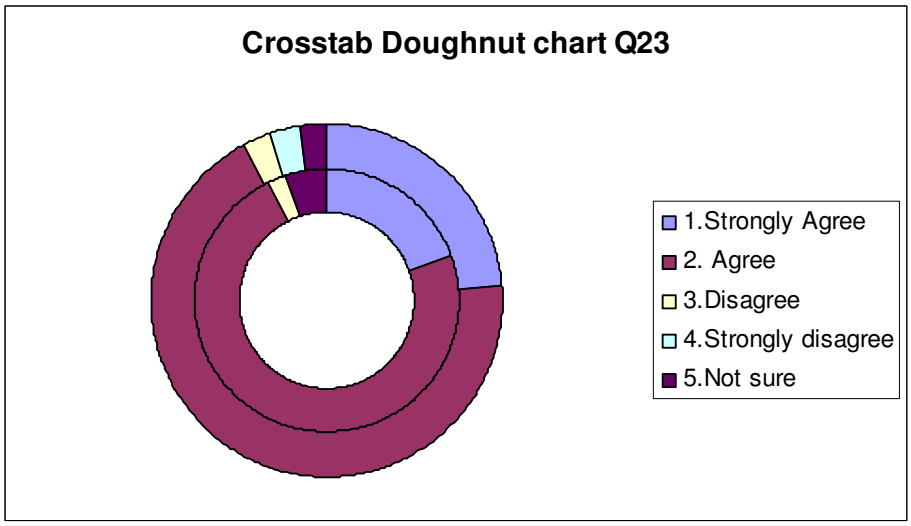


Figure 25: Cross-tabulation Doughnut chart for Question 23.

Null Hypothesis: There is no difference in opinions between management and employees.

Alternative Hypothesis: There is a difference in opinions between management and employees.

The p-value for the Pearson Correlation was 0.995 No significant difference between management and employees. The null-hypothesis of independence is not rejected. Overall, a 92% of the sample feels believes that supervisor leader continuously creates ways to increase efficiency in their workplace. For the Chi square test the P-values is 0.815 which is greater than 0.05 hence there is no significant difference between the view of management and employees from the different companies. The null-hypothesis of independence is accepted.

We can use the Wilcoxon test for the hypothesis testing. The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value 0.

Question23 Ho is not rejected, in conclusion there is no difference in opinions between management and employees.

Cross-tabulations for Question 24.

The data analysis indicated that 95% of management and 93% of employees feels that Leadership development is very important for the sustained operation of their companies.

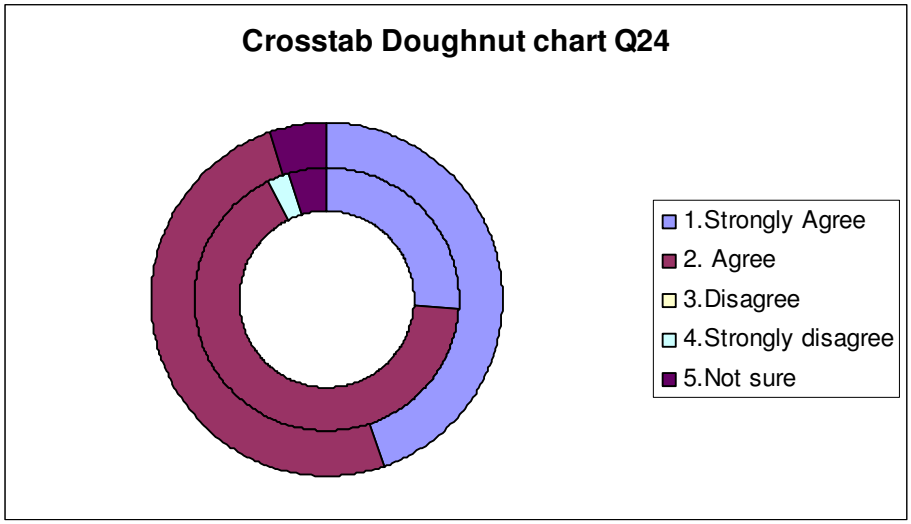


Figure 26: Cross-tabulation Doughnut chart for Question 24.

Null Hypothesis: There is no difference in opinions between management and employees.

Alternative Hypothesis: There is a difference in opinions between management and employees.

The p-value for the Pearson Correlation was 0.895 No significant difference between management and employees. The null-hypothesis of independence is not rejected. Overall, a 95% of the sample indicated that their companies have leadership development programs.

We can use the Wilcoxon test for the hypotheses The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1. and lower Wilcoxon test has a p-value 0.

Question24 Ho is not rejected, in conclusion there is no difference in opinions between management and employees.

Cross-tabulations for Question 25.

The data analysis indicated that 50% of management and 48% of employees indicated that their companies has leadership development programs.

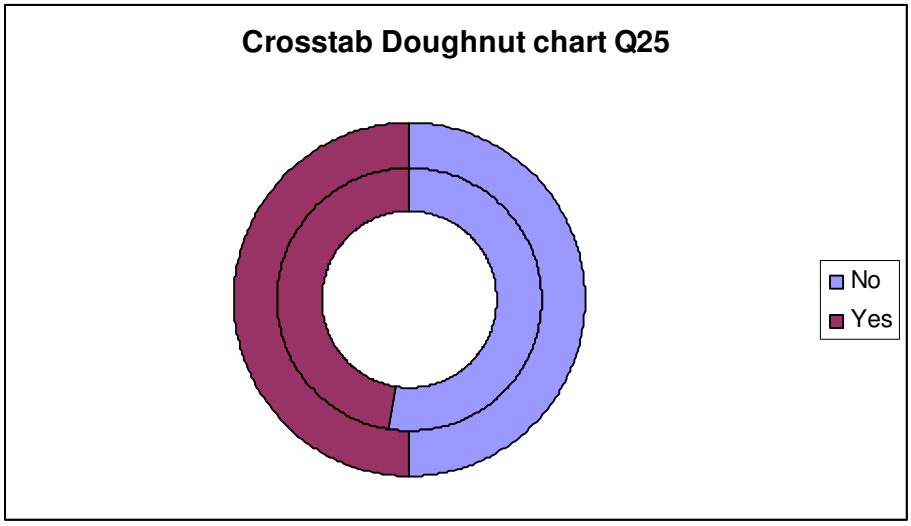


Figure 27: Cross-tabulation Doughnut chart for Question 25.

Null Hypothesis: There is no difference in opinions between management and employees.

Alternative Hypothesis: There is a difference in opinions between management and employees.

For the Chi square test the P-values is 0 which is less than 0.05 hence there is a significant difference between the view of management and employees from the different companies. The null-hypothesis of independence is not accepted. Overall, a 49% of the sample feels that leadership development is very important for the sustained operation of their companies. Cramer's V of 0.708 value is indicating moderate association.

Question25 Ho is not rejected ,in conclusion there is no difference in opinions between management and employees.

Cross-tabulations for Question 26.

The data analysis indicated that 53% of management and 48% of employees indicated that their leadership development program is linked to business objectives and strategies.

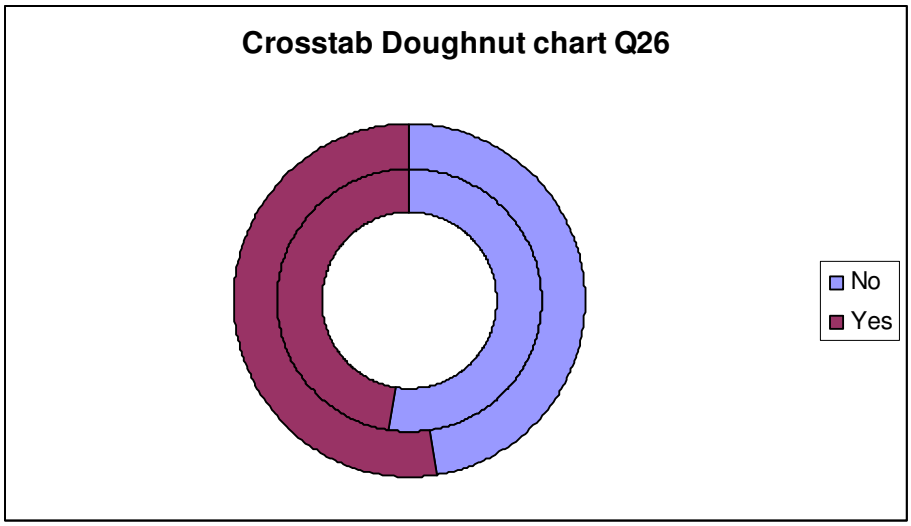


Figure 28: Cross-tabulation Doughnut chart for Question 26.

Null Hypothesis: There is no difference in opinions between management and employees.

Alternative Hypothesis: There is a difference in opinions between management and employees.

The p-value for the Pearson Correlation was -1.There is a negative correlation between management and employees. The null-hypothesis of independence is rejected.

For the Chi square test the P-values is 0 which is less than 0.05 hence there is a significant difference between the view of management and employees from the different companies. The null-hypothesis of independence is not accepted. Overall, a 50% of the sample indicated that their leadership development program is linked to business objectives and strategies. Cramer's V of 0.708 value is indicating moderate association.

Question26 Ho is not rejected In conclusion there is no difference in opinions between management and employees

Cross-tabulations for Question 27.

The data analysis indicated that 97% of management and 95% of employees feels valued as an employee.

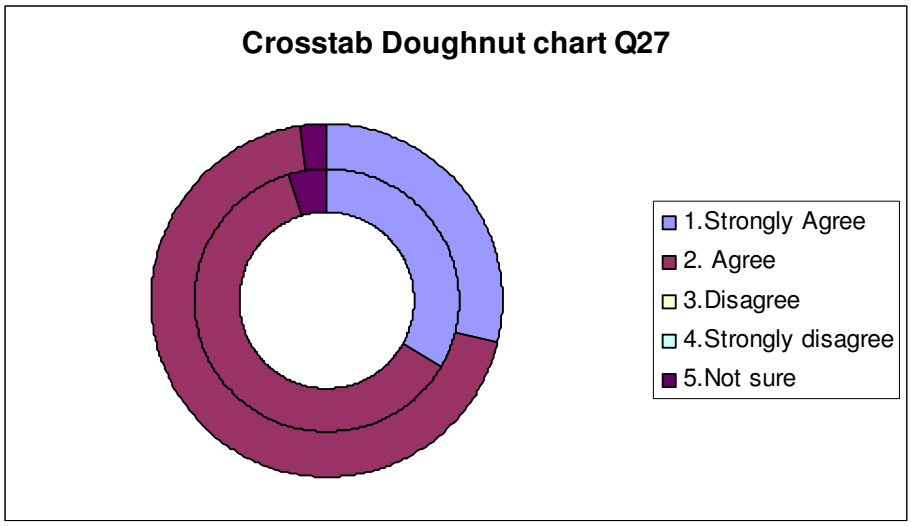


Figure 29: Cross-tabulation Doughnut chart for Question 27.

Null Hypothesis: There is no difference in opinions between management and employees.

Alternative Hypothesis: There is a difference in opinions between management and employees.

The p-value for the Pearson Correlation was 0.994. There is a good correlation between management and employees. The null-hypothesis of independence is not rejected. Overall, a 96% of the sample indicated that their feel valued as an employee.

We can use the Wilcoxon test for the hypothesis testing. The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value of 0.

Question27 Ho is not rejected, in conclusion there is no difference in opinions between management and employees.

5.4 ETHICAL CONSIDERATIONS

Within certain disciplines like the use of human subjects in research it is quite common for ethics to become a problem. Whenever human beings are the focus of investigations, we must look closely at the ethical implications of what we are proposing to do. This research being qualitative of nature required allot of human interaction and interpretation, which made ethical consideration crucial.

Most ethical issues in research, as explained by Leedy PD & Ormrod JE. 2005, fall into one of the four categories; the protection from harm, informed consent, the right to privacy and honesty with professional colleagues. As a general rule, the risk involved in participating in a study should not be appreciably greater than their normal risk of day-to-day living. Participants should not risk losing life or limb, nor should they be subjected to unusual stress, embarrassment or loss self-esteem. The aim of this research was not to expose any participants to bodily harm. Forms were used to obtain consent of participants that describes the nature of the research project as well as the roll of the participants in the research. The research participants were told of the nature of the study to be conducted and given the choice of either participating or not participating. Furthermore, they were informed that, if they agree to participate, they have the right to withdraw from the study at any time. Any participation in the study was strictly voluntary.

The right to privacy of each participant were respected by presenting the findings in such a way that the readers becomes aware of how a particular participant has responded or behaved [Leedy PD & Ormrod JE. 2005]. The intention of the researcher is to report findings in a complete and honest fashion, without misrepresenting what was done or intentionally misleading the reader about the nature of findings. Full acknowledgment of all material belonging to a second party was given in his research.

5.5. SIGNIFICANCE

Determining whether the findings have practical significance as well as statistical significance was considered. Practical significance focused on whether findings are actually useful in practice. As the sample size was large, the standard error of the mean was small, and so it was found that even a minor difference in the results between the construction companies is statistically significant. The researcher in addition needs to consider if the difference is also practically significant. Whether knowing how leadership is conceived and operationalized in the practice within the construction industry in South Africa will benefit the industry or the SBL will only be determined through statistical testing of data conclusion drawn and the application of effective recommendations.

5.6. FINDINGS OF OTHER RELATED RESEARCH

A group of scholars have conducted research on leadership from the construction industry. Bryman *et al.* (1987) concentrated on the leadership of site manager; they used Fiedler's Contingency model and Fiedler's LPC Scale to measure the leader's behaviour in England and Wales. Their result indicated that the more relationship oriented they performed, the more effective leadership they would be. Rowlinson *et al.* (1993) examined the leadership styles of Hong Kong Chinese construction managers by using Fiedler's LPC score and House's styles grid. They found that project managers and

leaders are generally relationship-orientated with less concern on task accomplishment. They tend to use a supportive style in the feasibility study and pre-contract phase, and a directive style in the post-contract stage of works. Different leadership styles are employed by the same project leaders which may attribute to the different situations. Enshassi and Burgess (1991) studied the relationship between leadership styles of construction site managers and their effectiveness in the Middle East. They found a strong association between site managers' style and their effectiveness. The high task and high employee orientation style is the most effective style in managing multi-cultural workforces. Managers need to be friendly, accessible, and understanding of their subordinates' personalities and requirements with all employees on a project. In addition, they have to be task oriented in order to have control over the process of the work and achieve the target. According to Mustapha and Naoum (1998), team management style (9, 9) was chosen by all high performing site managers as their preferred management style. The finding further showed a significant association between the level of authority given to the site managers and their level of effectiveness. High performing site managers were given higher authority than moderate performing ones. Odusami *et al.* (2003) concluded that there was significant relationship between the project leader's professional qualification, his leadership style, team composition and overall project performance. The most appropriate leadership style identified in their research is consultative autocrat which is similar to team management used in Mustapha and Naoum's (1998) study (S.O Ogunlana,K Limsila, 2008,p168).

Other groups of scholars explained that leadership behaviour is culturally determined and different from culture to culture. (Burger and Bass, 1979; Lok and Crawford, 2004). National culture can produce statistically significant moderating effects on the impact of leadership on outcomes, subordinate's performance, expectations, organizational commitment and job satisfaction are varying from country to country because of the dissimilarities in cultures as well (Al-Meer, 1989; Hofstede, 1991). Besides, some scholars have conducted the research on the relationship between leadership and its outcomes such as satisfaction, work performance, commitment and their result showed the positive association between them (Euske and Jackson, 1980; Savery, 1994). Therefore, it can be assumed that the variations in leadership styles and individual preferences are influenced by cultural variations which lead to differences in outcomes (S.O Ogunlana,K Limsila, 2008,p168).

Likhitwonnawut's (1996) study revealed that the actual leadership styles of construction site managers in Thailand tend to be participative in the feasibility and pre-contract stages, and supportive in the construction phase whereas Sumpunwetchakul (2001) found that the actual leadership style in Thai construction projects are generally directive

and achievement-oriented than supportive and participative. However, Likhitwonnawut's (1996) study pointed out that the preferred leadership style for Thai construction projects is relationship oriented, socio independent, and less task oriented. In addition, the study of project managers in Thailand by Ogunlana *et al.* (2002) described that the relationship-oriented leadership style is considered to be more important for the construction project managers than the task-oriented style (S.O Ogunlana,K Limsila, 2008,p168).

Yukongdi (2004) revealed that the most preferred management style by Thai employees was consultative management, followed by participative, paternalistic, while the least proportion of employees preferred an autocratic manager. Employees who perceived their managers to be more democratic also reported a higher level of influence in decision making, greater satisfaction with participation, and job satisfaction (S.O Ogunlana,K Limsila, 2008,p169).

Numerous scholars have provided evidence contradicting the above. For instance; Kumbanaruk (1987) observed that Thai employees are accustomed to a tradition of a top-down approach with employees receiving orders rather than thinking by themselves and expressing their own ideas. Thai culture is characterised by a tight hierarchical social system, accepted existential inequality and a strong value of relationships (Komin, 1990). Kumbanaruk (1987) and Komin (1990) suggested that Thai employees might feel uncomfortable working in a participative work setting. Involvement in decision-making may bring unwanted responsibilities to subordinates (Rohitratana, 1998). Thai culture, long time ago, does not encourage subordinates to dare to make mistakes, nor to take initiative but favour avoiding taking risks, because risk means bringing on more uncertain situations and increasing responsibilities (Holmes and Tangtongtavy, 1995). Therefore, it seems reasonable to reveal that working under a participative leader may not necessarily lead to greater job satisfaction among Thai employees (S.O Ogunlana,K Limsila, 2008,p170).

Hofstede (1980) remarked that in countries in which most employees are afraid to disagree with their managers (high power distance countries); subordinates prefer managers spread across the autocratic or paternalistic styles. Consequently, it is logical to predict that a larger proportion of Thai employees will prefer either an autocratic or paternalistic manager, while fewer employees would prefer a consultative manager. According to Lok and Crawford (2004), it was expected that higher “initiating structure” leadership style would provide greater commitment and job satisfaction in Asian firms whereas, higher “consideration” leadership style would provide greater commitment and job satisfaction in a western firm (S.O Ogunlana,K Limsila, 2008,p171).

Brown (2003) summarised the concept of task-oriented and relation-oriented leadership from several scholars in his research. He revealed that task oriented leadership have included initiating structure; concern with production; autocratic; achievement oriented; goal-achieving include contingent reward; management by exception (active) and management by exception (passive). Relations oriented leadership, or consideration consists of idealized influence (attributed); idealized influence (behaviour); individualized consideration; intellectual stimulation and inspirational motivation (S.O Ogunlana,K Limsila, 2008,p173).

According to Burns (1978), transactional leadership is the fundamental of one person taking the initiative in making contact with others for the purpose of an exchange of valued things or bargaining process. It involves rewards and punishments. Transactional leaders must identify and clarify to subordinates about the setting role, task requirements, performance expectations and the distribution of rewards and punishment according to performance (Bass, 1985) whereas transformational leadership occurs when leaders and followers raise one another to higher levels of motivation and morality. The transformational leader exhibits charisma, develops a vision, provides inspiration, motivates by creating high expectations and modelling appropriate behaviours, gives consideration to the individual, pays personal attention to followers, provides intellectual stimulation, and challenges followers with new ideas and approaches (Burns, 1978). From the foregoing, transactional leadership is akin to initiating structure or task orientation whereas the transformational style is similar to consideration or relations orientation (S.O Ogunlana,K Limsila, 2008,p174).

Brazier (2005) indicated that organic or flatter structures type of organization with decentralised decision making and low power distance of most Western firms tends to facilitate a more transformational leadership style while bureaucratic structures with high power distance and high collectivism of Asian firms encourage a more transactional style. (S.O Ogunlana,K Limsila, 2008,p177) Besides, the relationship between organizational commitment and work performance has also been examined by Mowday *et al.* (1974) and their result indicated that these two variables are positively linked to each other whereas Porter and Steers (1973) found positive relationship between organizational commitment and job satisfaction (S.O Ogunlana,K Limsila, 2008,p177).

CHAPTER 6: RESEARCH CLOSEOUT

6.1 DISCUSSION

How is leadership conceived?

Q1; It can be said with 95% confidence that 100% of management and between 81%-95% of employees in the construction industry believes that Leadership is 'the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organization. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.945.

Q2; It can be said with 95% confidence that between 86% -99% of management and between 91%-98% of employees in the construction industry believes that management is an authority relationship that exists between a manager and subordinates to produce and sell goods and services .There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.994.

Q3; It can be said with 95% confidence that between 59% -84% of management and between 65%-87% of employees in the construction industry believes that management and leadership are not mutually exclusive. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.958.

Q4; It can be said with 95% confidence that between 61% -85% of management and between 40%-74% of employees in the construction industry believes that most immediate supervisors are managers instead of leaders. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.928.

Q5; It can be said with 95% confidence that between 76% -93% of management and between 87%-98% of employees in the construction industry believes that their leaders has the ability to understand complex issues. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.974.

Q6; It can be said with 95% confidence that between 86% -98% of management and between 95%-100% of employees in the construction industry believes that their leaders make good decisions. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.987.

Q7; It can be said with 95% confidence that between 72% -91% of management and between 75%-91% of employees in the construction industry believes that their leaders solve difficult problems. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.999.

Q8; It can be said with 95% confidence that between 86% -98% of management and between 71%-91% of employees in the construction industry believes that their leaders need to be able to understand complex issues which should enable him to utilise opportunities. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.975.

Q9; It can be said with 95% confidence that between 65% -87% of management and between 59%-84% of employees in the construction industry believes that their leaders have the ability to control their emotions. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.991.

Q10; It can be said with 95% confidence that between 20% -65% of management and between 45%-76% of employees in the construction industry believes that their leaders sometimes acts selfishly and do not admit to making a mistake. There is not a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.445.

Q11; It can be said with 95% confidence that between 69% -89% of management and between 75%-92% of employees in the construction industry believes that their leaders influence employees in order to achieve set objectives. There is a good positive correlation between management and employees

for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.992.

Q12; It can be said with 95% confidence that between 72% -91% of management and between 67%-73% of employees in the construction industry believes that their leaders influence employees to persist under difficult or complex conditions. There is a moderate positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.77.

Q13; It can be said with 95% confidence that between 83% -96% of management and between 54%-81% of employees in the construction industry believes that their leaders are able to handle high demands when taking responsibility. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.972.

Q14; It can be said with 95% confidence that 100% of management and between 91%-100% of employees in the construction industry believes that their leaders are acting ethically at work. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.996.

Q15; It can be said with a high confidence that about 16% of management and between 18% of employees in the construction industry believes that their leaders does not deal well with conditions of uncertainty at work. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.996

Q16; It can be said with 95% confidence that between 90%-91 % of management and between 91%-100% of employees in the construction industry respects their leaders. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.981.

Q17; It can be said with 95% confidence that between 90%-99 % of management and between 77%-94% of employees in the construction industry feels that their leaders are ethical. There is a good positive correlation

between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.941.

Q18; It can be said with 95% confidence that between 86%-98 % of management and between 91%-100% of employees in the construction industry are happy working for their current supervisor. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.978.

Q19; It can be said with 95% confidence that between 81%-95 % of management and between 90%-99% of employees in the construction industry are optimistic about the future of their current employment. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.929.

How is leadership operationalized?

Q20; It can be said with 95% confidence that between 94%-100 % of management and between 87%-98% of employees in the construction industry feels that their supervisors are effective leaders. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.998.

Q21; There is a good positive correlation between management and employees in terms of their options on the necessary trait for effective leadership. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.927.

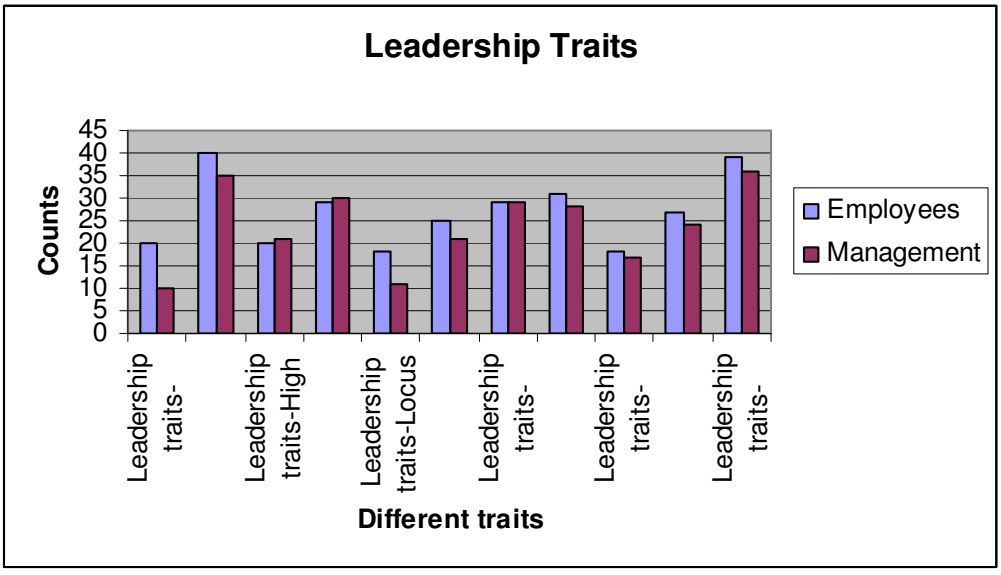


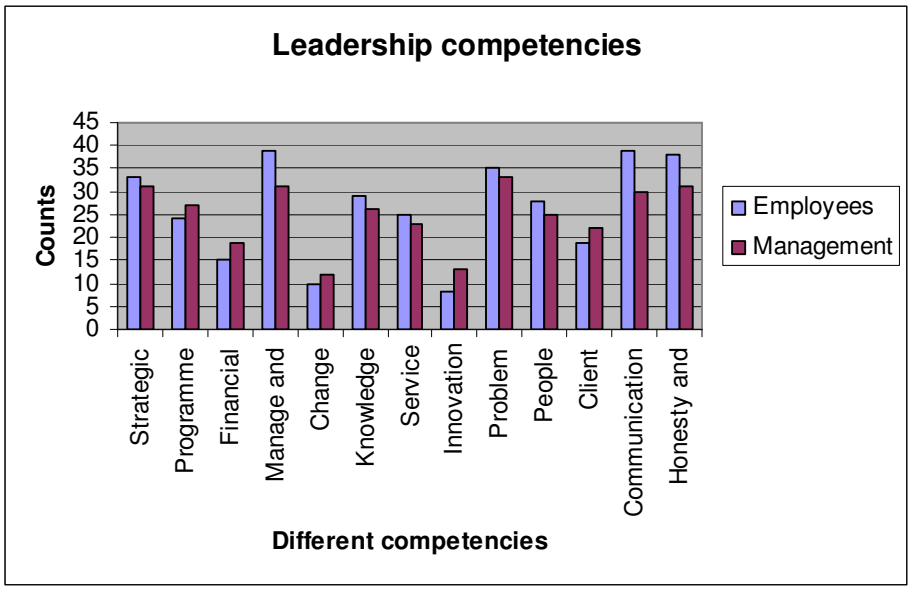
Figure: 30 Correlation on view on leadership traits.

There is a good correlation between the views of management and the views of employees on the different traits needed for leader to be effective leaders.

Q22; There is a good positive correlation between management and employees in terms of their options on the necessary competencies needed for effective leadership. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.954.

Figure: 31 Correlation on view on leadership competencies.

There is a good correlation between the views of management and the views of employees on the different competencies needed for leaders to be effective leaders.



Q23; It can be said with 95% confidence that between 86%-98 % of management and between 87%-98% of employees in the construction industry feels that their supervisors continuously creates ways to increase efficiency in their workplace. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.995.

Q24; It can be said with 95% confidence that between 90%-99 % of management and between 87%-98% of employees in the construction industry feels leadership development is very important for the sustained operation of their company. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.967.

Q25; It can be said with 95% confidence that between 30%-70 % of management and between 27%-68% of employees in the construction industry indicated their companies has a leadership development programme. There is a good positive correlation between management and employees for this question.

Q26; It can be said with 95% confidence that between 34%-71 % of management and between 27%-68% of employees in the construction industry indicated that their leadership development program is linked to business objectives and strategies. There is a negative correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of -1.

Q27; It can be said with 95% confidence that between 90%-99 % of management and between 87%-98% of employees in the construction industry feels valued as an employee. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.994.

6.2 RESEARCH HYPOTHESIS TESTING.

6.2.1.Sub-problems

Sub-problem 1

Null hypothesis, Ho1; There is no correlation between employees and management on the conception of leadership.

The null hypothesis is rejected.

Alternative hypothesis, Ha1; There is a correlation between employees and management on the conception of leadership.

The alternative hypothesis is accepted because data analysis revealed a clear correlation between the view of management and the views of employees on the conception of leadership.

Sub-problem 2

Null hypothesis, Ho2; There is no correlation between employees and management on the operationalization of leadership.

The null hypothesis is rejected.

Alternative hypothesis, Ha2; There is a correlation between employees and management on the operationalization of leadership.

The alternative hypothesis is accepted because data analysis revealed a clear correlation between the view of management and the views of employees on the operationalization of leadership.

6.2.2. Research hypothesis

Ho (Research), Leadership is not conceived and operationalized in the practice within the construction industry in South Africa.

The null hypothesis (Ho) is rejected.

Ha1 (Research), Leadership is negatively conceived and not effectively operationalized

The alternative null hypothesis (Ha1) is rejected.

Ha2 (Research), Leadership is positively conceived and effectively operationalized.

The alternative hypothesis (Ha2) is accepted because data analysis revealed that leadership is positively conceived and effectively operationalized in the construction industry in South Africa.

Please refer to Appendix D for a summary on the data analysis

6.3 CONCLUSIONS

The study revealed that most construction companies perceive leadership in the construction industry in South Africa to be a mixture of transactional and transformational leadership but is more transactional by nature. Management and employees in the construction industry believes that leadership is 'the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organization. It is further believed that management is an authority relationship that exists between a manager and subordinates to produce and sell goods and services and that management and leadership are not mutually exclusive. The majority of managers and employees believes that most immediate supervisors are managers instead of leaders. Both management and employees believes that their leaders has the ability to understand complex issues and makes good decisions.

Transactional leaders focus mainly on the physical and the security needs of subordinates. Leaders must clarify the expectations and offer recognition when goals are achieved. Management-by-exception (active). The leader specifies the standards for compliance, as well as what constitutes ineffective performance, and may punish subordinates for not complying with those standards. Management-by-exception (passive). Passive leaders avoid specifying agreements, clarifying expectations and standards to be achieved by subordinates, but will intervene when specific problems become apparent. Laissez-faire style is associated with dissatisfaction, unproductiveness and ineffectiveness (Deluga, 1992).

The study further revealed that employees and managers feel that leaders have to understand complex issues which enables them to utilize opportunities and solves difficult problems. Leaders have the ability to control their emotions but sometimes acts

selfishly and do not admit to making mistakes. Leaders influence employees to persist under difficult or complex conditions in order to achieve set objectives. Leaders are able to handle high demands when taking responsibility. Leader acts ethically and deals well with conditions of uncertainty which make them respect their leaders more. Most managers and employees are happy working for their current supervisors and are optimistic about the future of their current employment.

Transformational leaders encourages subordinates to put in extra effort and to go beyond what they (subordinates) expected before (Burns, 1978). The subordinates of transformational leaders feel trust, admiration, loyalty, and respect toward leaders and are motivated to perform extra-role behaviours (Bass, 1985; Katz and Kahn, 1978).Transformational leaders achieve the greatest performance from subordinates since they are able to inspire their subordinates to raise their capabilities for success and develop subordinates' innovative problem solving skills (Bass, 1985; Yammarino and Bass, 1990). This leadership style has also been found to lead to higher levels of organizational commitment and is associated with business unit performance (Barling et al., 1996)(S.O Ogunlana,K Limsila, 2008,p164).

Other studies have noted that construction managers are hardly perceived as leaders (Russell and Stouffer, 2003). Toor and Ofori (2008a,b,c) have also lamented on dearth of leadership research in the sector. They assert that the sector has paid too much attention to “management” to the exclusion of “leadership”. Studies of site managers suggest that they experience their work life as problematic in terms of needing to juggle a multiplicity of activities and because they have to perform a work role wherein it is essentially problematic to predict forthcoming events and occurrences (Styhre and Josephson, 2006; Mustapha and Naoum, 1998; Davidson and Sutherland, 1992). . Ethical challenges comprise corruption in both developing and industrialized countries and fraudulent and unethical professional practices (Toor SR, Ofori G,2006). (Shamas-ur-Rehman Toor *, George Ofori, 2007).In the context of projects, the relative balance between management and leadership can be said to favour to management. The reason is that, in the case of general leadership, the vision plays a significant role. However, the goal of a project is generally well-defined. As a consequence, the role of a project manager has focused much on managerial activities such as planning, monitoring, and controlling, rather than on creating a vision. In addition to management and leadership roles, another important distinction worth noticing is the distinction between the internal role and the external role (Ralf Muller , J. Rodney Turner, 2006a).

Alternatively said, the work of project leaders can be described as a combination of managerial roles and leadership roles, as well as internal and external roles – all with complex relationships (Ralf Muller , J. Rodney Turner, 2006a).

On the most general level of analysis, leadership can be demarcated into the two roles of management and leadership (Fiedler FE, 1967; Frame JD, 1987; Goleman D, Boyatzis RE, McKee A, 2002; Hair J, Anderson RE, Tatham RL, Black WC,1998) Typically, management deals with planning, budgeting, controlling, and structuring (i.e. to manage complexity). In contrast, leadership refers to a process of directing, visioning, and motivating: including visioning, coordinating, motivating, and the development of individuals (i.e. to manage change) (Frame JD, 1987).

However, based on the work of Dulewicz and Higgs (Dulewicz V, Higgs MJ,2003) and interview results (Ralf Muller , J. Rodney Turner, 2006a) predict that they would find a transformational leadership style preferred on complex change projects and a transactional style preferred on simple, engineering projects.) Conclusions drawing from this research tend to agree with research that was done by Ralf Muller and J. Rodney Turner.

In a survey on leadership for mega project, Toor and Ogunlana (Toor SR, Ogunlana SO,2006) observed that the attributes of transformational leaders were rated high as compared to those of transactional leaders. They also observed that the use of authority and punishment was rated among the lowest of leadership behaviors. Above research studies show that there is no agreement on what leadership style best suits the construction professionals and project managers. This is arguably understandable because no leadership style can be considered to be the best in all circumstances and at all times (Fiedler FE, 1967, Blake RR, Mouton JS), and context is a vital factor for the success and effectiveness of any particular leadership style (Fellows R, Liu A, Fong CM, 2003;p21).

Employees and manager feels that leadership is operationalized in such a way that supervisors are effective leaders by continuously creating ways to increase efficiency. Traits (starting with the most important and ending with the least important) like; self-confidence, motivation, stability , intelligence, abilities, integrity, sensitivity to others, high energy, flexibility ,dominance, and locus of control are key for supervisor to be effective leaders. Competencies (starting with the most important and ending with the least important) like ;manage and control, communication, honesty and Integrity, problem solving and analysis, strategic capability and leadership, knowledge management, people management and empowerment, programme and project management, service delivery,

client orientation and customer focus, financial management, change management, innovation champions are important for a supervisor to be an effective leader in the construction industry. An effective manager has to modify, change or adapt his natural character to suit different purposes and conditions (Beer, 1990:p11-12).This approach assumes that a finite number of individual traits of effective leaders could be found. Although some studies have reported that these traits contribute to leadership success, leadership success is however neither primarily nor completely a function of these or other traits (Gibson *et al.*, 2000:p275).

Leadership development is very important for the sustained operation of companies. Most companies have leadership development programmes which is linked to business objectives and strategies. Most manager and employees feel valued as an employee. Furthermore, most of the leadership styles which are offered in the leadership literature do not consider questions such as: how the leader develops a particular style, why the leader chooses to adopt a certain style; why some styles work within some teams but fail within others under similar conditions; whether there is an ideal set of qualities to constitute a best leadership style; how a leader switches from one style to another; whether it is possible to retain credibility by switching styles frequently; and how a leader can have several styles at the same time if he is working on different projects with different teams under different set of circumstances. To address these questions, it is necessary to recognize the ‘‘root construct’’ of leadership which can provide a broader base for understanding leaders, leadership and leadership development. George(George B,2003)and Luthans and Avolio (Luthans F, Avolio BJ, 2003, p.241–58) presented the construct of ‘‘authentic leadership’’ as a solution to contemporary leadership challenges and future leadership demands. While advocating the need for a new form of leadership, George (George B,2003) argues that every individual is unique with a distinctive set of personal values, life history, professional and personal experiences, and future motivations. Leaders can learn from others’ experiences (George B, 2004, p31, 29–35.) but they can not perfectly imitate them without looking foolish and exposed in front people (George B, Sims P, McLean AN, Mayer D, 2007;85(2):p129–38). Based on this, project managers need to have a unique and authentic leadership style that is coherent with their personality and is consistent with their personal values and motivations.

6.4 RECOMMENDATIONS

The changes witnessed in construction businesses are set to continue, with such ongoing change promising to be multi-dimensional, multi-level, discontinuous and radical. The traditional behavior of construction project managers that is primarily due to several factors which are inherent in the construction industry must be transformed to meet challenges facing the construction industry. There is the need for a shift in the

way project managers function and lead projects. They need to develop as authentic leaders to successfully operate in the increasingly complex working environment. Within a fast changing construction industry, there is mounting pressure on project managers to do more with fewer people and less resources. Under such circumstances, the people-side of project management, or what many would call leadership, is paramount to the successful delivery of desired results (Shamas-ur-Rehman Toor *, George Ofori.2007).

The transformational leadership style has significant relationships with work quality, work quantity, and creativity in problem solving of subordinates. Moreover, it has significant relationships with leadership outcomes; viz. effectiveness in work, satisfaction, extra effort and organizational commitment. By using the results, leaders can adjust their behaviours in practical ways to enhance subordinates' organizational commitment and job performance, thereby reaping increased productivity for their organizations as a consequence.

The transformational leadership style is regarded as a highly effective style when compared with transactional and laissez-faire factor but supervisors of project managers need to be aware that different leadership styles exhibited by the project manager are appropriate on different types of projects. Managers need to be aware of the needs of projects in their organization, develop individuals for pool of available project managers with appropriate styles for projects in their organization, and choose managers from that pool with appropriate styles for the projects at hand (Ralf Muller, J. Rodney Turner, 2006) A number of management writers advocate the use of coaching as a systematic leadership-training program. However, the literature on coaching suffers from a lack of systematic research which shows the alleged benefits of the proposed approach. (Alexander Styhre,p275, 2007) The author would like to articulate the need for authentic leadership development in construction managers and argues that authentic leadership must be embedded in the organizational culture so as to maximize the positive outcomes and achieve a veritable organizational performance. Organizations with authentic project leaders will have a sustainable competitive advantage over their competitors in the form of veritable performance and sustained growth. However, a major challenge here is to further the research on how to develop authentic leadership in individuals. (Shamas-ur-Rehman Toor *, George Ofori.2007) To achieve this, the current author calls for an extensive research exercise, multi-level and multi-dimensional research designs, and country-wide collaborations to explore authentic leadership across the global construction industry.

6.5 RECOMMENDATIONS FOR FUTURE RESEARCH

After a brief discussion on past and contemporary research trends in leadership, it is essential to highlight some important issues pertinent to research in leadership and make suggestions where this research should lead to in the future. Emerging from this study is the need for further studies in several directions. If transformational leadership may be effectively used when dealing with professional employees but transactional leadership may be more suitable when project managers deal with technicians or site workers needs to be investigated. A study clarifying this would seem to be appropriate (S.O Ogunlana,K Limsila, 2008,p177).

Leadership constructs

From the review presented earlier, it can be noticed that works on leadership in the construction industry have predominantly used very few leadership constructs that include contingency theory, leadership grid, and transformational leadership. For example, no empirical studies have been carried out on charismatic leadership (House, 1977; Conger and Kanungo, 1987), servant leadership (Greenleaf, 1977), spiritual leadership (Fry, 2003), self-leadership (Manz and Sims, 1987; Manz and Sims, 1989), political leadership (Ammeter *et al.*, 2002), shared leadership (Pearce and Conger, 2003), authentic leadership (Luthans and Avolio, 2003; Toor and Ofori, 2008a), aesthetic leadership (Hansen *et al.*, 2007). Such studies will help the attempts for integrative leadership theory-building (Avolio, 2007) in construction (Shamas-ur-Rehman Toor, George Ofori, 2008, p352-371).

Level of analysis

Most of the studies reviewed have focused on leadership of project managers, site managers, and construction professionals. However, studies have shown that foremen and supervisors also have a vital role in getting the job done on the construction site. Therefore, it is important to analyse leadership at all levels of construction organizations, expanding the “single-level-of-analysis” to “multiple-levels-of-analysis” (see Klein *et al.*, 1994). Therefore, cross-level models, mixed-effects models, and mixed-determinants models (see Klein *et al.*, 1994; Hunt and Ropo, 1995) should be examined to comprehend the phenomena of leadership in depth. Analysis should also be extended to examine the leadership issues in the cross-cultural and cross-organizational teams that are a common feature on construction projects, especially the large ones, and those undertaken by firms overseas, or by joint ventures and consortiums (Shamas-ur-Rehman Toor, George Ofori, 2008, p352-371).

Leadership development

The review in this paper reveals that few leadership studies in the construction literature focus on leadership development and almost no works have considered designing effective interventions for leadership training and development of construction professionals. However, in today's competitive environment, there is a need to accelerate the leadership development process of capable individuals through leadership training and periodic interventions. For this purpose, it is important to explore the antecedents – trigger events and people leading to social and cognitive processes – that stimulate the leadership schema and result in leadership development (Luthans and Avolio, 2003; Gardner *et al*., 2005; Toor, 2006). Toor and Ofori, (2008c) assert that research endeavors in this direction are likely to produce results that are useful for designing leadership development programmes for construction professionals. Future research can also focus on designing and testing interventions to develop special skills required to lead in the construction industry. In addition to understanding how individuals develop as leaders, it is also essential to comprehend how leaders develop their next generation of leaders. In this respect, more research on effective leadership succession can also broaden the understanding of how leadership is sustained in the organizations (Shamas-ur-Rehman Toor, George Ofori, 2008, p352-371).

ANNEXURE

ANNEXURE A- Critical milestones of the research.

The research will be managed and funded by the James Price and supported by Anglogold Ashanti. The estimated budget of the research is R3000.

Tasks	**Durations**	**Target completion dates**	**Deliverables**
Pre-liminary literature study	2 weeks	20 January 2009	Investigate research topics
Register research title	4 days	31 January 2009	Make a decision on research
Research budgeting	4 days	4 February 2009	Estimate research cost
Research proposal	3 weeks	***31 March 2009***	Final proposal
First interview with study leader	1 days	2 April 2009	Discuss proposal
First Study school	4 days	*31March-3April 2009*	Do review on literature study
Detailed literature study	3 weeks	21 April 2009	Complete literature study
Literature review	1 week	28 April 2009	Review literature study
Data Collection strategy design	2 days	30 April 2009	Plan data collection
Hold interviews with 50% of sampled companies.	2 weeks	14 May 2009	Do 50 % of data collection

Hold interviews with 50% personne and industry leaders from sample.	1 week	21 May 2009	Do 50 % of data collection
Interim research report	1 week	***1 June 2009***	Submit interim report
Hold interviews with 50% of sampled companies. Second 50%	2 weeks	14 June 2009	Complete data collection
Hold interviews with 50% personne and Industry leaders from sample. Second 50%	1 week	21 June 2009	Complete data collection
Second interview with study leader	1 days	30 June 2009	Discuss interim research report
Data analysis	4 weeks	30 July 2009	Interpret data
Compile draft research report	2 weeks	15 August 2009	Draw conclusion from data
Issue report to external expert for comments	1 week	23 August 2009	Expert review
Submit draft research report	4 weeks	***22 Septembe 2009***	Issue research report
Third interview with study leader	1 days	31 October 2009	Discuss draft research report
Submit final research report	4 weeks	***1 December 2009***	Complete research
Receive results	4 weeks	February 2010	

ANNEXURE B- Survey Schedule

Num	Company name	Interview date
1.	Carlson Engineering	30 April 2009
2.	Vaal Engineering	6 May 2009
3.	Fiele Engineering	10 May 2009
4.	Tau Engineering	14 May 2009
5.	Almac	21 May 2009
6.	Galison	1 June 2009
7.	Metso	5 June 2009
8.	Crushpro	10 June 2009
9.	AL mining technics	16 June 2009
10.	Rand Sandblasting	21 June 2009
11.	Ultra Reconditioners	28 June 2009
12.	Pylon Engineering	28 June 2009

13.	Bids	28 June 2009
14.	Robtek	8 July 2009
15.	GDI	8 July 2009

ANNEXURE C-Questioner

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GRADUATE SCHOOL OF BUSINESS LEADERSHIP (SBL)

***COURSE*: MASTERS DEGREE IN BUSINESS LEADERSHIP – MBL3, 2009**

***MODULE*: Research Report (MBLREP-P)**

Research Questionnair to assess;

The Conception and Operationalization of leadership in construction companies in South Africa

Introduction

South Africa, a country plagued by the presence of crime, corruption, poverty, HIV / AIDS pandemic and now recently the xenophobic violence is calling for a leadership overhaul, whereby leaders re-invent themselves or make way for new leaders to address the above challenges. The objection of this research is to determine how leadership is conceived and operationalized in the practice within the construction industry in South Africa?

You are hereby requested to assist the researcher to conduct the research in order to assess the impact of leadership in your industry.

Personal information of participant.

Company name:_____

Position held in the Company:_____

Gender:_____

Race:_____

Age:_____

Highest Qualification:_____

How is leadership conceived

1.What is leadership?

Leadership is 'the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organization…" (House et al.,1999,p. 184).

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

2. What is management?

Rost (1991) defined management as an authority relationship that exists between a manager and subordinates to produce and sell goods and services.

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

3. Management and leadership are not mutually exclusive?

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

4. Most immediate supervisors are managers instead of leaders?

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

5. My leader has the ability to understand complex issues.

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

6. My leader makes good decisions.

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

7. My leader solves difficult problems.

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

8. My leader has to understand complex issues which enables him to utilise opportunities.

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

9. My leader has the ability to control his emotions.

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

10. My leader sometimes acts selfishly and does not admit to making a mistake.

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

11. My leader influences employees in order to achieve set objectives.

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

12. My leader influences employees to persist under difficult or complex conditions.

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

13. My leader is able to handle high demands when taking responsibility.

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

14. My leader acts ethically at my work.

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

15. My leader does not deal well with conditions of uncertainty at my work.

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

16. I respect my leader?

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

17. My leader is ethical?

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

18. I am happy working for my current supervisor?

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

19. I am optimistic about the future of my current employment?

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

How is leadership operationalized

20. My supervisor is an effective leader?

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

21.In your opinion what traits are important for a supervisor to be an effective leader in the construction industry?

Dominance		Abilities	
Self-confidence		Intelligence	
High energy		Flexibility.	
Stability		Integrity	
Locus of control		Motivation	
Sensitivity to others			

22. What competencies are important for a supervisor to be an effective leader in the construction industry?

Strategic Capability and Leadership		Innovation Champions	
Programme and Project Management		Problem Solving and Analysis	
Financial Management		People Management and Empowerment	
Manage and control		Client Orientation and Customer Focus	
Change Management		Communication	
Knowledge Management		Honesty and Integrity	
Service Delivery			

23. My leader continuously creates ways to increase efficiency at my workplace.

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

24. Leadership development is very important for the sustained operation of our company?

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

25. Do you have a leadership development programme?

Yes	
No	

26. Is your leadership development program linked to business objectives and strategies?

Yes	
No	

27. I feel valued as an employee?

Strongly agree	Agree	Disagree	Strongly disagree	Not sure

The author thanks you for your contribution towards the completion of this research and would like to assure you of the professional and confidential handling of provided information.

Please provide the following contact information if you require any feedback from the researchers on the research findings and conclusion drawn.

Name of participant:_____

Contact details

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Date : 08 March 2009

ANNEXURE D-Data Analysis summary

Summary	Pearson Correlation	Sub hyp.	Cramer's V	Chi test	Wilcox
1.Leadership conception	0.945	Reject Ho	0.263	Undefined	Reject Ho
2.Management conception	0.994	Reject Ho	0.166	Undefined	Reject Ho
3.Management/leadership exclusivity	0.958	Reject Ho	0.177	Undefined	Reject Ho
4.Leadership perceptions	0.928	Reject Ho	0.184	Undefined	Reject Ho
5.Cognitive abilities	0.928	Reject Ho	0.211	Undefined	Reject Ho
6. Decision making skills	0.987	Reject Ho	0.161	Undefined	Reject Ho
7. Problem solving skills	0.999	Reject Ho	0.121	Undefined	Reject Ho
8. Innovativeness	0.975	Reject Ho	0.241	0.324	Reject Ho
9. Emotional intelligence	0.991	Reject Ho	0.161	0.722	Reject Ho
10. Leadership maturity	0.445	Reject Ho	0.341	0.158	Reject Ho
11. Influence abilities	0.992	Reject Ho	0.090	Undefined	Reject Ho
12. Supportiveness	0.77	Reject Ho	0.302	0.120	Reject Ho
13. Demand tolerance	0.972	Reject Ho	0.177	Undefined	Reject Ho
14. Work ethics	0.996	Reject Ho	0.160	Undefined	Reject Ho
15. Uncertainty control	0.996	Reject Ho	0.098	Undefined	Reject Ho
16. Respect for leader	0.981	Reject Ho	0.233	0.373	Reject Ho
17. Leader Ethics	0.941	Reject Ho	0.202	Undefined	Reject Ho
18. Subordinate contentment	0.978	Reject Ho	0.144	Undefined	Reject Ho
19. Subordinate job satisfaction	0.998	Reject Ho	0.320	0.092	Reject Ho
20. Leadership effectiveness	0.998	Reject Ho	0.154	0.756	Reject Ho
21. Leadership traits	0.927	Reject Ho	0.518	0	N/A
22.Leadership competencies	0.954	Reject Ho	0.639	0	N/A
23. Efficiency	0.995	Reject Ho	0.141	0.815	Reject Ho
24. Importance of Leadership development	0.967	Reject Ho	2	Undefined	Reject Ho
25. Leadership development programs	Undefined	N/A	0.708	0	N/A
26. Leadership development program linkage to strategies	-1	Reject Ho	0.708	0	N/A
27. Employee's job satisfaction	0.994	Reject Ho	0.079	Undefined	Reject Ho

ANNEXURE E-Findings from Ralf Muller , J. Rodney Turner, 2006a

Matching the project manager's leadership style to project type;

The following hypotheses were formulated:

Hypothesis 1: The project manager's competency, which includes his or her leadership style, is positively correlated to project success.

Hypothesis 2: Different combinations of project leadership competency are correlated with success on different types of projects.

Approach

The relationship between different leadership styles and project success, and how this is influenced by project type was analyzed. This was done using quantitative multivariate techniques, such a multivariate regression analysis. The importance of the three competence types, EQ, MQ and IQ and the fifteen competency dimensions (Table 2) for their contribution to success on different types of project. The results where structured by performance levels of projects. Comparing results from high performing projects with those from all projects and low performing projects allowed for identification of those leadership dimensions that are correlated with success. Through that, those project manager competencies most likely to contribute to project success were identified for different types of project.

Table 4 Fifteen leadership competencies after Dulewicz and Higgs [16]

Leadership competency	Rating	Ave group	Ave comp
Emotional competencies		2.4	
1. Motivation	H		2.7
2. Conscientiousness	M		2.5
3. Sensitivity	M		2.4
4. Influence	M		2.4
5. Self-awareness	M		2.4
6. Emotional resilience	M		2.4
7. Intuitiveness	L		2.0
Managerial competencies		2.4	
8. Managing resources	H		2.6
9. Engaging communication	M		2.5
10. Developing	L		2.0
11. Empowering	M		2.4
12. Achieving	H		2.7
Intellectual competencies		2.1	
13. Strategic perspective	L		2.0
14. Vision and imagination	L		1.9
15. Critical analysis and judgement	M		2.5

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Result from related studies by Ralf Muller , J. Rodney Turner, 2006a Matching the project manager's leadership style to project type

Findings

Interviewees were asked to rate the leadership competencies in Table 2 in importance, as high, medium and low. Number were assigned 3 for high, 2 for medium and 1 for low, and calculated the average for each competence and the average for each group, Table 2. The results are not statistically significant, but suggest that emotional and managerial competencies are more important for project managers than intellectual competencies. Looking at the individual competencies, ones scoring lower are vision and imagination, strategic perspective, developing others and intuitiveness. Ones scoring higher are managing resources, achieving (self-motivation) and motivation of others. These are not surprising.

Results

Significant correlations were found with each of the three competence types, EQ, MQ and IQ, and each of the fifteen constituent competency dimensions. We see that on high performing projects from the complete sample, and on high performing projects from each of the three application areas, emotional competencies are significant contributors to project success, but managerial and intellectual ones are not. Looking at the 15 individual competencies, we see that on all high performing projects conscientiousness, sensitivity and communication are correlated to project success, but strategic perspective is negatively correlated to project success. Thus Hypothesis

1 is supported, certain of the project manager's leadership competencies are correlated with project success. We look now at high performing projects in the other three application areas. We see that for engineering projects conscientiousness and sensitivity are positively correlated with success, and vision is negatively correlated. For information systems projects self- wareness, communication and developing are positively correlated, and vision is negatively correlated. Organizational and business projects show a similar profile, but subtly different. Motivation and communication are positively correlated, but vision negatively correlated. We see that almost always, emotional competence, EQ, significantly contributes to project success. Occasionally managerial competence, MQ, contributes significantly, and on a small number of occasions intellectual competence, IQ, negatively correlated. Looking at the 15 constituent competencies, on engineering projects, conscientiousness repeatedly appears as being positively correlated with project success. Other competencies appear occasionally, vision being negatively correlated twice. On information systems projects, self-awareness and communication are repeatedly correlated with project success, and vision repeatedly negatively correlated. On organizational and business projects, communication is repeatedly positively correlated and vision repeatedly negatively correlated. Motivation, conscientiousness, sensitivity and managing resources also appear several times, and strategic perspective is often negatively correlated to project success. We do not have

space here to list all the differences by different types of project. Thus we conclude that hypothesis 2 is supported, different leadership competencies are appropriate on different types of project. We can understand why conscientiousness is important on engineering projects but less so on information and organizational projects, and why communication is important on the latter two types, but less so on engineering projects. On information systems and organizational projects it is important to keep the stakeholders committed to the project, and inform them of the nature of the desired results and work of the project, which will often be abstract in nature. On engineering projects, the project deliverables are more concrete, and clearly delineated in the project's designs. Thoroughness is more important. Many people may be concerned by the conclusion that project managers should lack vision, especially on organizational and business projects. However, our conclusion is that it is the responsibility of other project roles, such as the sponsor, to link the project's outputs and outcomes to organizational strategy, while the project manager must remain focused on delivering the projects results. (R. Muller, J.R. Turner,2007,p 21–32)

ANNEXURE F- Frequency Tables

THE CONCEPTION OF LEADERSHIP. INFORMATION FROM CHAPTER 7 OF DIAMMANTOPOULOS & SCHLEGELMILCH (D&S) pp 73-77 and p 82 WAS USED AS GUIDE FOR ANALYSIS

1.What is leadership? Leadership is 'the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organization…" (House et al.,1999,p. 184).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	32	40.0%	40.0%	40.00%
	2. Agree	43	53.8%	53.8%	93.75%
	3. Disagree	0	0.0%	0.0%	93.75%
	4. Strongly disagree	0	0.0%	0.0%	93.75%
	5. Not sure	5	6.3%	6.3%	100.00%
	Missing	0	0.0%	100.0%	
	Total	80	100.0%		

2. What is management? Rost (1991) defined management as an authority relationship that exists between a manager and subordinates to produce and sell goods and services.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	22	27.5%	27.8%	27.85%
	2. Agree	52	65.0%	65.8%	93.67%
	3. Disagree	4	5.0%	5.1%	98.73%
	4. Strongly disagree	0	0.0%	0.0%	98.73%
	5. Not sure	1	1.3%	1.3%	100.00%
	Missing	1	1.3%	100.0%	
	Total	80	100.0%		

3. Management and leadership are not mutually exclusive?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	14	17.5%	17.5%	17.50%
	2. Agree	45	56.3%	56.3%	73.75%
	3. Disagree	17	21.3%	21.3%	95.00%
	4. Strongly disagree	0	0.0%	0.0%	95.00%
	5. Not sure	4	5.0%	5.0%	100.00%
	Missing	0	0.0%	100.0%	
	Total	80	100.0%		

4. Most immediate supervisors are managers instead of leaders?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	6	7.5%	7.6%	7.59%
	2. Agree	45	56.3%	57.0%	64.56%
	3. Disagree	28	35.0%	35.4%	100.00%
	4. Strongly disagree	0	0.0%	0.0%	100.00%
	5. Not sure	0	0.0%	0.0%	100.00%
	Missing	1	1.3%	100.0%	
	Total	80	100.0%		

5. My leader has the ability to understand complex issues?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	21	26.3%	26.3%	26.25%
	2. Agree	50	62.5%	62.5%	88.75%
	3. Disagree	8	10.0%	10.0%	98.75%
	4. Strongly disagree	0	0.0%	0.0%	98.75%
	5. Not sure	1	1.3%	1.3%	100.00%
	Missing	0	0.0%	100.0%	
	Total	80	100.0%		

6. My leader makes good decisions?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	20	25.0%	25.3%	25.32%
	2. Agree	55	68.8%	69.6%	94.94%
	3. Disagree	3	3.8%	3.8%	98.73%
	4. Strongly disagree	1	1.3%	1.3%	100.00%
	5. Not sure	0	0.0%	0.0%	100.00%
	Missing	1	1.3%	100.0%	
	Total	80	100.0%		

7. My leader solves difficult problems?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	13	16.3%	16.5%	16.46%
	2. Agree	52	65.0%	65.8%	82.28%
	3. Disagree	13	16.3%	16.5%	98.73%
	4. Strongly disagree	1	1.3%	1.3%	100.00%
	5. Not sure	0	0.0%	0.0%	100.00%
	Missing	1	1.3%	100.0%	
	Total	80	100.0%		

8. My leader has to understand complex issues which enables him to utilize opportunities?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	15	18.8%	18.8%	18.75%
	2. Agree	54	67.5%	67.5%	86.25%
	3. Disagree	9	11.3%	11.3%	97.50%
	4. Strongly disagree	1	1.3%	1.3%	98.75%
	5. Not sure	1	1.3%	1.3%	100.00%
	Missing	0	0.0%	100.0%	
	Total	80	100.0%		

9. My leader has the ability to control his emotions?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	10	12.5%	12.5%	12.50%
	2. Agree	49	61.3%	61.3%	73.75%
	3. Disagree	16	20.0%	20.0%	93.75%
	4. Strongly disagree	1	1.3%	1.3%	95.00%
	5. Not sure	4	5.0%	5.0%	100.00%
	Missing	0	0.0%	100.0%	
	Total	80	100.0%		

10. My leader sometimes acts selfishly and does not admit to making a mistake?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	3	3.8%	3.8%	3.75%
	2. Agree	15	18.8%	18.8%	22.50%
	3. Disagree	45	56.3%	56.3%	78.75%
	4. Strongly disagree	15	18.8%	18.8%	97.50%
	5. Not sure	2	2.5%	2.5%	100.00%
	Missing	0	0.0%	100.0%	
	Total	80	100.0%		

11. My leader influence employees in order to achieve set objectives?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	13	16.3%	16.3%	16.25%
	2. Agree	52	65.0%	65.0%	81.25%
	3. Disagree	13	16.3%	16.3%	97.50%
	4. Strongly disagree	0	0.0%	0.0%	97.50%
	5. Not sure	2	2.5%	2.5%	100.00%
	Missing	0	0.0%	100.0%	
	Total	80	100.0%		

12. My leader influence employees to persist under difficult or complex conditions?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	11	13.8%	13.8%	13.75%
	2. Agree	43	53.8%	53.8%	67.50%
	3. Disagree	21	26.3%	26.3%	93.75%
	4. Strongly disagree	2	2.5%	2.5%	96.25%
	5. Not sure	3	3.8%	3.8%	100.00%
	Missing	0	0.0%	100.0%	
	Total	80	100.0%		

13. My leader is able to handle high demands when taking responsibility?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	24	30.0%	30.4%	30.38%
	2. Agree	48	60.0%	60.8%	91.14%
	3. Disagree	6	7.5%	7.6%	98.73%
	4. Strongly disagree	0	0.0%	0.0%	98.73%
	5. Not sure	1	1.3%	1.3%	100.00%
	Missing	1	1.3%	100.0%	
	Total	80	100.0%		

14. My leader acts ethically at my work?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	13	16.3%	16.5%	16.46%
	2. Agree	64	80.0%	81.0%	97.47%
	3. Disagree	0	0.0%	0.0%	97.47%
	4. Strongly disagree	0	0.0%	0.0%	97.47%
	5. Not sure	2	2.5%	2.5%	100.00%
	Missing	1	1.3%	100.0%	
	Total	80	100.0%		

15. My leader does not deal well with conditions of uncertainty at my work?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	0	0.0%	0.0%	0.00%
	2. Agree	14	17.5%	17.5%	17.50%
	3. Disagree	56	70.0%	70.0%	87.50%
	4. Strongly disagree	5	6.3%	6.3%	93.75%
	5. Not sure	5	6.3%	6.3%	100.00%
	Missing	0	0.0%	100.0%	
	Total	80	100.0%		

16. I respect my leader?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	38	47.5%	48.7%	48.72%
	2. Agree	36	45.0%	46.2%	94.87%
	3. Disagree	2	2.5%	2.6%	97.44%
	4. Strongly disagree	1	1.3%	1.3%	98.72%
	5. Not sure	1	1.3%	1.3%	100.00%
	Missing	2	2.5%	100.0%	
	Total	80	100.0%		

17. My leader is ethical?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	25	31.3%	31.6%	31.65%
	2. Agree	46	57.5%	58.2%	89.87%
	3. Disagree	4	5.0%	5.1%	94.94%
	4. Strongly disagree	0	0.0%	0.0%	94.94%
	5. Not sure	4	5.0%	5.1%	100.00%
	Missing	1	1.3%	100.0%	

	Total	80	100.0%		

18. I am happy working for my current supervisor?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	31	38.8%	38.8%	38.75%
	2. Agree	44	55.0%	55.0%	93.75%
	3. Disagree	4	5.0%	5.0%	98.75%
	4. Strongly disagree	0	0.0%	0.0%	98.75%
	5. Not sure	1	1.3%	1.3%	100.00%
	Missing	0	0.0%	100.0%	
	Total	80	100.0%		

19. I am optimistic about the future of my current employment?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	26	32.5%	33.3%	33.33%
	2. Agree	45	56.3%	57.7%	91.03%
	3. Disagree	2	2.5%	2.6%	93.59%
	4. Strongly disagree	1	1.3%	1.3%	94.87%
	5. Not sure	4	5.0%	5.1%	100.00%
	Missing	2	2.5%	100.0%	
	Total	80	100.0%		

THE OPERATIONALIZATION OF LEADERSHIP. INFORMATION FROM CHAPTER 7 OF DIAMMANTOPOULOS & SCHLEGELMILCH (D&S) pp 73-77 and p 82 WAS USED AS GUIDE FOR ANALYSIS

20. My supervisor is an effective leader?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	28	35.0%	35.0%	35.00%
	2. Agree	48	60.0%	60.0%	95.00%
	3. Disagree	1	1.3%	1.3%	96.25%
	4. Strongly disagree	2	2.5%	2.5%	98.75%
	5. Not sure	1	1.3%	1.3%	100.00%
	Missing	0	0.0%	100.0%	
	Total	80	100.0%		

21. In your opinion what traits are important for a supervisor to be an effective leader in the construction industry?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Dominance	30	5.4%	5.4%	5.38%
	2. Self-confidence	75	13.4%	13.4%	18.82%
	3. High energy	41	7.3%	7.3%	26.16%
	4. Stability	59	10.6%	10.6%	36.74%
	5. Locus of control	29	5.2%	5.2%	41.94%
	6. Sensitivity to others	46	8.2%	8.2%	50.18%
	7. Abilities	58	10.4%	10.4%	60.57%
	8. Intelligence	59	10.6%	10.6%	71.15%
	9. Flexibility.	35	6.3%	6.3%	77.42%
	10. Integrity	51	9.1%	9.1%	86.56%
	11. Motivation	75	13.4%	13.4%	100.00%
	Missing	0	0.0%	100.0%	

	Total	558	100.0%		

22. What competencies are important for a supervisor to be an effective leader in the construction industry?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strategic Capability and Leadership	64	9.6%	9.6%	9.62%
	2. Programme and Project Management	51	7.7%	7.7%	17.29%
	3. Financial Management	34	5.1%	5.1%	22.41%
	4. Manage and control	70	10.5%	10.5%	32.93%
	5. Change Management	22	3.3%	3.3%	36.24%
	6. Knowledge Management	55	8.3%	8.3%	44.51%
	7. Service Delivery	48	7.2%	7.2%	51.73%
	8. Innovation Champions	21	3.2%	3.2%	54.89%
	9. Problem Solving and Analysis	68	10.2%	10.2%	65.11%
	10. People Management and Empowerment	53	8.0%	8.0%	73.08%
	11. Client Orientation and Customer Focus	41	6.2%	6.2%	79.25%
	12. Communication	69	10.4%	10.4%	89.62%
	13. Honesty and Integrity	69	10.4%	10.4%	100.00%
	Missing	0	0.0%	100.0%	
	Total	665	100.0%		

23. My leader continuously creates ways to increase efficiency at my workplace?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	17	21.3%	21.5%	21.52%
	2. Agree	56	70.0%	70.9%	92.41%
	3. Disagree	2	2.5%	2.5%	94.94%
	4. Strongly disagree	1	1.3%	1.3%	96.20%
	5. Not sure	3	3.8%	3.8%	100.00%
	Missing	1	1.3%	100.0%	
	Total	80	100.0%		

24. Leadership development is very important for the sustained operation of our company?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	28	35.0%	35.0%	35.00%
	2. Agree	47	58.8%	58.8%	93.75%
	3. Disagree	0	0.0%	0.0%	93.75%
	4. Strongly disagree	1	1.3%	1.3%	95.00%
	5. Not sure	4	5.0%	5.0%	100.00%
	Missing	0	0.0%	100.0%	
	Total	80	100.0%		

25. Do you have a leadership development programme?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. No	41	51.3%	51.3%	51.25%
	2. Yes	39	48.8%	48.8%	100.00%
	Missing	0	0.0%	100.0%	

	Total	80	100.0%		

26. Is your leadership development program linked to business objectives and strategies?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. No	40	50.0%	50.0%	50.00%
	2. Yes	40	50.0%	50.0%	100.00%
	Missing	0	0.0%	100.0%	
	Total	80	100.0%		

27. I feel valued as an employee?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1. Strongly Agree	25	31.3%	31.3%	31.25%
	2. Agree	52	65.0%	65.0%	96.25%
	3. Disagree	0	0.0%	0.0%	96.25%
	4. Strongly disagree	0	0.0%	0.0%	96.25%
	5. Not sure	3	3.8%	3.8%	100.00%
	Missing	0	0.0%	100.0%	
	Total	80	100.0%		

ANNEXURE G- Descriptive Statistics

DESCRIPTIVE STATISTICS OF SERVQUAL DIMENSIONS. PLEASE REFER TO CHAPTER 8 OF D&S

Descriptive Statistics

	N = sample size	Minimum	Maximum	Mean	Std. Deviation
1.Leadership conception	80	0.00	43.00	16.00	20.11
2.Management conception	80	0.00	52.00	15.80	22.12
3.Management/leadership exclusivity	80	0.00	45.00	16.00	17.65
4.Leadership perceptions	80	0.00	45.00	15.80	19.98
5.Cognitive abilities	80	0.00	50.00	16.00	20.77
6. Decision making skills	80	0.00	55.00	15.80	23.38
7. Problem solving skills	80	0.00	52.00	15.80	21.18
8. Innovativeness	80	1.00	54.00	16.00	22.05
9. Emotional intelligence	80	10.00	80.00	18.00	49.50
10. Leadership maturity	80	2.00	45.00	16.00	17.38
11. Influence abilities	80	0.00	52.00	16.00	21.01
12. Supportiveness	80	2.00	43.00	16.00	16.91
13. Demand tolerance	80	0.00	48.00	15.80	20.43
14. Work ethics	80	0.00	64.00	15.80	27.48
15. Uncertainty control	80	0.00	56.00	16.00	22.92
16. Respect for leader	80	1.00	38.00	15.60	19.55
17. Leader Ethics	80	0.00	46.00	15.80	19.52
18. Subordinate contentment	80	0.00	44.00	16.00	20.21
19. Subordinate job satisfaction	80	1.00	45.00	15.60	19.40
20. Leadership effectiveness	80	1.00	48.00	16.00	21.30
21. Leadership traits	558	29.00	75.00	50.73	16.23
21.1Leadership traits-Dominance	30				
21.2Leadership traits-Self-confidence	75				
21.3Leadership traits-High energy	41				
21.4Leadership traits-Stability	59				

21.5Leadership traits-Locus of control	29				
21.6Leadership traits-Sensitivity to others	46				
21.7Leadership traits-Abilities	58				
21.8Leadership traits-Intelligence	59				
21.9Leadership traits-Flexibility.	35				
21.10Leadership traits-Integrity	51				
21.11Leadership traits-Motivation	75				
22.Leadership competencies	665	21.00	70.00	51.15	17.38
22.1Leadership competencies-Strategic Capability and Leadership	64				
22.2Leadership competencies-Programme and Project Management	51				
22.3Leadership competencies-Financial Management	34				
22.4Leadership competencies-Manage and control	70				
22.5Leadership competencies-Change Management	22				
22.6Leadership competencies-Knowledge Management	55				
22.7Leadership competencies-Service Delivery	48				
22.8Leadership competencies-Innovation Champions	21				
22.9Leadership competencies-Problem Solving and Analysis	68				
22.10Leadership competencies-People Management and Empowerment	53				
22.11Leadership competencies-Client Orientation and Customer Focus	41				
22.12Leadership competencies-Communication	69				
22.13Leadership competencies-Honesty and Integrity	69				
23. Efficiency	80	1.00	56.00	15.80	23.40
24. Importance of Leadership development	80	0.00	47.00	16.00	20.80
25. Leadership development programs	80	39.00	41.00	40.00	33.83
26. Leadership development program linkage to strategies	80	40.00	40.00	40.00	0.00
27. Employee's job satisfaction	80	0.00	52.00	16.00	22.68

ANNEXURE H-Cross Tabulation

INFORMATION FROM CHAPTER 10 OF OF DIAMMANTOPOULOS & SCHLEGELMILCH (D&S) WAS USED AS GUIDE FOR ANALYSIS

joblevel: What level are you within the company?1. What is leadership?

Crosstab								

	1.What is leadership? Leadership is 'the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organization…" (House et al.,1999,p. 184).					
	1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total

joblevel: What level are you within the company?	1 Employees	Count	14	23	0	0	5	42
		% within joblevel What level are you within the company?	33.3%	54.8%	0.0%	0.0%	11.9%	52.5%
	2 Management	Count	18	20	0	0	0	38
		% within joblevel What level are you within the company?	47.4%	52.6%	0.0%	0.0%	0.0%	47.5%
Total		Count	32	43	0	0	5	80
		% within joblevel What level are you within the company?	40.0%	53.8%	0.0%	0.0%	6.3%	100.0 %
	1 Employees	Actual	14	23	0	0	5	42
	2 Management		18	20	0	0	0	38
	1 Employees	Expected	16.8	22.575	0	0	2.625	22.05
	2 Management		15.2	20.425	0	0	2.375	65.488

Tests

Pivot table

Wilcoxon Rank Sum	**Z values**	**Decision**	**Pvalue**
Lower Test	-1.64485363	Reject Ho	0.0000
Upper Test	1.644853627	Do Not Reject Ho	1.0000
Two-Sided Test	1.959963985	Reject Ho	0.0000
CHI-test			#DIV/0!
PEARSON			0.945

Count of Job level M-mgt, E-emloyee	Leadership conception2			
Job level M-mgt, E-emloyee	1	2	5	Grand Total
E	14	23	5	42
M	18	20		38
Grand Total	32	43	5	80

joblevel: What level are you within the company?2. What is management?

Crosstab

			2. What is management? Rost (1991) defined management as an authority relationship that exists between a manager and subordinates to produce and sell goods and services.					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you within the company?	1 Employees	Count	12	28	1	0	1	42

		% within joblevel What level are you within the company?	28.6%	66.7%	2.4%	0.0%	2.4%	100.0 %
	2 Management	Count	10	24	3	0	0	37
		% within joblevel What level are you within the company?	27.0%	64.9%	8.1%	0.0%	0.0%	100.0 %
Total		Count	22	52	4	0	1	79
		% within joblevel What level are you within the company?	27.8%	65.8%	5.1%	0.0%	1.3%	100.0 %
	1 Employees	Actual	12	28	1	0	1	42
	2 Management		10	24	3	0	0	37
	1 Employees	Expected	11.69620253	27.64557	2.126582 3	0	0.531 6	22.32 9
	2 Management		10.3037974 7	24.35443	1.873417 7	0	0.468 4	61.31

Tests				**Pivot table**				
Wilcoxon Rank Sum	**Z values**	**Decision**	**Pvalue**	Count of Management conception	Management conception			
Lower Test	-1.64485363	Reject Ho	2.02804E-45	Job level M-mgt, E-emloyee	1	2	3	5
Upper Test	1.644853627	Do Not Reject Ho	1	E	12	28	1	1
Two-Sided Test	1.959963985	Reject Ho	0	M	10	24	3	
				Grand Total	22	52	4	1
CHI test			#DIV/0!					
Pearson correlation			0.994					

joblevel: What level are you within the company?3. Management and leadership are not mutually exclusive?

Crosstab								
			3. Management and leadership are not mutually exclusive?					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you within the company?	1 Employees	Count	9	23	7	0	3	42
		% within joblevel What level are you within the company?	21.4%	54.8%	16.7%	0.0%	7.1%	100.0 %

	2 Management	Count	5	22	10	0	1	38
		% within joblevel What level are you within the company?	13.2%	57.9%	26.3%	0.0%	2.6%	100.0 %
Total		Count	14	45	17	0	4	80
		% within joblevel What level are you within the company?	17.5%	56.3%	21.3%	0.0%	5.0%	100.0 %
	1 Employees	Actual	9	23	7	0	3	42
	2 Management		5	22	10	0	1	38
	1 Employees	Expected	7.35	23.625	8.925	0	2.1	22.05
	2 Management		6.65	21.375	8.075	0	1.9	65.488

Tests				**Pivot table**				
Wilcoxon Rank Sum	**Z values**	**Decision**	**Pvalue**	Count of Job level M-mgt, E-emloyee	Management/leadership exclusivity			
Lower Test	-1.64485363	Reject Ho	1.5547E-44	Job level M-mgt, E-emloyee	1	2	3	5
Upper Test	1.644853627	Do Not Reject Ho	1	E	9	23	7	3
Two-Sided Test	1.959963985	Reject Ho	0	M	5	22	10	1
				Grand Total	14	45	17	4
CHI test			#DIV/0!					
Pearson correlation			0.958					

joblevel: What level are you within the company?4. Most immediate supervisors are managers instead of leaders?

Crosstab

			4. Most immediate supervisors are managers instead of leaders?					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you within the company?	1 Employees	Count	2	22	18	0	0	42
		% within joblevel What level are you within the company?	4.8%	52.4%	42.9%	0.0%	0.0%	100.0 %
	2 Management	Count	4	23	10	0	0	37
		% within joblevel What level are you within the company?	10.8%	62.2%	27.0%	0.0%	0.0%	100.0 %

Total		Count	6	45	28	0	0	79
		% within joblevel What level are you within the company?	7.6%	57.0%	35.4%	0.0%	0.0%	100.0 %
	1 Employees	Actual	2	22	18	0	0	42
	2 Management		4	23	10	0	0	37
	1 Employees	Expected	3.189873418	23.924051	14.886076	0	0	22.329
	2 Management		2.810126582	21.075949	13.113924	0	0	61.31

Tests				**Pivot table**				
Wilcoxon Rank Sum	**Z values**	**Decision**	**Pvalue**	Count of Leadership perceptions	Leadership perceptions			
Lower Test	-1.64485363	Reject Ho	5.22463E-44	Job level M-mgt, E-emloyee	1	2	3	?
Upper Test	1.644853627	Do Not Reject Ho	1	E	2	22	18	
Two-Sided Test	1.959963985	Reject Ho	0	M	4	23	10	1
				Grand Total	6	45	28	1
CHI test			#DIV/0!					
Pearson correlation			0.928					

joblevel: What level are you within the company?5. My leader has the ability to understand complex issues.

Crosstab

			5. My leader has the ability to understand complex issues.					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you within the company?	1 Employees	Count	12	27	2	0	1	42
		% within joblevel What level are you within the company?	28.6%	64.3%	4.8%	0.0%	2.4%	100.0 %
	2 Management	Count	9	23	6	0	0	38
		% within joblevel What level are you within the company?	23.7%	60.5%	15.8%	0.0%	0.0%	100.0 %
Total		Count	21	50	8	0	1	80
		% within joblevel What level are you within the	26.3%	62.5%	10.0%	0.0%	1.3%	100.0 %

		company?						
	1 Employees	Actual	12	27	2	0	1	42
	2 Management		9	23	6	0	0	38
	1 Employees	Expected	11.025	26.25	4.2	0	0.525	22.05
	2 Management		9.975	23.75	3.8	0	0.475	65.488

Tests

Wilcoxon Rank Sum	**Z values**	**Decision**	**Pvalue**
Lower Test	-1.64485363	Reject Ho	2.32449E-45
Upper Test	1.644853627	Do Not Reject Ho	1
Two-Sided Test	1.959963985	Reject Ho	0
CHI test			#DIV/0!
Pearson correlation			0.974

Pivot table

Count of Job level M-mgt, E-emloyee	Cognitive abilities			
Job level M-mgt, E-emloyee	1	2	3	5
E	12	27	2	1
M	9	23	6	
Grand Total	21	50	8	1

joblevel: What level are you within the company?6. My leader makes good decisions.

Crosstab

			6. My leader makes good decisions.					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you within the company?	1 Employees	Count	12	28	1	0	0	41
		% within joblevel What level are you within the company?	29.3%	68.3%	2.4%	0.0%	0.0%	100.0%
	2 Management	Count	8	27	2	1	0	38
		% within joblevel What level are you within the company?	21.1%	71.1%	5.3%	2.6%	0.0%	100.0%
Total		Count	20	55	3	1	0	79
		% within joblevel What level are you within the company?	25.3%	69.6%	3.8%	1.3%	0.0%	100.0%
	1 Employees	Actual	12	28	1	0	0	41
	2 Management		8	27	2	1	0	38

	1 Employees	Expected	10.37974684	28.544304	1.556962	0.518987342	0	21.278
	2 Management		9.620253165	26.455696	1.443038	0.481012658	0	67.862
Tests				**Pivot table**				

Wilcoxon Rank Sum	**Z values**	**Decision**	**Pvalue**
Lower Test	-1.64485363	Reject Ho	1.0238E-45
Upper Test	1.644853627	Do Not Reject Ho	1
Two-Sided Test	1.959963985	Reject Ho	0
CHI test			#DIV/0!
Pearson correlation			0.987

Count of Job level M-mgt, E-emloyee	Decision making skills			
Job level M-mgt, E-emloyee	1	2	3	4
E	12	28	1	
M	8	27	2	1
Grand Total	20	55	3	1

joblevel: What level are you within the company?7. My leader solves difficult problems.

Crosstab

			7. My leader solves difficult problems.					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you within the company?	1 Employees	Count	7	28	7	0	0	42
		% within joblevel What level are you within the company?	16.7%	66.7%	16.7%	0.0%	0.0%	100.0%
	2 Management	Count	6	24	6	1	0	37
		% within joblevel What level are you within the company?	16.2%	64.9%	16.2%	2.7%	0.0%	100.0%
Total		Count	13	52	13	1	0	79
		% within joblevel What level are you within the company?	16.5%	65.8%	16.5%	1.3%	0.0%	100.0%

	1 Employees	Actual	7	28	7	0	0	42
	2 Management		6	24	6	1	0	37
	1 Employees	Expected	6.911392405	27.64557	6.911392	0.53164557	0	22.329
	2 Management		6.088607595	24.35443	6.088607	0.46835443	0	61.31
Tests				**Pivot table**				

Wilcoxon Rank Sum	Z values	Decision	Pvalue	Count of Job level M-mgt, E-emloyee	Problem solving skills			
Lower Test	-1.64485363	Reject Ho	6.02517E-45	Job level M-mgt, E-emloyee	1	2	3	4
Upper Test	1.644853627	Do Not Reject Ho	1	E	7	28	7	
Two-Sided Test	1.959963985	Reject Ho	0	M	6	24	6	1
				Grand Total	13	52	13	1
CHI test			#DIV/0!					
Pearson correlation			0.999					

joblevel: What level are you within the company?8. My leader has to understand complex issues which enables him to utilise opportunities.

Crosstab

			8. My leader has to understand complex issues which enables him to utilise opportunities.					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you within the company?	1 Employees	Count	7	27	7	0	1	42
		% within joblevel What level are you within the company?	16.7%	64.3%	16.7%	0.0%	2.4%	100.0 %
	2 Management	Count	8	27	2	1	0	38
		% within joblevel What level are you within the company?	21.1%	71.1%	5.3%	2.6%	0.0%	100.0 %
Total		Count	15	54	9	1	1	80
		% within joblevel What level are you within the company?	18.8%	67.5%	11.3%	1.3%	1.3%	100.0 %
	1 Employees	Actual	7	27	7	0	1	42
	2 Management		8	27	2	1	0	38
	1 Employees	Expected	7.875	28.35	4.725	0.525	0.525	22.05
	2 Management		7.125	25.65	4.275	0.475	0.475	65.488

Tests

Pivot table

Wilcoxon Rank Sum	Z values	Decision	Pvalue	Count of Job level M-mgt, E-emloyee	Innovativeness			
Lower Test	-1.64485363	Reject Ho	9.04988E-45	Job level M-mgt, E-	1	2	3	4

				emloyee				
Upper Test	1.644853627	Do Not Reject Ho	1	E	7	27	7	
Two-Sided Test	1.959963985	Reject Ho	0	M	8	27	2	1
				Grand Total	15	54	9	1
CHI test			0.324					
Pearson correlation			0.975					

joblevel: What level are you within the company?9. My leader has the ability to control his emotions.

Crosstab

			9. My leader has the ability to control his emotions.					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you within the company?	1 Employees	Count	5	25	9	0	3	42
		% within joblevel What level are you within the company?	11.9%	59.5%	21.4%	0.0%	7.1%	100.0 %
	2 Management	Count	5	24	7	1	1	38
		% within joblevel What level are you within the company?	13.2%	63.2%	18.4%	2.6%	2.6%	100.0 %
Total		Count	10	49	16	1	4	80
		% within joblevel What level are you within the company?	12.5%	61.3%	20.0%	1.3%	5.0%	100.0 %
	1 Employees	Actual	5	25	9	0	3	42
	2 Management		5	24	7	1	1	38
	1 Employees	Expected	5.25	25.725	8.4	0.525	2.1	22.05
	2 Management		4.75	23.275	7.6	0.475	1.9	65.488

Tests

Pivot table

Wilcoxon Rank Sum	**Z values**	**Decision**	**Pvalue**	Count of Job level M-mgt, E-emloyee	Emotional intelligence			
Lower Test	-1.64485363	Reject Ho	3.49097E-44	Job level M-mgt, E-emloyee	1	2	3	4
Upper Test	1.644853627	Do Not Reject Ho	1	E	5	25	9	
Two-Sided Test	1.959963985	Reject Ho	0	M	5	24	7	1

				Grand Total	10	49	16	1
CHI test			0.722					
Pearson correlation			0.991					

joblevel: What level are you within the company?10. My leader sometimes acts selfishly and do not admit to making a mistake.

Crosstab

			10. My leader sometimes acts selfishly and do not admit to making a mistake.					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you within the company?	1 Employees	Count	12	11	6	9	0	38
		% within joblevel What level are you within the company?	31.6%	28.9%	15.8%	23.7%	0.0%	100.0 %
	2 Management	Count	2	6	3	6	2	19
		% within joblevel What level are you within the company?	10.5%	31.6%	15.8%	31.6%	10.5%	100.0 %
Total		Count	14	17	9	15	2	57
		% within joblevel What level are you within the company?	24.6%	29.8%	15.8%	26.3%	3.5%	100.0 %
	1 Employees	Actual	12	11	6	9	0	38
	2 Management		2	6	3	6	2	19
	1 Employees	Expected	9.333333333	11.333333	6	10	1.3333	25.333
	2 Management		4.666666667	5.666667	3	5	0.6667	14.25

Tests				**Pivot table**				
Wilcoxon Rank Sum	**Z values**	**Decision**	**Pvalue**	Count of Job level M-mgt, E-emloyee	Leadership maturity			
Lower Test	-1.64485363	Reject Ho	1.27624E-42	Job level M-mgt, E-emloyee	1	2	3	4
Upper Test	1.644853627	Do Not Reject Ho	1	E	2	8	22	10
Two-Sided Test	1.959963985	Reject Ho	0	M	1	7	23	5
				Grand Total	3	15	45	15
CHI test			0.158					
Pearson correlation			0.445					

joblevel: What level are you within the company?11. My leader influence employees in order to achieve set objectives.

Crosstab

			11. My leader influence employees in order to achieve set objectives.					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you within the company?	1 Employees	Count	6	29	6	0	1	42
		% within joblevel What level are you within the company?	14.3%	69.0%	14.3%	0.0%	2.4%	100.0 %
	2 Management	Count	7	23	7	0	1	38
		% within joblevel What level are you within the company?	18.4%	60.5%	18.4%	0.0%	2.6%	100.0 %
Total		Count	13	52	13	0	2	80
		% within joblevel What level are you within the company?	16.3%	65.0%	16.3%	0.0%	2.5%	100.0 %
	1 Employees	Actual	6	29	6	0	1	42
	2 Management		7	23	7	0	1	38
	1 Employees	Expected	6.825	27.3	6.825	0	1.05	22.05
	2 Management		6.175	24.7	6.175	0	0.95	65.488

Tests

Wilcoxon Rank Sum	Z values	Decision	Pvalue
Lower Test	-1.64485363	Reject Ho	9.04988E-45
Upper Test	1.644853627	Do Not Reject Ho	1
Two-Sided Test	1.959963985	Reject Ho	0
CHI test			#DIV/0!
Pearson correlation			0.992

Pivot table

Count of Job level M-mgt, E-emloyee	Influence abilities			
Job level M-mgt, E-emloyee	1	2	3	5
E	6	29	6	1
M	7	23	7	1
Grand Total	13	52	13	2

joblevel: What level are you within the company?12. My leader influence employees to persist under difficult or complex conditions.

Crosstab

			12. My leader influence employees to persist under difficult or complex conditions.					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you within the company?	1 Employees	Count	4	19	16	1	2	42
		% within joblevel What level are you within the company?	9.5%	45.2%	38.1%	2.4%	4.8%	100.0 %
	2 Management	Count	7	24	5	1	1	38
		% within joblevel What level are you within the company?	18.4%	63.2%	13.2%	2.6%	2.6%	100.0 %
Total		Count	11	43	21	2	3	80
		% within joblevel What level are you within the company?	13.8%	53.8%	26.3%	2.5%	3.8%	100.0 %
	1 Employees	Actual	4	19	16	1	2	42
	2 Management		7	24	5	1	1	38
	1 Employees	Expected	5.775	22.575	11.025	1.05	1.575	22.05
	2 Management		5.225	20.425	9.975	0.95	1.425	65.488

Tests				**Pivot table**				
Wilcoxon Rank Sum	**Z values**	**Decision**	**Pvalue**	Count of Job level M-mgt, E-emloyee	Supportiveness			
Lower Test	-1.64485363	Reject Ho	8.93249E-44	Job level M-mgt, E-emloyee	1	2	3	4
Upper Test	1.644853627	Do Not Reject Ho	1	E	4	19	16	1
Two-Sided Test	1.959963985	Reject Ho	0	M	7	24	5	1
				Grand Total	11	43	21	2
CHI test			0.120					
Pearson correlation			0.770					

joblevel: What level are you within the company?13. My leader is able to handle high demands when taking responsibility.

Crosstab

			13. My leader is able to handle high demands when taking responsibility.					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you	1 Employees	Count	11	27	2	0	1	41

within the company?								
		% within joblevel What level are you within the company?	26.8%	65.9%	4.9%	0.0%	2.4%	100.0 %
	2 Management	Count	13	21	4	0	0	38
		% within joblevel What level are you within the company?	34.2%	55.3%	10.5%	0.0%	0.0%	100.0 %
Total		Count	24	48	6	0	1	79
		% within joblevel What level are you within the company?	30.4%	60.8%	7.6%	0.0%	1.3%	100.0 %
	1 Employees	Actual	11	27	2	0	1	41
	2 Management		13	21	4	0	0	38
	1 Employees	Expected	12.4556962	24.911392	3.1139241	0	0.519	21.278
	2 Management		11.5443038	23.088608	2.8860759	0	0.481	67.862

Tests

Pivot table

Wilcoxon Rank Sum	**Z values**	**Decision**	**Pvalue**
Lower Test	-1.64485363	Reject Ho	2.02804E-45
Upper Test	1.644853627	Do Not Reject Ho	1
Two-Sided Test	1.959963985	Reject Ho	0
CHI test			#DIV/0!
Pearson correlation			0.972

Count of Job level M-mgt, E-emloyee	Demand tolerance			
Job level M-mgt, E-emloyee	1	2	3	5
E	11	27	2	1
M	13	21	4	
Grand Total	24	48	6	1

joblevel: What level are you within the company?14. My leader acts ethically in my work.

Crosstab

			14. My leader acts ethically in my work.					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you within the company?	1 Employees	Count	6	33	0	0	2	41
		% within joblevel What level are you within the company?	14.6%	80.5%	0.0%	0.0%	4.9%	100.0 %

	2 Management	Count	7	31	0	0	0	38
		% within joblevel What level are you within the company?	18.4%	81.6%	0.0%	0.0%	0.0%	100.0 %
Total		Count	13	64	0	0	2	79
		% within joblevel What level are you within the company?	16.5%	81.0%	0.0%	0.0%	2.5%	100.0 %
	1 Employees	Actual	6	33	0	0	2	41
	2 Management		7	31	0	0	0	38
	1 Employees	Expected	6.746835443	33.21519	0	0	1.038	21.278
	2 Management		6.253164557	30.78481	0	0	0.962	67.862

Tests				**Pivot table**				
Wilcoxon Rank Sum	**Z values**	**Decision**	**Pvalue**	Count of Job level M-mgt, E-emloyee	Work ethics			
Lower Test	-1.64485363	Reject Ho	4.59184E-45	Job level M-mgt, E-emloyee	1	2	5	?
Upper Test	1.644853627	Do Not Reject Ho	1	E	6	33	2	1
Two-Sided Test	1.959963985	Reject Ho	0	M	7	31		
				Grand Total	13	64	2	1
CHI test			#DIV/0!					
Pearson correlation			0.996					

joblevel: What level are you within the company?15. My leader does not deal well with conditions of uncertainty at my work.

Crosstab

			15. My leader does not deal well with conditions of uncertainty in my work.					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you within the company?	1 Employees	Count	0	8	30	2	2	42
		% within joblevel What level are you within the company?	0.0%	19.0%	71.4%	4.8%	4.8%	100.0 %
	2 Management	Count	0	6	26	3	3	38
		% within joblevel What level are you within the	0.0%	15.8%	68.4%	7.9%	7.9%	100.0 %

		company?						
Total		Count	0	14	56	5	5	80
		% within joblevel What level are you within the company?	0.0%	17.5%	70.0%	6.3%	6.3%	100.0 %
	1 Employees	Actual	0	8	30	2	2	42
	2 Management		0	6	26	3	3	38
	1 Employees	Expected	0	7.35	29.4	2.625	2.625	22.05
	2 Management		0	6.65	26.6	2.375	2.375	65.488

Tests

Pivot table

Wilcoxon Rank Sum	**Z values**	**Decision**	**Pvalue**
Lower Test	-1.64485363	Reject Ho	1.27624E-42
Upper Test	1.644853627	Do Not Reject Ho	1
Two-Sided Test	1.959963985	Reject Ho	0
CHI test			#DIV/0!
Pearson correlation			0.996

Count of Job level M-mgt, E-emloyee	Uncertainty control			
Job level M-mgt, E-emloyee	2	3	4	5
E	8	30	2	2
M	6	26	3	3
Grand Total	14	56	5	5

joblevel: What level are you within the company?16. I respect my leader?

Crosstab

			16. I respect my leader?					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you within the company?	1 Employees	Count	19	20	2	0	0	41
		% within joblevel What level are you within the company?	46.3%	48.8%	4.9%	0.0%	0.0%	100.0 %
	2 Management	Count	19	16		1	1	37
		% within joblevel What level are you within the company?	51.4%	43.2%	0.0%	2.7%	2.7%	100.0 %
Total		Count	38	36	2	1	1	78

		% within joblevel What level are you within the company?	48.7%	46.2%	2.6%	1.3%	1.3%	100.0 %
	1 Employees	Actual	19	20	2	0	0	41
	2 Management		19	16	0	1	1	37
	1 Employees	Expected	19.97435897	18.923077	1.0512821	0.525641026	0.5256	21.551
	2 Management		18.02564103	17.076923	0.9487179	0.474358974	0.4744	63.523

Tests

Pivot table

Wilcoxon Rank Sum	**Z values**	**Decision**	**Pvalue**
Lower Test	-1.64485363	Reject Ho	4.49422E-46
Upper Test	1.644853627	Do Not Reject Ho	1
Two-Sided Test	1.959963985	Reject Ho	0
CHI test			0.373
Pearson correlation			0.981

Count of Job level M-mgt, E-emloyee	Respect for leader			
Job level M-mgt, E-emloyee	1	2	3	4
E	19	20	2	
M	19	16		1
Grand Total	38	36	2	1

joblevel: What level are you within the company?17. My leader is ethical?

Crosstab

			17. My leader is ethical?					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you within the company?	1 Employees	Count	10	25	3	0	3	41
		% within joblevel What level are you within the company?	24.4%	61.0%	7.3%	0.0%	7.3%	100.0 %
	2 Management	Count	15	21	1	0	1	38
		% within joblevel What level are you within the company?	39.5%	55.3%	2.6%	0.0%	2.6%	100.0 %
Total		Count	25	46	4	0	4	79
		% within joblevel What level are you within the company?	31.6%	58.2%	5.1%	0.0%	5.1%	100.0 %
	1 Employees	Actual	10	25	3	0	3	41

	2 Management		15	21	1	0	1	38
	1 Employees	Expected	12.97468354	23.873418	2.0759494	0	2.0759	21.278
	2 Management		12.02531646	22.126582	1.9240506	0	1.9241	67.862

Tests

Pivot table

Wilcoxon Rank Sum	Z values	Decision	Pvalue
Lower Test	-1.64485363	Reject Ho	6.02517E-45
Upper Test	1.644853627	Do Not Reject Ho	1
Two-Sided Test	1.959963985	Reject Ho	0
CHI test			#DIV/0!
Pearson correlation			0.941

Count of Job level M-mgt, E-emloyee	Leader Ethics			
Job level M-mgt, E-emloyee	1	2	3	5
E	10	25	3	3
M	15	21	1	1
Grand Total	25	46	4	4

joblevel: What level are you within the company?18. I am happy working for my current supervisor?

Crosstab

			18. I am happy working for my current supervisor?					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you within the company?	1 Employees	Count	15	25	2	0	0	42
		% within joblevel What level are you within the company?	35.7%	59.5%	4.8%	0.0%	0.0%	100.0 %
	2 Management	Count	16	19	2	0	1	38
		% within joblevel What level are you within the company?	42.1%	50.0%	5.3%	0.0%	2.6%	100.0 %
Total		Count	31	44	4	0	1	80
		% within joblevel What level are you within the company?	38.8%	55.0%	5.0%	0.0%	1.3%	100.0 %

	1 Employees	Actual	15	25	2	0	0	42
	2 Management		16	19	2	0	1	38
	1 Employees	Expected	16.275	23.1	2.1	0	0.525	22.05
	2 Management		14.725	20.9	1.9	0	0.475	65.488

Tests				Pivot table				
Wilcoxon Rank Sum	**Z values**	**Decision**	**Pvalue**	Count of Job level M-mgt, E-emloyee	Subordinate contentment			
Lower Test	-1.64485363	Reject Ho	1.0238E-45	Job level M-mgt, E-emloyee	1	2	3	5
Upper Test	1.644853627	Do Not Reject Ho	1	E	15	25	2	
Two-Sided Test	1.959963985	Reject Ho	0	M	16	19	2	1
				Grand Total	31	44	4	1
CHI test			#DIV/0!					
Pearson correlation			0.978					

joblevel: What level are you within the company?19. I am optimistic about the future of my current employment?

Crosstab

			19. I am optimistic about the future of my current employment?					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you within the company?	1 Employees	Count	11	25	0	1	4	41
		% within joblevel What level are you within the company?	26.8%	61.0%	0.0%	2.4%	9.8%	100.0 %
	2 Management	Count	15	20	2	0	0	37
		% within joblevel What level are you within the company?	40.5%	54.1%	5.4%	0.0%	0.0%	100.0 %
Total		Count	26	45	2	1	4	78
		% within joblevel What level are you within the company?	33.3%	57.7%	2.6%	1.3%	5.1%	100.0 %
	1 Employees	Actual	11	25	0	1	4	41
	2 Management		15	20	2	0	0	37
	1 Employees	Expected	13.66666667	23.653846	1.0512821	0.525641026	2.1026	21.551
	2 Management		12.33333333	21.346154	0.9487179	0.474358974	1.8974	63.523

Tests				Pivot table				
Wilcoxon Rank Sum	**Z values**	**Decision**	**Pvalue**	Count of Job level M-mgt, E-emloyee	Subordinate job satisfaction			

Lower Test	-1.64485363	Reject Ho	6.90082E-45	Job level M-mgt, E-emloyee	1	2	3	4
Upper Test	1.644853627	Do Not Reject Ho	1	E	11	25		1
Two-Sided Test	1.959963985	Reject Ho	0	M	15	20	2	
				Grand Total	26	45	2	1
CHI test			0.092					
Pearson correlation			0.929					

How is leadership operationalized

joblevel: What level are you within the company?20. My supervisor is an effective leader?

Crosstab

			20. My supervisor is an effective leader?					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you within the company?	1 Employees	Count	14	25	1	1	1	42
		% within joblevel What level are you within the company?	33.3%	59.5%	2.4%	2.4%	2.4%	100.0 %
	2 Management	Count	14	23	0	1	0	38
		% within joblevel What level are you within the company?	36.8%	60.5%	0.0%	2.6%	0.0%	100.0 %
Total		Count	28	48	1	2	1	80
		% within joblevel What level are you within the company?	35.0%	60.0%	1.3%	2.5%	1.3%	100.0 %
	1 Employees	Actual	14	25	1	1	1	42
	2 Management		14	23	0	1	0	38
	1 Employees	Expected	14.7	25.2	0.525	1.05	0.525	22.05
	2 Management		13.3	22.8	0.475	0.95	0.475	65.488

Tests

Pivot table

Wilcoxon Rank Sum	**Z values**	**Decision**	**Pvalue**	Count of Job level M-mgt, E-emloyee	Leadership effectiveness			
Lower Test	-1.64485363	Reject Ho	2.02804E-45	Job level M-mgt, E-	1	2	3	4

				emloyee				
Upper Test	1.644853627	Do Not Reject Ho	1	E	14	25	1	1
Two-Sided Test	1.959963985	Reject Ho	0	M	14	23		1
				Grand Total	28	48	1	2
CHI test			0.756					
Pearson correlation			0.998					

joblevel: 21.What traits are important for a supervisor to be an effective leader? What level are you within the company?

Crosstab

			joblevel: What level are you within the company?		Total			
			1 Employees	2 Management		ACTUAL		EXPECTED
21. In your opinion what traits are important for a supervisor to be an effective leader in the construction industry?	Dominance	Count	20	10	30	20	10	15.914
		% within joblevel What traits are important for a supervisor to be an effective leader?	66.7%	33.3%	100.0%	40	35	7.3404
	Self-confidence	Count	40	35	75	20	21	21.749
		% within joblevel What traits are important for a supervisor to be an effective leader?	53.3%	46.7%	100.0%	29	30	31.297
	High energy	Count	20	21	41	18	11	15.384
		% within joblevel What traits are important for a supervisor to be an effective leader?	48.8%	51.2%	100.0%	25	21	24.401
	Stability	Count	29	30	59	29	29	30.767

		% within joblevel What traits are important for a supervisor to be an effective leader?	49.2%	50.8%	100.0%	31	28	31.297
	Locus of control	Count	18	11	29	18	17	18.566
		% within joblevel What traits are important for a supervisor to be an effective leader?	62.1%	37.9%	100.0%	27	24	27.054
	Sensitivity to others	Count	25	21	46	39	36	39.785
		% within joblevel What traits are important for a supervisor to be an effective leader?	54.3%	45.7%	100.0%			
	Abilities	Count	29	29	58			
		% within joblevel What traits are important for a supervisor to be an effective leader?	50.0%	50.0%	100.0%			
	Intelligence	Count	31	28	59			
		% within joblevel What traits are important for a supervisor to be an effective leader?	52.5%	47.5%	100.0%			
	Flexibility.	Count	18	17	35			
		% within joblevel What traits are important for a supervisor to be an effective leader?	51.4%	48.6%	100.0%			
	Integrity	Count	27	24	51			
		% within joblevel What traits are important for a supervisor to be an effective leader?	52.9%	47.1%	100.0%			
	Motivation	Count	39	36	75			
		% within joblevel What traits are important for a supervisor to be an effective leader?	52.0%	48.0%	100.0%			
Total		Count	296	262	558			

		% within joblevel What traits are important for a supervisor to be an effective leader?	53.0%	47.0%	100.0%			

Chi-Square Tests			Pvalue
CHI test			0.000
?correlation			0.924

joblevel: 22. What competencies are important to be an effective leader? What level are you within the company?

Crosstab

			joblevel: What level are you within the company?		Total			
			1 Employees	2 Management		ACTUAL		EXPECTED
22. What competencies are important for a supervisor to be an effective leader in the construction industry?	Strategic Capability and Leadership	Count	1	3	4	1	3	0.3915
		% within joblevel What competencies are important to be an effective leaderctive leader?	25.0%	75.0%	100.0%	2	19	2.0553
	Program and Project Management	Count	2	19	21	2	19	2.0553
		% within joblevel What competencies are important to be an effective leaderctive leader?	9.5%	90.5%	100.0%	2	19	2.0553
	Financial Management	Count	2	19	21	2	19	2.0553
		% within joblevel What competencies are important to be an effective leaderctive leader?	9.5%	90.5%	100.0%	2	19	2.0553
	Manage and control	Count	2	19	21	2	19	2.0553

	% within joblevel What competencies are important to be an effective leaderctive leader?	9.5%	90.5%	100.0%	2	19	2.0553
Change Management	Count	2	19	21	2	19	2.0553
	% within joblevel What competencies are important to be an effective leaderctive leader?	9.5%	90.5%	100.0%	2	19	2.0553
Knowledge Management	Count	2	19	21	2	19	2.0553
	% within joblevel What competencies are important to be an effective leaderctive leader?	9.5%	90.5%	100.0%	2	19	2.0553
Innovation Champions	Count	2	19	21			
	% within joblevel What competencies are important to be an effective leaderctive leader?	9.5%	90.5%	100.0%			
Problem Solving and Analysis	Count	2	19	21			
	% within joblevel What competencies are important to be an effective leaderctive leader?	9.5%	90.5%	100.0%			
People Management and Empowerment	Count	2	19	21			
	% within joblevel What competencies are important to be an effective leaderctive leader?	9.5%	90.5%	100.0%			
Client Orientation and Customer Focus	Count	2	19	21			
	% within joblevel What competencies are important to be an effective leaderctive leader?	9.5%	90.5%	100.0%			
Communication	Count	2	19	21			

		% within joblevel What competencies are important to be an effective leaderctive leader?	9.5%	90.5%	100.0%			
	Honesty and Integrity	Count	2	19	21			
		% within joblevel What competencies are important to be an effective leaderctive leader?	9.5%	90.5%	100.0%			
Total		Count	23	212	235			
		% within joblevel What competencies are important to be an effective leaderctive leader?	9.8%	90.2%	100.0%			

Chi-Square Tests			**Pvalue**					
CHI test			1.000					
Pearson correlation			1.000					

joblevel: What level are you within the company?23. My leader continuously creates ways to increase efficiency at my workplace.

Crosstab

			23. My leader continuously creates ways to increase efficiency in my workplace.					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you within the company?	1 Employees	Count	8	30	1		2	41
		% within joblevel What level are you within the company?	19.5%	73.2%	2.4%	0.0%	4.9%	100.0 %
	2 Management	Count	9	26	1	1	1	38
		% within joblevel What level are you within the company?	23.7%	68.4%	2.6%	2.6%	2.6%	100.0 %
Total		Count	17	56	2	1	3	79
		% within joblevel What level are you within the company?	21.5%	70.9%	2.5%	1.3%	3.8%	100.0 %

	1 Employees	Actual	8	30	1	0	2	41
	2 Management		9	26	1	1	1	38
	1 Employees	Expected	8.82278481	29.063291	1.0379747	0.518987342	1.557	21.278
	2 Management		8.17721519	26.936709	0.9620253	0.481012658	1.443	67.862

Tests

Wilcoxon Rank Sum	Z values	Decision	Pvalue
Lower Test	-1.64485363	Reject Ho	4.00807E-45
Upper Test	1.644853627	Do Not Reject Ho	1
Two-Sided Test	1.959963985	Reject Ho	0
CHI test			0.815
Pearson correlation			0.995

Pivot table

Count of Job level M-mgt, E-emloyee	Efficiency			
Job level M-mgt, E-emloyee	1	2	3	4
E	8	30	1	
M	9	26	1	1
Grand Total	17	56	2	1

joblevel: What level are you within the company?24. Leadership development is very important for the sustained operation of our company?

Crosstab

			24. Leadership development is very important for the sustained operation of our company?					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you within the company?	1 Employees	Count	11	28	0	1	2	42
		% within joblevel What level are you within the company?	26.2%	66.7%	0.0%	2.4%	4.8%	100.0%
	2 Management	Count	17	19	0	0	2	38
		% within joblevel What level are you within the company?	44.7%	50.0%	0.0%	0.0%	5.3%	100.0%
Total		Count	28	47	0	1	4	80
		% within joblevel What level are you within the company?	35.0%	58.8%	0.0%	1.3%	5.0%	100.0%
	1 Employees	Actual	11	28	0	1	2	42
	2 Management		17	19	0	0	2	38
	1 Employees	Expected	14.7	24.675	0	0.525	2.1	22.05

	2 Management		13.3	22.325	0	0.475	1.9	65.488
Tests				**Pivot table**				
24				Count of Job level M-mgt, E-emloyee	Importance of Leadership development			
Wilcoxon Rank Sum	**Z values**	**Decision**	**Pvalue**	Job level M-mgt, E-emloyee	1	2	4	5
Lower Test	-1.64485363	Reject Ho	4.00807E-45	E	11	28	1	2
Upper Test	1.644853627	Do Not Reject Ho	1	M	17	19		2
Two-Sided Test	1.959963985	Reject Ho	0	Grand Total	28	47	1	4
CHI test			#DIV/0!					
Pearson correlation			0.895					

joblevel: What level are you within the company?25. Do you have a leadership development program?

Crosstab

			25. Do you have a leadership development program?		
			No	Yes	Total
joblevel: What level are you within the company?	1 Employees	Count	22	20	42
		% within joblevel What level are you within the company?	52.4%	47.6%	100.0%
	2 Management	Count	19	19	38
		% within joblevel What level are you within the company?	50.0%	50.0%	100.0%
Total		Count	41	39	80
		% within joblevel What level are you within the company?	51.3%	48.8%	100.0%
	1 Employees	Actual	22	20	
	2 Management		19	19	
	1 Employees	Expected	11.55	10.5	
	2 Management		9.025	9.025	

Chi-Square Tests			**Pvalue**	**Pivot table**	
CHI test			0.000	Count of Job level M-mgt, E-emloyee	Leadership development programs

Pearson correlation			#DIV/0!	Job level M-mgt, E-emloyee	0	1	Grand Total	
				E	22	20	42	
				M	19	19	38	
				Grand Total	41	39	80	

joblevel: What level are you within the company?26. Is your leadership development program linked to business objectives and strategies?

Crosstab

			26. Is your leadership development program linked to business objectives and strategies?					
			No	Yes	Total			
joblevel: What level are you within the company?	1 Employees	Count	22	20	42			
		% within joblevel What level are you within the company?	52.4%	47.6%	100.0%			
	2 Management	Count	18	20	38			
		% within joblevel What level are you within the company?	47.4%	52.6%	100.0%			
Total		Count	40	40	80			
		% within joblevel What level are you within the company?	50.0%	50.0%	100.0%			
	1 Employees	Actual	22	20				
	2 Management		18	20				
	1 Employees	Expected	11.55	10.5				
	2 Management		8.55	9.5				

Chi-Square Tests			**Pvalue**	**Pivot table**				
CHI test			0.000	Count of Job level M-mgt, E-emloyee	Leadership development program linkage to strategies			
Pearson correlation			-1.000	Job level M-mgt, E-emloyee	0	1	Grand Total	
				E	22	20	42	
				M	18	20	38	
				Grand Total	40	40	80	

joblevel: What level are you within the company?27. I feel valued as an employee?

Crosstab								
			27. I feel valued as an employee?					
			1.Strongly Agree	2. Agree	3.Disagree	4.Strongly disagree	5.Not sure	Total
joblevel: What level are you within the company?	1 Employees	Count	14	26	0	0	2	42
		% within joblevel What level are you within the company?	33.3%	61.9%	0.0%	0.0%	4.8%	100.0 %
	2 Management	Count	11	26	0	0	1	38
		% within joblevel What level are you within the company?	28.9%	68.4%	0.0%	0.0%	2.6%	100.0 %
Total		Count	25	52	0	0	3	80
		% within joblevel What level are you within the company?	31.3%	65.0%	0.0%	0.0%	3.8%	100.0 %
	1 Employees	Actual	14	26	0	0	2	42
	2 Management		11	26	0	0	1	38
	1 Employees	Expected	13.125	27.3	0	0	1.575	22.05
	2 Management		11.875	24.7	0	0	1.425	65.488

Tests			
Wilcoxon Rank Sum	**Z values**	**Decision**	**Pvalue**
Lower Test	-1.64485363	Reject Ho	2.02804E-45
Upper Test	1.644853627	Do Not Reject Ho	1
Two-Sided Test	1.959963985	Reject Ho	0
CHI test			#DIV/0!
Pearson correlation			0.994

Pivot table

Count of Job level M-mgt, E-emloyee	Employee's job satisfaction			
Job level M-mgt, E-emloyee	1	2	5	Grand Total
E	14	26	2	42
M	11	26	1	38
Grand Total	25	52	3	80

ANNEXURE I-Generalization to population.

Generalization Variables		**Sum of % that agree or strongly agree with Q1-27**	**Standard sampling error**	**Lower limit**		**Upper limit**

1.Leadership conception	Employees	88.10%	0.37	80.89%	≤ π ≤	95.30%
	Management	100.00%	0.00	100.00%	≤ π ≤	100.00%
	Total sample	93.75%	0.26	88.69%	≤ π ≤	98.81%
2.Management conception	Employees	95.24%	0.22	90.86%	≤ π ≤	99.62%
	Management	91.89%	0.30	86.07%	≤ π ≤	97.71%
	Total sample	93.67%	0.26	88.58%	≤ π ≤	98.77%
3.Management/leadership exclusivity	Employees	76.19%	0.56	65.23%	≤ π ≤	87.15%
	Management	71.05%	0.64	58.54%	≤ π ≤	83.56%
	Total sample	73.75%	0.60	62.06%	≤ π ≤	85.44%
4.Leadership perceptions	Employees	57.14%	0.87	40.17%	≤ π ≤	74.12%
	Management	72.97%	0.61	61.04%	≤ π ≤	84.90%
	Total sample	64.56%	0.74	50.03%	≤ π ≤	79.08%
5.Cognitive abilities	Employees	92.86%	0.28	87.42%	≤ π ≤	98.29%
	Management	84.21%	0.43	75.72%	≤ π ≤	92.70%
	Total sample	88.75%	0.36	81.77%	≤ π ≤	95.73%
6. Decision making skills	Employees	97.56%	0.16	94.46%	≤ π ≤	100.66%
	Management	92.11%	0.29	86.37%	≤ π ≤	97.84%
	Total sample	94.94%	0.23	90.41%	≤ π ≤	99.46%
7. Problem solving skills	Employees	83.33%	0.45	74.57%	≤ π ≤	92.10%
	Management	81.08%	0.48	71.61%	≤ π ≤	90.55%
	Total sample	82.28%	0.46	73.18%	≤ π ≤	91.37%
8. Innovativeness	Employees	80.95%	0.49	71.44%	≤ π ≤	90.46%
	Management	92.11%	0.29	86.37%	≤ π ≤	97.84%
	Total sample	86.25%	0.40	78.42%	≤ π ≤	94.08%
9. Emotional intelligence	Employees	71.43%	0.63	59.03%	≤ π ≤	83.82%
	Management	76.32%	0.56	65.40%	≤ π ≤	87.23%
	Total sample	73.75%	0.60	62.06%	≤ π ≤	85.44%
10. Leadership maturity	Employees	60.53%	0.81	44.70%	≤ π ≤	76.35%
	Management	42.11%	1.17	19.12%	≤ π ≤	65.09%
	Total sample	54.39%	0.92	36.44%	≤ π ≤	72.34%
11. Influence abilities	Employees	83.33%	0.45	74.57%	≤ π ≤	92.10%
	Management	78.95%	0.52	68.83%	≤ π ≤	89.07%
	Total sample	81.25%	0.48	71.83%	≤ π ≤	90.67%
12. Supportiveness	Employees	54.76%	0.91	36.95%	≤ π ≤	72.58%
	Management	81.58%	0.48	72.27%	≤ π ≤	90.89%
	Total sample	67.50%	0.69	53.90%	≤ π ≤	81.10%
13. Demand tolerance	Employees	92.68%	0.28	87.18%	≤ π ≤	98.19%
	Management	89.47%	0.34	82.75%	≤ π ≤	96.20%
	Total sample	91.14%	0.31	85.03%	≤ π ≤	97.25%
14. Work ethics	Employees	95.12%	0.23	90.68%	≤ π ≤	99.56%
	Management	100.00%	0.00	100.00%	≤ π ≤	100.00%
	Total sample	97.47%	0.16	94.31%	≤ π ≤	100.63%
15. Uncertainty control	Employees	19.05%	2.06	-21.36%	≤ π ≤	59.45%
	Management	15.79%	2.31	-29.47%	≤ π ≤	61.05%
	Total sample	17.50%	2.17	-25.06%	≤ π ≤	60.06%
16. Respect for leader	Employees	95.12%	0.23	90.68%	≤ π ≤	99.56%
	Management	94.59%	0.24	89.91%	≤ π ≤	99.28%

	Total sample	94.87%	0.23	90.31%	≤ π ≤	99.43%
17. Leader Ethics	Employees	85.37%	0.41	77.25%	≤ π ≤	93.48%
	Management	94.74%	0.24	90.12%	≤ π ≤	99.36%
	Total sample	89.87%	0.34	83.29%	≤ π ≤	96.45%
18. Subordinate contentment	Employees	95.24%	0.22	90.86%	≤ π ≤	99.62%
	Management	92.11%	0.29	86.37%	≤ π ≤	97.84%
	Total sample	93.75%	0.26	88.69%	≤ π ≤	98.81%
19. Subordinate job satisfaction	Employees	87.80%	0.37	80.50%	≤ π ≤	95.11%
	Management	94.59%	0.24	89.91%	≤ π ≤	99.28%
	Total sample	91.03%	0.31	84.87%	≤ π ≤	97.18%
20. Leadership effectiveness	Employees	92.86%	0.28	87.42%	≤ π ≤	98.29%
	Management	97.37%	0.16	94.15%	≤ π ≤	100.59%
	Total sample	95.00%	0.23	90.50%	≤ π ≤	99.50%
21.1Dominance	Employees	66.67%	0.71	52.81%	≤ π ≤	80.53%
	Management	33.33%	1.41	5.61%	≤ π ≤	61.05%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
21.2Self-confidence	Employees	53.33%	0.94	35.00%	≤ π ≤	71.67%
	Management	46.67%	1.07	25.71%	≤ π ≤	67.62%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
21.3High energy	Employees	48.78%	1.02	28.70%	≤ π ≤	68.86%
	Management	51.22%	0.98	32.09%	≤ π ≤	70.35%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
21.4Stability	Employees	49.15%	1.02	29.22%	≤ π ≤	69.09%
	Management	50.85%	0.98	31.58%	≤ π ≤	70.12%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
21.5Locus of control	Employees	62.07%	0.78	46.75%	≤ π ≤	77.39%
	Management	37.93%	1.28	12.86%	≤ π ≤	63.00%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
21.6Sensitivity to others	Employees	54.35%	0.92	36.38%	≤ π ≤	72.31%
	Management	45.65%	1.09	24.27%	≤ π ≤	67.04%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
21.7Abilities	Employees	50.00%	1.00	30.40%	≤ π ≤	69.60%
	Management	50.00%	1.00	30.40%	≤ π ≤	69.60%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
21.8Intelligence	Employees	52.54%	0.95	33.91%	≤ π ≤	71.17%
	Management	47.46%	1.05	26.83%	≤ π ≤	68.08%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
21.9Flexibility.	Employees	51.43%	0.97	32.38%	≤ π ≤	70.48%
	Management	48.57%	1.03	28.40%	≤ π ≤	68.74%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
21.10Integrity	Employees	52.94%	0.94	34.46%	≤ π ≤	71.42%
	Management	47.06%	1.06	26.27%	≤ π ≤	67.85%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
21.11Motivation	Employees	52.00%	0.96	33.17%	≤ π ≤	70.83%
	Management	48.00%	1.04	27.60%	≤ π ≤	68.40%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%

22.1Strategic Capability and Leadership	Employees	25.00%	1.73	-8.95%	≤ π ≤	58.95%
	Management	75.00%	0.58	63.68%	≤ π ≤	86.32%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
22.2Programme and Project Management	Employees	9.52%	3.08	-50.89%	≤ π ≤	69.94%
	Management	90.48%	0.32	84.12%	≤ π ≤	96.84%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
22.3Financial Management	Employees	9.52%	3.08	-50.89%	≤ π ≤	69.94%
	Management	90.48%	0.32	84.12%	≤ π ≤	96.84%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
22.4Manage and control	Employees	9.52%	3.08	-50.89%	≤ π ≤	69.94%
	Management	90.48%	0.32	84.12%	≤ π ≤	96.84%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
22.5Change Management	Employees	9.52%	3.08	-50.89%	≤ π ≤	69.94%
	Management	90.48%	0.32	84.12%	≤ π ≤	96.84%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
22.6Knowledge Management	Employees	9.52%	3.08	-50.89%	≤ π ≤	69.94%
	Management	90.48%	0.32	84.12%	≤ π ≤	96.84%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
22.7Service Delivery	Employees	50.00%	1.00	30.40%	≤ π ≤	69.60%
	Management	50.00%	1.00	30.40%	≤ π ≤	69.60%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
22.8Innovation Champions	Employees	9.52%	3.08	-50.89%	≤ π ≤	69.94%
	Management	90.48%	0.32	84.12%	≤ π ≤	96.84%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
22.9Problem Solving and Analysis	Employees	9.52%	3.08	-50.89%	≤ π ≤	69.94%
	Management	90.48%	0.32	84.12%	≤ π ≤	96.84%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
22.10People Management and Empowerment	Employees	9.52%	3.08	-50.89%	≤ π ≤	69.94%
	Management	90.48%	0.32	84.12%	≤ π ≤	96.84%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
22.11Client Orientation and Customer Focus	Employees	9.52%	3.08	-50.89%	≤ π ≤	69.94%
	Management	90.48%	0.32	84.12%	≤ π ≤	96.84%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
22.12Communication	Employees	9.52%	3.08	-50.89%	≤ π ≤	69.94%
	Management	90.48%	0.32	84.12%	≤ π ≤	96.84%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
22.13Honesty and Integrity	Employees	9.52%	3.08	-50.89%	≤ π ≤	69.94%
	Management	90.48%	0.32	84.12%	≤ π ≤	96.84%
	Total sample	100.00%	0.00	100.00%	≤ π ≤	100.00%
23. Efficiency	Employees	92.68%	0.28	87.18%	≤ π ≤	98.19%
	Management	92.11%	0.29	86.37%	≤ π ≤	97.84%
	Total sample	92.41%	0.29	86.79%	≤ π ≤	98.02%
24. Importance of Leadership development	Employees	92.86%	0.28	87.42%	≤ π ≤	98.29%
	Management	94.74%	0.24	90.12%	≤ π ≤	99.36%

	Total sample	93.75%	0.26	88.69%	≤ π ≤	98.81%
25. Leadership development programs	Employees	47.62%	1.05	27.06%	≤ π ≤	68.18%
	Management	50.00%	1.00	30.40%	≤ π ≤	69.60%
	Total sample	48.75%	1.03	28.65%	≤ π ≤	68.85%
26. Leadership development program linkage to strategies	Employees	47.62%	1.05	27.06%	≤ π ≤	68.18%
	Management	52.63%	0.95	34.04%	≤ π ≤	71.23%
	Total sample	50.00%	1.00	30.40%	≤ π ≤	69.60%
27. Employee's job satisfaction	Employees	95.24%	0.22	90.86%	≤ π ≤	99.62%
	Management	97.37%	0.16	94.15%	≤ π ≤	100.59%
	Total sample	96.25%	0.20	92.38%	≤ π ≤	100.12%

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ANNEXURE J- Article for Publication

The Conception and Operationalization of leadership in construction companies.

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1 December 2009

ABSTRACT-This study aims to examine how managers' leadership styles correlates with leadership outcomes and perception of subordinates and management in the construction industry. On the practical side, it seeks to inform project managers on how their leadership style is conceived by subordinates' and determine how leadership is operationalized by middle management. Academically, the study aims to provide additional insights into the leadership field by contributing to the future development of this study area. Leadership styles conception and operationalization were measured using a modified Bass and Avolio's multifactor leadership questionnaire (MLQ) and a modified Porter et al.'s organizational commitment questionnaire (OCQ). A total of 80 respondents participated in the study.The study revealed that most construction companies perceive leadership to be a mixture of transactional and transformational leadership but is more transactional by nature. A strong positive correlation was found between employees and middle management on the conception of leadership. Managers and employees believe that immediate supervisors are more managers instead of leaders. The research also indicated with a strong positive correlation between management and employees that a transformational leadership style is preferred. A strong positive correlation was found between employees and management on the operationalization of leadership.Traits which were rated to be the most important for leadership effectiveness are; self-confidence and motivation, Competencies which were rated to be critical for leadership effectiveness are; manage, control and communication. Respondents felt that leadership development is very important for the sustained operation of companies and should be linked to business strategies.

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INTRODUCTION- The construction industry is one of the most important industrial sectors in an economically developing country such as South Africa. Proper leadership style of project managers is necessary to sustain the industry. Unfortunately, the uncertain nature of this industry coupled with the difficulty and dynamic of most construction projects create daily problems for professionals (Nguyen *et al.*, 2004, p400). The importance of leadership in construction projects is unquestionable. As the industry is going global and projects are increasingly complex, leaders have a more important role to play in sustaining success of their projects and organizations they serve and people they lead. Leadership has always mattered and its significance in the contemporary business world is more than ever before. Research on the subject can make a valuable contribution to the efforts to enhance the performance of the industry. (S. Toor,G. Ofori, 2008)

Managers are directly and interactively involved with employees, therefore their leadership ability demands sensitivity to others(Lekganyane, J Oosthuizen,2006).
Supervisors needs to be aware that different leadership styles exhibited by managers or project managers are appropriate on different types of projects. That there is a need to maintain a balance between relations with people and getting the job done because relations with people are as important as getting the job done and the two should not be considered mutually exclusive. If relations with people and getting the job done are considered to be mutually exclusive, change would not take place or be smooth as a result of ineffective leadership. Matching the right combination of leadership traits, competencies and considering the required behaviour as well as the relevant situational factors is crucial. This paper is an attempt to understand how leadership factors like; transformational, transactional and laissez-faire leadership is conceived and operationalized in the South African construction industry and what the relationship is between the views of subordinates and management. Information obtained from the operationalization of leadership will shed light on the effectiveness of leadership in the industry. This research also provide new information to improve short comings of leaders through leadership development. The assessment of leadership effectiveness and other leadership outcomes with the proper implementation of recommendations on shortcomings could improve project success rates which will ensure growth, profitability, shareholder value and sustainable development of construction companies in South Africa.

RESEARCH PROBLEM- One of the challenges that every supervisor or manager faces is the task of bringing people together to function as a team. In today's competitive environment, managers need to decide what will enable their team to provide the highest level of quality, customer service or task accomplishment. Although there are rare exceptions, in most situations, the ability to respond to quality and customer service is much stronger when people operate as a team (Stark & Flaherty, 1999:p125). The manager with the ideal leadership traits is needed to ensure a learning environment with strategic direction, ability to cope with change and finally the ability to innovate for excellence (Moran & Brightman, 2001:p66-74 and Potter, 2001:p54-58).

Managerial work is being altered by sweeping trends in economics, politics, and society (Dess & Picken, 2000, p50). The trend toward globalisation continues to accelerate as foreign competition intensifies, foreign markets become more important, and more companies become multinational or participate in cross-national joint ventures. Cultural diversity of the workforce within organization is increasing. To build cooperative relationships requires considerable empathy, respect for diversity, and an understanding of the values, beliefs, and attitudes of people from different cultures. Many organizations are being decentralized into smaller, semi-autonomous units. Flattened by eliminating layers of middle management. Team-based organizations which are mainly found in the construction industry have more shared leadership, and team leaders are expected to be more of a coach and facilitator and less of a director and controller. (Yukl& Lepsinger,2004, p60).

Some authors (e.g. Bennis & Nabus, 1985; Zaleznik,1977, p40) contend that leadership and management are qualitatively different and mutually exclusive. The most extreme distinction involves the assumption that management and leadership cannot occur in the same person. In other words, some people are managers and other people are leaders. The definition of managers and leaders assume they have incompatible values and different personalities. In contrast Covey (1992) views management and leadership in his book titled; Principle-Centered leadership as not mutually exclusive; in fact, it might be said that leadership is the highest component of management. And leadership itself can be broken into two parts one having to do with vision and direction, values and purposes, and the other with inspiring and motivating people to work together with a common vision and purpose.

DEMARCATION OF THE STUDY- One of the essentials required for managing an organisation is leadership. Managerial leadership has been identified as important and critical to managing organisational change and establishing future sustainability (Bartol &

Martin, 2004:p3). It is for this reason that the role of leadership is emphazised. This paper looks into the concept of leadership. The author would like to assess how employees and middle management perceive leadership in the framework of the leadership traits and competencies supporting effectiveness. (Lekganyane J, 2006, p239).The focus is mainly on the construction engineering sector of South Africa in the Gauteng and North West provinces.

Ivancevich and Matterson (1996:p411) is of the opinion that leadership is a narrower concept than management. They further maintain that leaders may or may not be managers. The main purpose of exerting leadership influence is to achieve relevant goals. Leaders attempt to influence individuals or groups to achieve important goals (Ivancevich & Matteson, 1996:p412). The above is not necessary correct. One can view leadership as a wider concept then management. Management can be viewed as critical sub-responsibilities of the leader. Some studies done by authors like Lekganyane dispute the claim that leadership makes a difference. However, there is plenty of evidence to the effect that leadership can impact performance. Leaders do not always make a difference, but they can and do in multiple cases (Gibson *et al*., 2000:272). (Lekganyane, 2006, p 239).The difference that is made through the operationalization of leadership in the construction industry in the framework of project success and leadership effectiveness as perceived by employees and middle management is the focus of this study. How leadership is conceived and operationalized by other stakeholders like; clients, environmentalist, shareholders, suppliers and subcontractors are an important part of the investigation but does not form part of this research.

OVERVIEW OF THE SOUTH AFRICA CONSTRUCTION INDUSTRY – Most industries are dynamic in nature and the construction industry is no exception. Its environment has become more dynamic due to the increasing uncertainties in technology, budgets, and development processes. An engineering constuction project is completed as a result of a combination of many events and interactions, planned or unplanned, over the life of a facility, with changing participants and processes in a constantly changing environment (Sanvido et al., 1992). The concept of project success has remained ambiguously defined in the construction industry. Project success is almost the ultimate goal for every project. However, it means different things to different people. While some writers consider time, cost and quality as predominant criteria, others suggest that success is something more complex. The ability of a project manager to lead or manage is a major factor toward project success. Albert, 2004

Historically the construction industry mainly operated in a context of management being managers instead of leaders. There is a continuing controversy about the difference between leadership and management. It is obvious that a person can be a leader without

being a manager and a person can be a manager without being a leader. Rost (1991:p45) proposed that leading was not necessary for a manager to be effective in the producing and selling goods and services. However, even when authority is a sufficient basis for downward influence over subordinates, a leadership relationship seems necessary for influencing people over whom the leader has no authority (e.g peers). In organizations where change is unavoidable like construction companies a leadership relationship with subordinates also seems necessary.

Modern leadership goes beyond getting people to do what the leader wants them to do. Leadership today is about bringing out the very best people have to offer and helping to focus everyone's energy and enthusiasm along a unified front to achieve common goals. Outstanding leaders assess their own abilities to lead. They truly care about people, and they are responsive to the concerns of others. This people-oriented attitude creates one of the most powerful conditions for successful leadership - trust. Modem leaders build teams and oversee the critical elements of teamwork - communication, cooperation, and collaboration. Effective leaders encourage shared values among employees, such as open communication, honesty, quality, respect, and mutual support. Appropriate leadership in the construction industry results in self-managed teams and shared leadership among team members. Progressive leadership will be required for improvement, growth, and survival of construction businesses in the next South African millennium. Spatz D M (1999,p64)

LITERATURE REVIEW- An interesting observation is that, although calls have been made for more project leadership research within the field of project management for more than a decade (Fiedler FE, 1967), research on project leadership is still limited. Significant for research on project leadership is that it is the field of project management that incorporates leadership theories and models, not vice versa. A pragmatic conclusion, therefore, is that it is the field of project management that must take responsibility for the development of appropriate theories of project leadership. Within this process, two strategies are possible. Either an inductive approach can be used where existing theories, models, and concepts from (general) leadership research is transferred, applied, and tested in the project context; or a deductive approach can be used where the specific aspects of project leadership is described, and theory is built on grounded theory inspired approaches. This paper follows the logic of an inductive approach, as a means for testing the application of Leadership approaches like; Laissez-faire style, Transactional and Transformational styles. (Ralf Muller , J. Rodney Turner, 2006a)

Leadership- Leadership is 'the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organization…" (House et al., 1999: 184). Rost (1991:p45) defined management as an authority relationship that exists between a manager and subordinates to produce and sell goods and services.

The word leadership means different things to different scholars hence there are various perceptions of leadership. It has been described in terms of the position, personality, responsibility, influence process, an instrument to achieve a goal, behaviours, results from interaction and given some other meanings by various scholars. Most definitions have a common theme of directing a group towards a goal. Stogdill defined leadership as the process or act of influencing the activities of an organized group in its efforts toward goal setting and goal achievement (Stogdill, 1950). (S.O Ogunlana,K Limsila, 2008,p164). In addition Ivancevich and Matteson defined leadership as an influence in an organizational setting or situation, the effects of which are meaningful and have a distinct impact on and facilitate the achievement of challenging organizational relevant goals (Ivancevich & Matteson, 1996:412 and Northouse, 2000, p30). This definitions suggests that a person can influence the behavior of others (Bass, 1990:45). The ability to influence does not solely emerge from a person's position in the organisation.

Leaders can be found everywhere in organisations and they make themselves stand out when, through the application of influence, relevant goals are achieved. Lussier (2006:75) and Lussier and Achua (2004:5) define leadership as "the influencing process of leaders and followers to achieve organisational objectives through change". Daft (2005:552) continues to minimise the definition of leadership to: "the ability to influence people toward the attainment of goals." (Daft & Marcic, 2004:5). Kinicki and Williams (2006:444) adapt their take on this definition as: "Leadership is the ability to influence employees to voluntary pursues organizational goals".

Leadership has been defined in terms of traits, behaviours, influence, interaction patterns, role relationships, and occupation of administrative position. Yukl, 2006, p100 has cited about ten definitions of leadership from different authors, and it is believed that there are more definitions than that. It is therefore difficult to establish one all-inclusive definition. The leadership role is sometimes perceived as a pure management activity, in other cases it is perceived as synonymous with power and others will describe a leader as the popular person.

With even a cursory investigation of typical leadership studies it is clear that there is no shortage of assumptions made with regard to leaders themselves. The first, and somewhat most obvious, is the assumption that all managers are leaders. A second set of assumptions is tied to the heroic conceptualization of leadership. To begin to address the problems arising from potentially false assumptions when conducting a typical leadership study, researchers must first be more explicit in their operationalizations and justification for what a leader is and why, precisely, a given sample represents "leaders". For example, in many cases managers may in actuality be acting as leaders. (Hunter, et al, 2007).The above definition seeks to describe the behaviour or the skill required of an individual who is in a leadership position.

One definition cited by Yukl, (2006: p100) which almost sums up what leadership is "leadership is defined as the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and the success of the organizations" (House, et al., 1999:184). In this research, the concept of leadership is considered in the context of the view of House ,1999 and Covey (1992) which states that; Management and leadership is not mutually exclusive.

Leadership approach-The present study also uses charismatic leadership approach to identify the leadership style of project managers. In this approach, leadership is conceptualised by the behavioural areas from laissez-faire style (non-leadership), through transactional leadership (which hinges on reward system and punishments), to transformational leadership (which is based on inspiration and behavioural charisma) (Bass and Avolio, 1993). The approach is chosen because of its currency in management research and the efficacy demonstrated through research findings. The various components are now elaborated.(Ogunlana,K Limsila, 2008,p164)

Laissez-faire style- An avoidant leader may either not intervene in the work affairs of subordinates or may completely avoid responsibilities as a superior and is unlikely to put in effort to build a relationship with them. Laissez-faire style is associated with dissatisfaction, unproductiveness and ineffectiveness (Deluga, 1992). (S.O Ogunlana,K Limsila, 2008,p164)

Transactional style-Transactional leaders focus mainly on the physical and the security needs of subordinates. The relationship that evolves between the leader and the follower is based on bargaining exchange or reward systems (Bass, 1985; Bass and Avolio, 1993). (S.O Ogunlana,K Limsila, 2008,p164)

Transformational style-Transformational leader encourages subordinates to put in extra effort and to go beyond what they (subordinates) expected before (Burns, 1978). The subordinates of transformational leaders feel trust, admiration, loyalty, and respect

toward leaders and are motivated to perform extra-role behaviours (Bass, 1985; Katz and Kahn, 1978). Transformational leaders achieve the greatest performance from subordinates since they are able to inspire their subordinates to raise their capabilities for success and develop subordinate's innovative problem solving skills (Bass, 1985; Yammarino and Bass, 1990). This leadership style has also been found to lead to higher levels of organizational commitment and is associated with business unit performance (Barling et al., 1996). (S.O Ogunlana,K Limsila, 2008,p164) The following discussions on leadership outcomes are extracted from Bass and Avolio's (2004) MLQ manual.

Leadership outcomes-The outcomes from leadership quality consist of three measurable factors: effectiveness (reflects the leader's efficacy in achieving organizational outcomes, objectives, goals and subordinates' needs in their job); satisfaction (reflects the degrees to which subordinates are satisfied with their leader's behavior and the leader works with others in a satisfactory way); and extra effort (reflects the degrees to which the leader can increase subordinate's desire to succeed and subordinates exert effort higher than their normal rate). In order to develop a measuring instrument to establish how leadership is conceived in the practice within the construction industry, various leadership traits for effective leadership have been identified. The framework of effective leadership will be used as tool to evaluate how leadership is conceived by employees and middle management in the construction industry. The various leadership traits and competencies are identified and discussed and is considered as part of the framework for the empirical research. (S.O Ogunlana,K Limsila, 2008,p170)

Leadership traits- Many studies have concluded that leaders and leadership are important .As such, an interest arose in what sets apart individuals who become leaders from those who do not. This has led to an interest in the distinctive traits of leadership (Gibson *et al*., 2000:p273). Although modern research clearly states that traits are not the only factor, this research does not disregard the impact and importance of leadership behaviour as well as situational factors. In the trait theory of leadership, characteristics of leaders have been studied. This approach assumes that a finite number of individual traits of effective leaders could be found. Although some studies have reported that these traits contribute to leadership success, leadership success is however neither primarily nor completely a function of these or other traits (Gibson *et al*., 2000:p275). Traits that have been identified included: Dominance, Self-confidence, High energy, Stability, Locus of control, Sensitivity to others, Abilities, Intelligence, Flexibility, Integrity and Motivation.

Leadership competencies- In line with the industry's institutional and organisational challenges key competencies were identified; Strategic Capability and Leadership (Intellectual competencies ,Programme and Project Management (Managerial competencies),Financial Management (Managerial competencies), Change Management (Managerial competencies), Knowledge Management (Managerial competencies), Service Delivery Innovation Champions (Emotional competencies) , Problem Solving and Analysis (Emotional competencies), People Management and Empowerment (Managerial competencies),Client Orientation and Customer Focus (Managerial competencies), Communication (Managerial competencies),Honesty and Integrity (Emotional competencies)

Four early schools-The trait school suggests good leaders exhibit certain traits which they are born with. The behavioural school assumes effective leaders display given behaviours or styles, which can be developed. Most authors from the behavioural school assume different behaviours or styles are appropriate in different circumstances, but that was formalized by the contingency school. TurnerJR,1999, from work he did at Henley Management College, identified seven traits of effective project managers: problem solving ability; results orientation; energy and initiative; self-confidence; perspective; communication; negotiating ability. However, he did not consider whether different traits would be appropriate on different types of projects. Based on the work of (Frame JD,1987), he also took the four leadership styles, laissez- faire, democratic, autocratic and bureaucratic, and suggested how each style was appropriate at a different stage of the project life-cycle: feasibility, design, execution and close-out, respectively. The visionary school identifies two types of leaders, those who focus on relationships and communicate their values, and those who focus on process, called transformational and transactional leaders, respectively (Bass BM, 1990, p19). Confucius and Aristotle had similar views on leadership. Keegan and Den Hartog (Keegan AE, Den Hartog DN,2004,p18). predicted that transformational leadership would be more appropriate for project managers. However, in their study, even though they found a preference for transformational leadership, they could not find a significant link. Thus across all projects, that one dimension was not a significant determinant of success as a project manager. (Ralf Muller , J. Rodney Turner, 2006a)

However, based on the work of Dulewicz and Higgs (Dulewicz V, Higgs MJ,2003) and interview results (Ralf Muller , J. Rodney Turner, 2006a) predict that they would find a transformational leadership style preferred on complex change projects and a transactional style preferred on simple, engineering projects. They also suggest six management styles, with different profiles of competencies: visionary; coaching; affiliative; democratic; pacesetting; and commanding. Through a survey of 2000 managers they identified situations in which each style is appropriate. The first four are

best in certain situations, but are adequate in most situations medium to long term. They classify the last two styles as toxic. They say they work well in turn-around or recovery situations, but if applied medium to long term they can poison a situation, and demotivate subordinates. Lee-Kelley and Leong (Lee-Kelley L, Leong KL,2003;p91) set out to find whether a project manager's familiarity with the project management knowledge areas was a determinant of their success as a project manager. What they found was a project manager's self-confidence and self-belief, arising out of their experience as a project manager, influenced their perception of success. Thus the manager's emotional intelligence affects their perception of success, which can feed though to make success (or failure) a self-fulfilling prophecy. However, this is not related to type of project. (Ralf Muller , J. Rodney Turner, 2006a)

Competency school-This school says effective leaders exhibit certain competencies. It encompasses all the previous schools because traits and behaviours are competencies, it says certain competency profiles are appropriate in different situations, it can define the competency profile of transformational and transactional leaders, and it suggests emotional intelligence as one of four groups of competencies. After a substantial review of the literature on leadership competencies, Dulewicz and Higgs (Dulewicz V, Higgs MJ,2003.) identified fifteen competencies which influence leadership performance.They group the competencies into three competence types, which they call intellectual (IQ), managerial (MQ) and emotional (EQ). Dulewicz and Higgs also identified three leadership styles, which they called Goal Oriented, Involving and Engaging. Crawford (Crawford LH, 2001, Crawford LH 2005,p7) investigated the competence of project managers, and found different profiles appropriate for different types of project. However, she did not investigate leadership style. Dainty et al. (Dainty ARJ, Cjeng M, Moore DR, 2005, p2) identified twelve behavioural competencies for construction project managers. They reduce these to two core competencies, team leadership and self-control.

OTHER LEADERSHIP THEORIES

New trends are indicating a focus on workplace spirituality as a new leadership theory. These rapidly accelerating trends for workplace spirituality and the new learning organizational paradigm appear to be confluent. A key issue that must be addressed is what are the qualities and processes for strategic leadership, leadership in empowered teams, and personal leadership for facilitating this confluence. Spiritual leadership can be viewed as a field of inquiry within the broader context of workplace spirituality. Both are areas of research in the early stage of development and therefore lack a strong body of theory and research findings. (Louis W. Fry, 2003, p 695)

From an ethics and values perspective, leaders have an impact on establishing and reinforcing personal, team, and organizational values (Northouse,2001). Ethics is central

to leadership because of the nature of the leadership process and the need to engage followers to accomplish mutual goals. However, very little research has been published on the theoretical foundations of leadership ethics and values. Greenleaf's (1977, 1978) writing on servant leadership holds that the primary purpose of business should be to create a positive impact on its employees and community. The framework for servant leadership consists of helping others discover their inner spirit, earning and keeping others trust, service over self-interest, and effective listening. Covey's (1989, 1991) principle-centered leaders, like Greenleaf's servant leaders, willingly try to live in service (calling) to others in harmony with natural laws and universal principles. The purpose of the seven habits is to help one find a renewing harmony (membership) and balance in life in spite of constant changes and outside pressures. Drawing upon the seven habits, principle-centered leaders are continually learning, are service oriented, believe in other people, radiate positive energy, see life as an adventure, are synergistic, lead balanced lives, and exercise for self-renewal. Covey introduces the four master principles of personal trustworthiness, interpersonal trust, managerial empowerment, and organizational alignment. Principled-centered leaders then practice these principles from the inside out at the personal, interpersonal, managerial, and organizational levels to unleash the creativity, talent, and energy of a workforce whose jobs in the past neither required nor rewarded use of such resources. Kouzes and Pozner (1987, p.30) define leadership as ''the art of mobilizing others to want to struggle for shared aspirations.'' Five fundamental practices that enable leaders to get extraordinary things include challenging the process, inspiring a shared vision, enabling others to act, modeling the way, and setting the example by behaving in ways that are consistent with shared values. Four essential leader characteristics and values that followers admire and that give the leader credibility in motivating people to perform and satisfy the basic human need for calling in making a difference include being honest, forward-looking, inspiring in pursuit of a shared vision, and competent (Kouzes & Pozner, 1993). When people perceive their leaders to have high credibility, they are significantly more likely to be organizationally committed and productive. Value-based leadership is predicated on shared, strongly internalized values that are advocated and acted on by the leader (Bass & Avolio, 1994; House, 1996; House & Shamir, 1993). These leaders give meaning to follower effort and organizational goals by connecting them to the deeply held values of subordinates. Value-based leaders articulate a vision of a better future to energize extraordinary follower motivation, commitment, and performance by appealing to subordinate's values, enhancing their self efficacy and making their self-worth contingent on their contribution to the leader's mission and the collective vision (House & Shamir, 1993).

Klein and House (1995) call charismatic leadership ''a fire that ignites followers' energy and commitment producing results above and beyond the call of duty.'' These effects are

seen to have a higher probability of occurrence in stressful environments and situations where followers look to leaders to deliver them from their difficulties (Northhouse, 2001). (Louis W. Fry, 2003, p 693)

LEADERSHIP RESEARCH IN THE CONSTRUCTION INDUSTRY

Research has shown that the project manager is one of the most important success factors of projects. Site managers have an impact on the overall quality and cost of the project and the quality of the individual site manager may affect the project cost by as much as 10% (Herbert A, Martvall K, Wirdenius H, 1970;7:19–20). Leadership is one of the most important subjects in management studies (Toor SR, Ogunlana SO,2006). However, many authors have not been able to articulate the idea of leadership despite the large volume of research and literature on the area (Giritli H, Oraz GT, 2004;22:253–62, Kets de Vries MRF, 1997. p. 50–271). Particularly in the construction industry, not much work has been done on leadership (Odusami KT, Iyagba RRO, Omirin MM, 2003; 21:p519–27). Dulaimi and Langford (Dulaimi M, Langford DA, 1999;125(4):256–64) argue that most studies on leadership in the construction industry concentrate on investigating the motivational factors and the personal characteristics of project managers. Few studies focus on how leadership is conceived and operationalized in the construction industry.

RESEARCH METHODOLOGY

The approach that was followed was to use existing theory and collecting information by way of interviewing the management and employees of construction companies in 16 organisations in South Africa. A questionnaire, designed specifically for this study, was used as a tool to gather information with the aim to gain an understanding of the conception and operationalized of leadership, and its alignment to theory as presented in the literature review. An analysis of the responses was made and compared to the literature review. Information obtained from the analysis was done based on theoretical postulations to establish level of conformance by each company in relation to theoretical teachings, and to look at differences in the opinion of management and employees on leadership conception and application in each company. Based on the outcome of the analysis, areas for improvement was identified and recommendations were made where applicable.

Research instrument design. A questionnaire survey was adopted for collecting data because of its advantage in yielding responses in standard format from a large number of respondents and the benefit of collecting data from respondents from geographically dispersed locations. The questionnaire was formulated from both the literature review and previous survey.The measurements adopted in the questionnaires are:

- *Leadership behaviour.* Leadership behaviours in this research were measured by using a modified version of Bass and Avolio's (2004) multifactor leadership

questionnaire (MLQ) Form 5X. The original MLQ comprises 36 statements for measuring nine leadership behaviours of leadership styles. In this research, the definition of leadership and management was first tested. Which was followed by measuring the conception of leadership behaviours in the context of the laissez-faire (non-leadership), the transactional leadership and transformational leadership styles (which is based on inspiration and behavioural charisma) (Bass and Avolio, 1993).Ten statements were used to measure how the different behaviors are conceived by employees and management. (Q1,2,3,4,9,10,11,12,14,16,)

- *Leadership outcome.* There were nine additional statements in the original MLQ for measuring leadership outcomes resulting from project managers' leadership approach. In the modified questionnaire six statements were used to measure how the different leadership outcomes are conceived by employees and management (Q 5, 6, 7, 17, 18, 19). Under operationalization three statements were used to measure leadership effectiveness levels (Q20, 21, 22) and one statements for measuring satisfaction levels of employees and management (Q27).
- *Work performance.* A rating tool was devised for employees and middle management to evaluate the effectiveness of their project leaders which is a reflection of their work performance. The measurement required participants to rate each statement on a five-point rating scale ranging from “strongly agree” to “strongly disagree” based on their experience with the project leaders. Two statement was used to measure how work performance is conceived by employees and management.(Q8,15)
- *Organizational commitment.* The organizational commitment questionnaire (OCQ), developed by Porter *et al.* (1974) was used to measure the commitment level of project leaders. It consists of 15 item statements. Nine statements are positive aspects, and six are negative. The respondent is required to rate each item on a 5-point rating scale ranging from “strongly disagree” to “strongly agree”. The OCQ form was modified to suite this research. One statement was used to measure how organizational commitment is conceived by employees and management.(Q14) Under operationalization three statements were used to measure leadership development and strategic planning (Q24,25,26) (S.O Ogunlana,K Limsila, 2008,p167)

Procedure for administration of the research instrument and control of variables

In the light of the above view as was stated before this research made use of interviews and observations as tools for data collection with a representative sample large enough to make generalizations possible. A few participants in these construction companies was selected who will shed light on the phenomenon under investigation. The following contracting companies was chosen as sample for this research; Robtek, Metso, Vaal

Engineering, AL Mining Technics, CrushPro, Pylon Engineering, Galison, Almec, Bids Investment, G.D Irons Construction, Ultra Reconditioner, Carlson Engineering. Data from questionnaires, interviews, as well as from records is presented in themes, tables, graphs etc for easy comparison and analysis.

DATA ANALYSIS STRATEGIES

Analysis approach-Considerable use of inductive reasoning was made use of in this qualitative research as many specific observations were made and questions asked after which inferences about larger and more general phenomena was drawn. Furthermore, a subjective data analysis methodology was followed by scrutinizing the body of data presented from the findings in search of patterns-subjectively identified-that the data reflects. After which a theme was identified in the data using an inductive process then a more deductive mode to verify or modify it with additional data. Interpretive narratives was constructed from the data to assess how leadership is conceived and operationalized in the practice within the construction industry in South Africa.

Hypothesis testing- Hypothesis testing as descript in Diammantpoulos and Schlegelmich was used to do the analysis. Data processing was done by cross-tabulations of a various variables with employment level opinion related question. The object was to ascertain whether there is an association (dependency) between the view of management and employees for each variables. The null hypothesis was used to determine relationships of variables, thus whether variables are not different in terms of responses or opinion. The alternative hypothesis on the other hand is being used to determine if variables are different or not equal to, thus to determine whether the background and the opinions given are different or not equal so that alternative conclusions could also be made on the initial opinions expressed. The p-value (or significance value) related to the hypothesis test was used. If the p-value of the test was found to be less than (< 0.05), then it implied that there is a dependence (i.e. the null-hypothesis of independence (or no difference) is rejected). In other words there is a significant difference between the variables being assessed in terms of their results. If the p-value of the test is found to be > 0.05, then two variables do not differ significantly in terms of opinion. (Diammantpoulos and Schlegelmich, 2000)

The analyzes that follow will look at verifying as to whether the null hypotheses (Ho) given are accepted, thus whether the two variables were indifferent (not different) if now established other alternative hypothesis (H1) that support the relationship between the variables chosen.

Generalization- In order to generalise the results into the population parameters, the confidence interval concept was applied. The 95% confidence level was assumed. The confidence interval reflects a range that the author is confident (but not certain) contains the population parameters. The limits are deduced by the following formula (for n>30)

$- z\sqrt{[(p(1-p)/n] \leq \pi \leq p + z\sqrt{[(p(1-p)/n]}$;

Where

p = sample proportion

π = population proportion

Standard sampling error = $\sqrt{[(p(1-p)/n]}$

From tables: ƶ =±1.96 @ 95% confidence interval

Methods of achieving validity- To ensure the internal validity of the research study, the author took precautions to eliminate other possible explanations for the results that were observed. The triangulation strategy was used to increase the probability that their explanations are the most likely ones for the observations. Multiple sources of data was collected with the hope that they will all converge to support the hypothesis. The thinking behind this approach is supported by Leedy & Ormrod (2005), who is of the opinion that the internal validity of a research study is the extent to which its design and the data it yields allow the researcher to draw accurate conclusions about cause-and-effect and other relationships within the data.

The following strategies on the other hand was used to enhance the external validity of the research project. A representative sample was taken and a replication in different companies was used. A specific representative number of people who is estimated to be 50% of the management and 50% of employees was sampled. Replication was achieved by repeating the same study on various construction companies. The same interview forms were used within the different construction companies. This approach is also supported by Leedy PD & Ormrod (2005), who stipulate that the external validity of the research study is the extent to which its results apply to situations beyond the study itself-in other words, the extent to which the conclusions drawn can be generalized to other applications.

Limitations-It is clear that the field of interest can become very wide which might result in a lengthy research. Limited resources and funding prevented the researcher from studying all the key questions and concepts. There were also time limitations that resulted in a reduced choice of sample size. The number of participants from construction companies was limited to 10 of which 50% was employees and 50% was

management samples. The background of most of the construction companies that were samples is engineering construction companies instead of civil construction companies. The researcher had to sample mainly engineering construction companies due to poor cooperation from some well known civil companies. Another reason for the focus on engineering construction companies is the fact that the research results could be used in the immediate working environment of the researcher to add value through recommendations to contracting companies. Most of the responding construction companies are in the Gauteng and North West province which is not a true reflection of the general South African construction industry population. Due to financial and time constrains results are mainly a reflection of companies in Gauteng and North West province with a strong engineering background.

RESEARCH RESULTS

Findings-Findings indicated that the data is not a normal distribution but a skew normal distribution. It was also found that the sampling method that was used was not effective because the questionnaire was given to supervisors who had to handout it out to subordinates. This process might have resulted in employees being afraid of victimization or feeling intimidated to answer questions in such a way that would have had a bad reflection on the company and immediate supervisors. The fact that the construction companies that were consulted were most contractors with whom the researcher was dealing with on a daily basis could also have resulted in incorrect data as these companies might have been under pressure to create a good impression with the researcher. Co-operation from the management of other construction companies who were afraid to reveal their in house management challenges was another problem. The researcher decided to focus on construction companies that he was dealing with as co-operation from extended companies was not satisfactory. Questionnaires were issued to companies and were never completed as indications showed that the supervisor might have been afraid of being evaluated. Other challenges were the fact that participants did not understand all the questions which revealed the design was not sufficient for lower level employees. Participating companies did not complete all questionnairs that were issued and did not maintain the 50/50% split between management and employees.

INITIAL DATA ANALYSIS: DESCRIPTIVE STATISTICS

Frequency distributions- In terms of the conception of leadership by employees and management respondents 54%, 40% of respondents agreed and strongly agreed that leadership is the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organization and that management is an authority relationship that exists between a manager and subordinates to produce and sell goods and services. 74% of respondents agreed that

management and leadership are not mutually exclusive. 65% of respondents agreed that most immediate supervisors are managers instead of leaders. Most respondent indicated that their supervisors has the ability to understand complex issues , makes good decisions and solves difficult problems. Supervisors need to understand complex issues which enables them to utilise opportunities. A great number of samples indicated that their supervisors have the ability to control their emotions but sometimes acts selfishly and do not admit to making mistakes. Most respondents indicated that their supervisors influence employees in order to achieve set objectives and persist under difficult or complex conditions. Supervisors are able to handle high demands when taking responsibility. A great number of respondents indicated that their supervisors are ethical and is able to deal well with conditions of uncertainty in the work environment. Respondents further indicated that they respect their supervisors and are happy with their employment and are optimistic about the future of their employment with their current employers.

In terms of the operationalization of leadership 95% of employees and management respondents agreed that their supervisors are effective leaders. 50% of respondents indicated that their companies do not have a leadership development program that is linked to the business strategy of the company.

DATA ANALYSIS-

Data from respondents were analyzed in the form of descriptive statistics. The relationship between leadership and management styles, leadership outcomes, to subordinate and supervisor (management) perceptions was examined through correlation analysis using Excel. The current study explored how leadership style is conceived and operationalized by subordinates and middle management in the construction industry. The results from the analyzes of data collected from 16 companies show that each project manager uses a variety of leadership styles as the occasion demands: transactional , transformational and *laissez-faire*. Some project managers mostly apply transformational leadership but in some circumstances they may act in a transactional way. Irrespective of the leadership outcomes, subordinate's performance and commitment is still impacted by the dominant leadership behaviour or style normally adopted by each project manager. The behaviour of the project leader is ultimately the main building block of the type of supervisory style cultured in the company.

NUMERICAL AND GRAPHICAL DESCRIPTION OF A SINGLE VARIABLE

The following guidelines and tools were used during the data analysis;

Chi-test returns the probability that a value of the c^2 statistic could have happened by chance under the assumption of independence. Rejecting H0 means the two samples come from a different distribution. (Press, Teukolsky, Vetterlling, and Flannery, 1992)

For the **Wilcoxon rank-sum test** rejecting Ho means there is a difference in the distribution of values in the two samples. (Bhattacharyya & Johnson ,1977,).

Cramer's V value is an indication of the association of nominal variables. Zero indicating no association and one indicating a strong association. (Diammantpoulos and Schlegelmich,2006)

The p-value for the **Pearson Correlation** is an indication of the correlation between ordinal variables. One or negative one indicating a strong positive or negative correlation and zero indicating no correlation. (Chernoff and Lehmann 1954).

How is leadership conceived?

Cross-tabulations for Question1.

The data analysis indicated that 100% of management and 88% of employees agree or strongly agrees that that leadership is 'the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organization. This can be regarded as a transformational leadership characteristic. (S.O Ogunlana,K Limsila, 2008,p167)

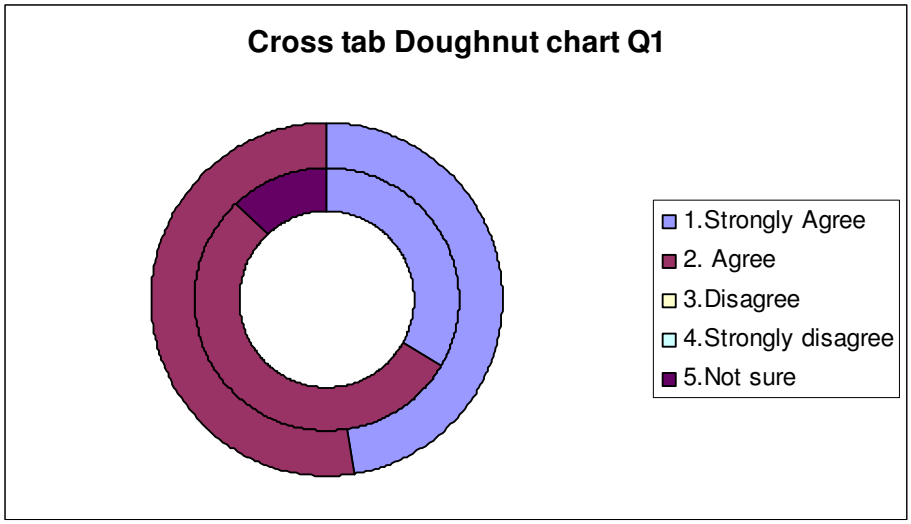

Figure 1: Cross-tabulation Doughnut chart for Question1 (Note: In all Doughnut charts the outer ring represents the management sample and the inner ring represents the employees sample.)

Null Hypothesis: There is no difference in opinions between management and employees on the definition of leadership.

Alternative Hypothesis: There is a difference in opinions between management and employees on the definition of leadership.

The p-value for the Pearson Correlation was 0.945. No significant difference between management and employees in terms of their opinions was found. The null-hypothesis of independence was not rejected. As indicated, there seems to be a small difference. Overall, a 94% of sample agrees with the definition of House et al.,1999,p. 184 on leadership. We can use the Wilcoxon test for the hypothesis testing. The alternative hypothesis is two-sided because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value 0.

Question1 Ho is not rejected, in conclusion there is no significant difference in opinions between management and employees on the definition of leadership.

Cross-tabulations for Question2.

The data analysis indicated that 92% of management and 95% defined management as an authority relationship that exists between a manager and subordinates to produce and sell goods and services. This can be regarded as *laissez-faire*l leadership characteristics. (S.O Ogunlana,K Limsila, 2008,)

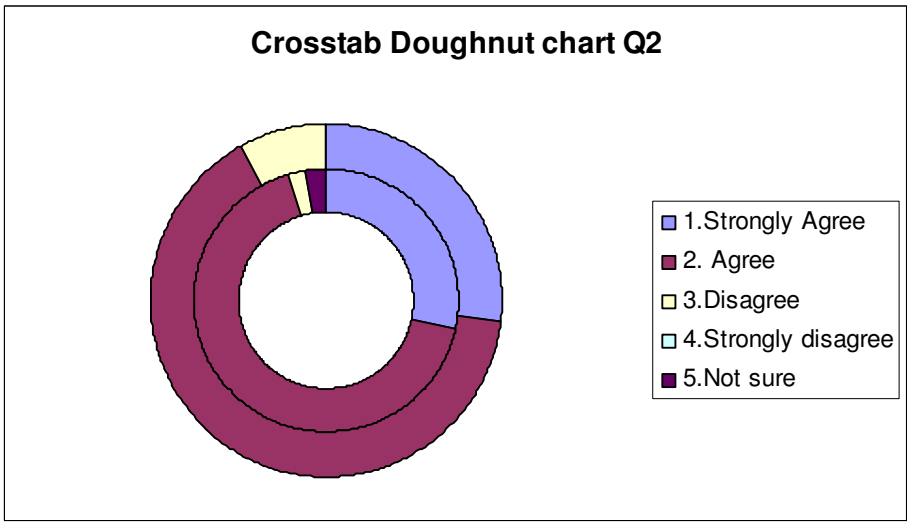

Figure 2: Cross-tabulation Doughnut chart for Question 2.

Null Hypothesis: There is no difference in opinions between management and employees on the definition of management.

Alternative Hypothesis: There is a difference in opinions between management and employees on the definition of management.

The p-value for the Pearson Correlation was 0.994. No significant difference between management and employees in terms of their opinions was found. The null-hypothesis of independence was not rejected. As indicated, there seems to be a small difference. Overall, a 94% of sample agrees with the definition of Rost (1991) on management. We can use the Wilcoxon test for the hypothesis testing. The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value of 0.

Question2 Ho is not rejected, in conclusion there is no difference in opinions between management and employees on the definition of management.

Cross-tabulations for Question 3.

The data analysis indicated that 71% of management and 76% feels that management and leadership are not mutually exclusive. (Covey) This can be regarded as transformational leadership characteristics. (S.O Ogunlana,K Limsila, 2008,)

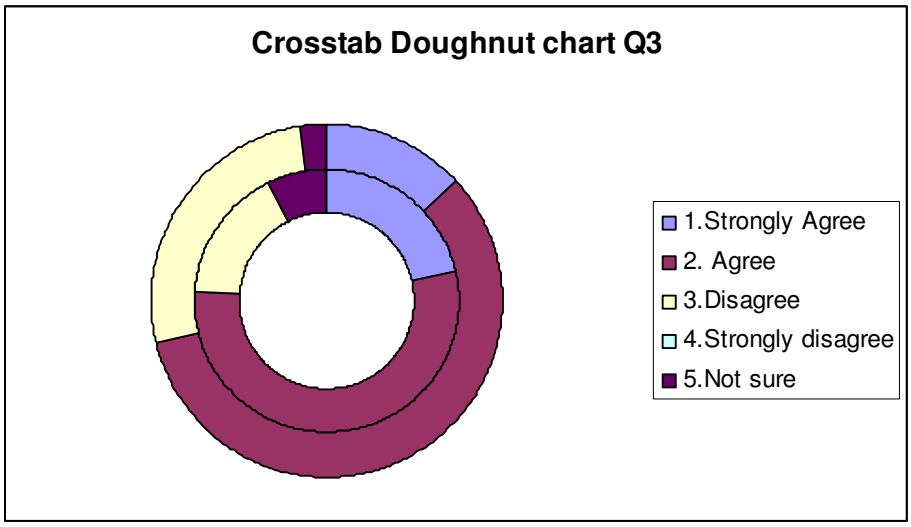

Figure 3: Cross-tabulation Doughnut chart for Question 3.

Null Hypothesis: There is no difference in opinions between management and employees on the exclusivity between leadership and management.

Alternative Hypothesis: There is a difference in opinions between management and employees on the exclusivity between leadership and management.

The p-value for the Pearson Correlation was 0.956. No significant difference between management and employees in terms of their opinions was found. The null-hypothesis

of independence was not rejected. As indicated, there seems to be a small difference. Overall, a 74% of sample feels that management and leadership are not mutually exclusive. We can use the Wilcoxon test for the hypothesis testing. The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1 and lower Wilcoxon test has a p-value 0.

Question3 Ho is not rejected, in conclusion there is no difference in opinions between management and employees on the exclusivity between leadership and management.

Cross-tabulations for Question 4.

The data analysis indicated that 73% of management and 57% feels most immediate supervisors are managers instead of leaders. This can be regarded as *laissez-faire* leadership characteristics. (S.O Ogunlana,K Limsila, 2008,)

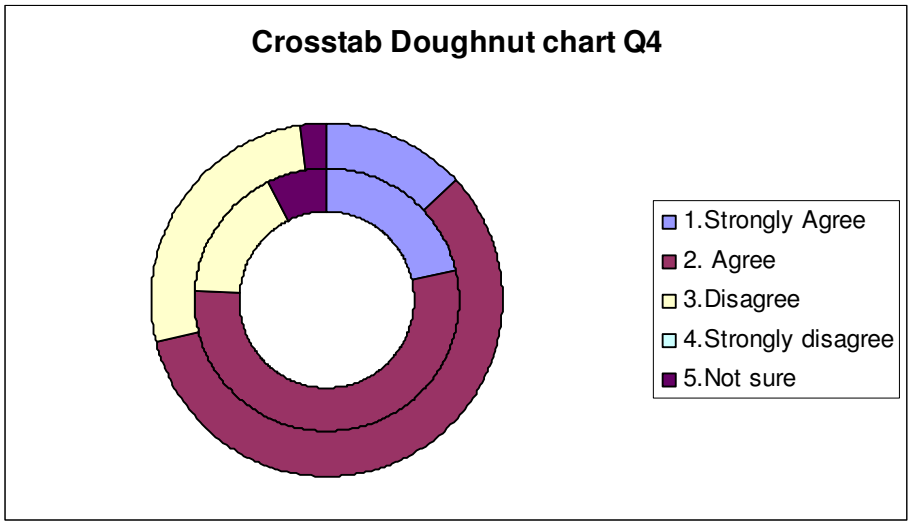

Figure 4: Cross-tabulation Doughnut chart for Question 4

Null Hypothesis: There is no difference in opinions between management and employees on the view of the roles of most immediate supervisors.

Alternative Hypothesis: There is a difference in opinions between management and employees on the view of the roles of most immediate supervisors.

The p-value for the Pearson Correlation was 0.923. No significant difference between management and employees in terms of their opinions was found. The null-hypothesis of independence was not rejected. As indicated, there seems to be a small difference. Overall, a 65% of sample feels that management and leadership feels most immediate

supervisors are managers instead of leaders. We can use the Wilcoxon test for the hypotheses The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1. and lower Wilcoxon test has a p-value 0.

Question4 Ho is not rejected, in conclusion there is no difference in opinions between management and employees on the view of the roles of most immediate supervisors.

How is leadership operationalized?

Cross-tabulations for Question 20.

The data analysis indicated that 97% of management and 93% of employees feels their supervisor are effective leaders. This can be regarded as transformational leadership characteristics. (S.O Ogunlana,K Limsila, 2008,)

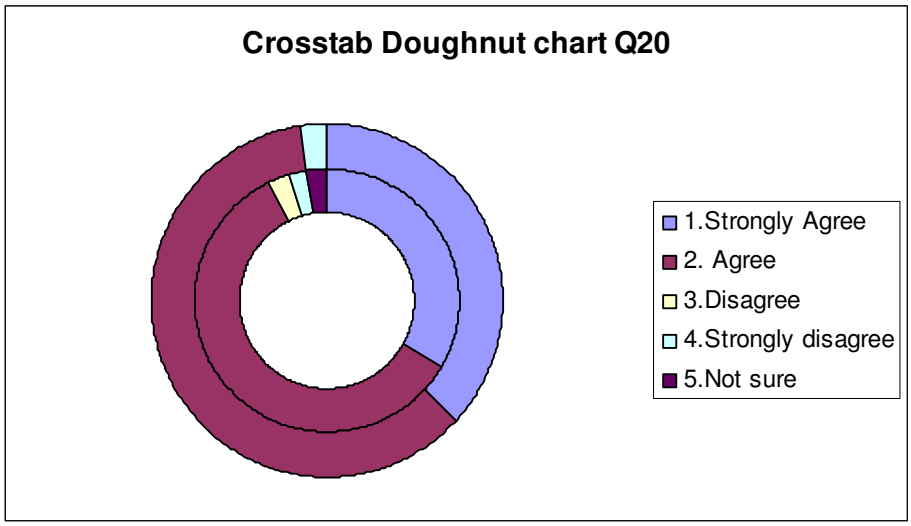

Figure 5: Cross-tabulation Doughnut chart for Question 20.

Null Hypothesis: There is no difference in opinions between management and employees.

Alternative Hypothesis: There is a difference in opinions between management and employees.

The p-value for the Pearson Correlation was 0.998. No significant difference between management and employees. The null-hypothesis of independence is not rejected. Overall, a 95% of the sample says their supervisor are effective leaders. For the Chi square test the P-values is 0.756 which is greater than 0.05 hence there is no

significant difference between the view of management and employees from the different companies. The null-hypothesis of independence is accepted

We can use the Wilcoxon test for the hypothesis testing. The alternative hypothesis is two-sided. Because the responses can take only five values, there are many ties. Two-sided Wilcoxon test has a p-value of 0.The p-value was 0 which is < 0.05 and hence there is a significant difference in the distribution of values in the two samples. The null-hypothesis of indifference is rejected. The alternative hypothesis would therefore be explored as the null hypothesis has been rejected. Upper Wilcoxon test has a p-value of 1. and lower Wilcoxon test has a p-value of 0.

Question20 Ho is not rejected, in conclusion there is no difference in opinions between management and employees.

Cross-tabulations for Question 21.

The data analysis indicated that management and employees feels their supervisor needs the following traits to be an effective leaders.

Tabel: 1 Traits Ranked in importance.

Self-confidence	1
Motivation	2
Stability	3
Intelligence	4
Abilities	5
Integrity	6
Sensitivity to others	7
High energy	8
Flexibility.	9
Dominance	10
Locus of control	11

Null Hypothesis: There is no difference in opinions between management and employees

Alternative Hypothesis: There is a difference in opinions between management and employees

For the Chi square test the P-values is 0 which is smaller then 0.05 hence there is a significant difference between the view of management and employees from the different companies. The null-hypothesis of independence is not accepted.The p-value for the Pearson Correlation was 0.927 No significant difference between management and employees. The null-hypothesis of independence is not rejected.Cramer's V of 0.518 value is indicating moderate association.

Cross-tabulations for Question 22.

The data analysis indicated that management and employees feels their supervisor needs the following competencies to be an effective leaders.

Table: 2 Competencies Ranked in importance.

Manage and control	1
Communication	2
Honesty and Integrity	3
Problem Solving and Analysis	4
Strategic Capability and Leadership	5
Knowledge Management	6
People Management and Empowerment	7
Programme and Project Management	8
Service Delivery	9
Client Orientation and Customer Focus	10
Financial Management	11
Change Management	12
Innovation Champions	13

Null Hypothesis: There is no difference in opinions between management and employees.

Alternative Hypothesis: There is a difference in opinions between management and employees.

For the Chi square test the P-values is 1 which is greater then 0.05 hence there is no significant difference between the view of management and employees from the different companies. The null-hypothesis of independence is accepted.The p-value for the Pearson Correlation was 1 No significant difference between management and employees. The null-hypothesis of independence is not rejected. Cramer's V of 0.639 value is indicating moderate association.

(Detail report covering the data analysis on all questions that were asked in the questioner can be viewed in the complete research report which can be obtained from Unisa SBL.)

SIGNIFICANCE-Determining whether the findings have practical significance as well as statistical significance was considered. Practical significance focused on whether findings are actually useful in practice. As the sample size was large, the standard error of the mean was small, and so it was found that even a minor difference in the results between the construction companies is statistically significant. The researcher in addition needs to consider if the difference is also practically significant. Whether knowing how leadership is conceived and operationalized in the practice within the construction industry in South Africa will benefit the industry or the SBL will only be determined through statistical testing of data conclusion drawn and the application of effective recommendations.

FINDINGS OF OTHER RELATED RESEARCH-According to **Burns (1978)**, transactional leadership is the fundamental of one person taking the initiative in making contact with others for the purpose of an exchange of valued things or bargaining process. It involves rewards and punishments. Transactional leaders must identify and clarify to subordinates about the setting role, task requirements, performance expectations and the distribution of rewards and punishment according to performance (**Bass, 1985**) whereas transformational leadership occurs when leaders and followers raise one another to higher levels of motivation and morality. The transformational leader exhibits charisma, develops a vision, provides inspiration, motivates by creating high expectations and modelling appropriate behaviours, gives consideration to the individual, pays personal attention to followers, provides intellectual stimulation, and challenges followers with new ideas and approaches (**Burns, 1978**). From the foregoing, transactional leadership is akin to initiating structure or task orientation whereas the transformational style is similar to consideration or relations orientation. (S.O Ogunlana,K Limsila, 2008,p174)

RESEARCH CLOSEOUT

How is leadership conceived

Q1; It can be said with 95% confidence that 100% of management and between 81%-95% of employees in the construction industry believes that Leadership is 'the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organization. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.945.

Q2; It can be said with 95% confidence that between 86% -99% of management and between 91%-98% of employees in the construction industry believes that management is an authority relationship that exists between a manager and subordinates to produce and sell goods and services .There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.994.

Q3; It can be said with 95% confidence that between 59% -84% of management and between 65%-87% of employees in the construction industry believes that management and leadership are not mutually exclusive. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.958.

Q4; It can be said with 95% confidence that between 61% -85% of management and between 40%-74% of employees in the construction industry believes that most immediate supervisors are managers instead of leaders. There is a good positive

correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.928.

Q5; It can be said with 95% confidence that between 76% -93% of management and between 87%-98% of employees in the construction industry believes that their leaders has the ability to understand complex issues. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.974.

Q6; It can be said with 95% confidence that between 86% -98% of management and between 95%-100% of employees in the construction industry believes that their leaders make good decisions. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.987.

Q7; It can be said with 95% confidence that between 72% -91% of management and between 75%-91% of employees in the construction industry believes that their leaders solve difficult problems. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.999.

Q8; It can be said with 95% confidence that between 86% -98% of management and between 71%-91% of employees in the construction industry believes that their leaders needs to be able to understand complex issues which should enable him to utilise opportunities. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.975.

Q9; It can be said with 95% confidence that between 65% -87% of management and between 59%-84% of employees in the construction industry believes that their leaders has the ability to control their emotions. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.991.

Q10; It can be said with 95% confidence that between 20% -65% of management and between 45%-76% of employees in the construction industry believes that their leaders sometimes acts selfishly and do not admit to making a mistake. There is not a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.445.

Q11; It can be said with 95% confidence that between 69% -89% of management and between 75%-92% of employees in the construction industry believes that their leaders influence employees in order to achieve set objectives. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.992.

Q12; It can be said with 95% confidence that between 72% -91% of management and between 67%-73% of employees in the construction industry believes that their leaders influence employees to persist under difficult or complex conditions. There is a moderate positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.77.

Q13; It can be said with 95% confidence that between 83% -96% of management and between 54%-81% of employees in the construction industry believes that their leaders are able to handle high demands when taking responsibility. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.972.

Q14; It can be said with 95% confidence that 100% of management and between 91%-100% of employees in the construction industry believes that their leaders are acting ethically at work. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.996.

Q15; It can be said with a high confidence that about 16% of management and between 18% of employees in the construction industry believes that their leaders does not deal well with conditions of uncertainty at work. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.996.

Q16; It can be said with 95% confidence that between 90%-91 % of management and between 91%-100% of employees in the construction industry respects their leaders. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.981.

Q17; It can be said with 95% confidence that between 90%-99 % of management and between 77%-94% of employees in the construction industry feels that their leaders are ethical. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.941.

Q18; It can be said with 95% confidence that between 86%-98 % of management and between 91%-100% of employees in the construction industry are happy working for their current supervisor. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.978.

Q19; It can be said with 95% confidence that between 81%-95 % of management and between 90%-99% of employees in the construction industry are optimistic about the future of their current employment. There is a good positive correlation between

management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.929.

How is leadership operationalized

Q20; It can be said with 95% confidence that between 94%-100 % of management and between 87%-98% of employees in the construction industry feels that their supervisors are effective leaders. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.998

Q21; There is a good positive correlation between management and employees in terms of their options on the necessary trait for effective leadership. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.927.

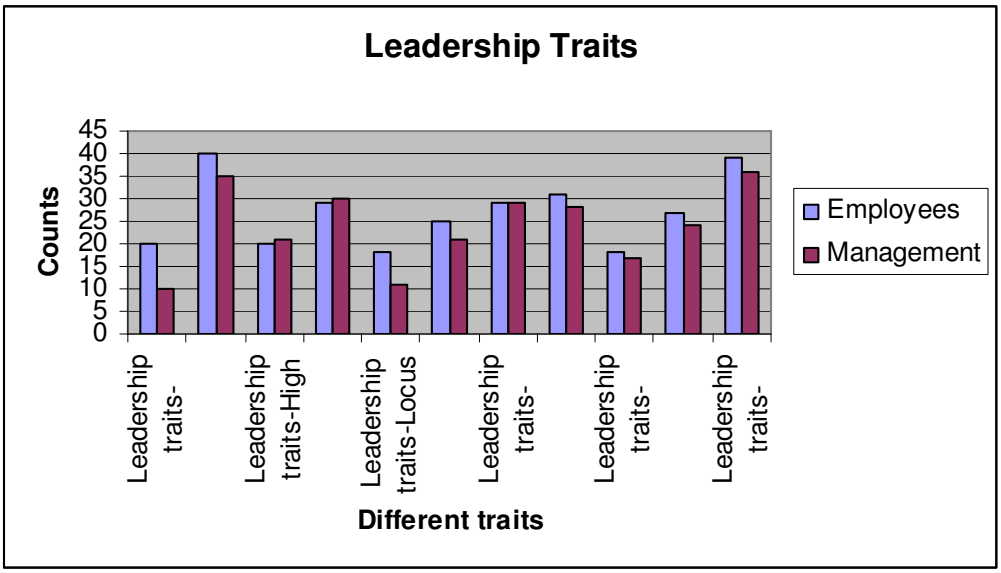

Figure: 3 Correlation on view on leadership traits.

There is a good correlation between the views of management and the views of employees on the different traits needed for leader to be effective leaders.

Q22; There is a good positive correlation between management and employees in terms of their options on the necessary competencies needed for effective leadership. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.954.

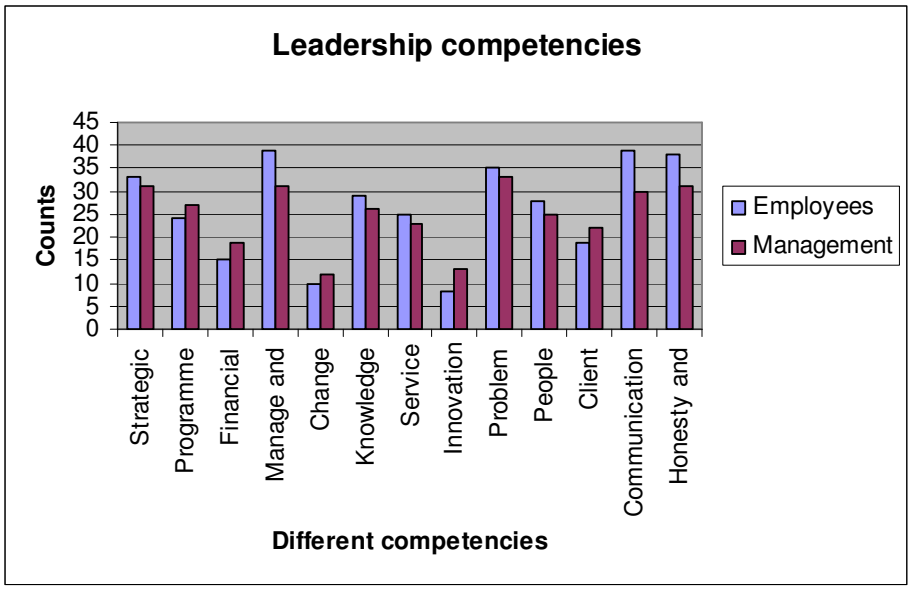

Figure: 4 Correlation on view on leadership competencies.

There is a good correlation between the views of management and the views of employees on the different competencies needed for leaders to be effective leaders.

Q23; It can be said with 95% confidence that between 86%-98 % of management and between 87%-98% of employees in the construction industry feels that their supervisors continuously creates ways to increase efficiency in their workplace. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.995

Q24; It can be said with 95% confidence that between 90%-99 % of management and between 87%-98% of employees in the construction industry feels Leadership development is very important for the sustained operation of their company. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.967

Q25; It can be said with 95% confidence that between 30%-70 % of management and between 27%-68% of employees in the construction industry indicated their companies has a leadership development programme. There is a good positive correlation between management and employees for this question.

Q26; It can be said with 95% confidence that between 34%-71 % of management and between 27%-68% of employees in the construction industry indicated that their leadership development program is linked to business objectives and strategies. There is a negative correlation between management and

employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of -1

Q27; It can be said with 95% confidence that between 90%-99 % of management and between 87%-98% of employees in the construction industry feels valued as an employee. There is a good positive correlation between management and employees for this question. Data analysis confirmed this conclusion yielding a Pearson correlation value of 0.994

RESEARCH HYPOTHESIS TESTING.

Sub-problems

Sub-problem 1

Null hypothesis, Ho1; There is no correlation between employees and management on the conception of leadership.

The null hypothesis is rejected.

Alternative hypothesis, Ha1; There is a correlation between employees and management on the conception of leadership.

The alternative hypothesis is accepted because data analysis revealed a clear correlation between the view of management and the views of employees on the conception of leadership.

Sub-problem 2

Null hypothesis, Ho2; There is no correlation between employees and management on the operationalization of leadership.

The null hypothesis is rejected.

Alternative hypothesis, Ha2; There is a correlation between employees and management on the operationalization of leadership.

The alternative hypothesis is accepted because data analysis revealed a clear correlation between the view of management and the views of employees on the operationalization of leadership.

Research hypothesis

Ho (Research), Leadership is not conceived and operationalized in the practice within the construction industry in South Africa.

The null hypothesis (Ho) is rejected.

Ha1 (Research), Leadership is negatively conceived and not effectively operationalized

The alternative null hypothesis (Ha1) is rejected.

Ha2 (Research), Leadership is positively conceived and effectively operationalized.

The alternative hypothesis (Ha2) is accepted because data analysis revealed that Leadership is positively conceived and effectively operationalized in the construction industry in South Africa.

CONCLUSIONS

The study revealed that most construction companies perceive leadership in the construction industry in South Africa to be a mixture of transactional and transformational leadership but is more transactional by nature. Management and employees in the construction industry believes that leadership is 'the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organization. It is further believed that management is an authority relationship that exists between a manager and subordinates to produce and sell goods and services and that management and leadership are not mutually exclusive. The majority of managers and employees believes that most immediate supervisors are managers instead of leaders. Both management and employees believes that their leaders has the ability to understand complex issues and makes good decisions.

Transactional leaders focus mainly on the physical and the security needs of subordinates. Leaders must clarify the expectations and offer recognition when goals are achieved. *Management-by-exception (active).* The leader specifies the standards for compliance, as well as what constitutes ineffective performance, and may punish subordinates for being out of compliance with those standards. *Management-by-exception (passive).* Passive leaders avoid specifying agreements, clarifying expectations and standards to be achieved by subordinates, but will intervene when specific problems become apparent. Laissez-faire style is associated with dissatisfaction, unproductiveness and in effectiveness(Deluga, 1992).

The study revealed further revealed that employees and managers feels that leaders has to understand complex issues which enables them to utilize opportunities and solves difficult problems. Leaders has the ability to control their emotions but sometimes act selfishly and do not admit to making mistakes. Leaders influence employees to persist under difficult or complex conditions in order to achieve set objectives. Leaders are able to handle high demands when taking responsibility. Leaders act ethically and deals well with conditions of uncertainty which make them respect their leaders more. Most managers and employees are happy working for their current supervisors and is optimistic about the future of their current employment.

Transformational leader encourages subordinates to put in extra effort and to go beyond what they (subordinates) expected before (Burns, 1978). The subordinates of transformational leaders feel trust, admiration, loyalty, and respect toward leaders and are motivated to perform extra-role behaviours (Bass, 1985; Katz and Kahn, 1978).Transformational leaders achieve the greatest performance from subordinates since they are able to inspire their subordinates to raise their capabilities for success and develop subordinates' innovative problem solving skills (Bass, 1985; Yammarino and Bass, 1990). This leadership style has also been found to lead to higher levels of organizational commitment and is associated with business unit performance (Barling et al., 1996). (S.O Ogunlana,K Limsila, 2008,p164)

Other studies have noted that construction managers are hardly perceived as leaders (Russell and Stouffer, 2003). Toor and Ofori (2008a,b,c) have also lamented on dearth of leadership research in the sector. They assert that the sector has paid too much attention on “management” to the exclusion of “leadership”. Studies of site managers suggest that they experience their work life as problematic in terms of needing to juggle a multiplicity of activities and because they have to perform a work role wherein it is essentially problematic to predict forthcoming events and occurrences (Styhre and Josephson, 2006; Mustapha and Naoum, 1998; Davidson and Sutherland, 1992). Ethical challenges comprise corruption in both developing and industrialized countries and fraudulent and unethical professional practices (Toor SR, Ofori G,2006). (Shamas-ur-Rehman Toor *, George Ofori, 2007).In the context of projects, the relative balance between management and leadership can be said to favour management. The reason is that, in the case of general leadership, vision plays a significant role. However, the goal of a project is generally well-defined. As consequence, the role of a project manager has focused much on managerial activities such as planning, monitoring, and controlling, rather than on creating a vision. In addition to management and leadership roles, another important distinction worth noticing is the distinction between the internal role and the external role. (Ralf Muller , J. Rodney Turner, 2006a) Alternatively said, the work of project leaders can be described as a combination of managerial roles and leadership roles, as well as internal and external roles – all with complex relationships. (Ralf Muller , J. Rodney Turner, 2006a)

On the most general level of analysis, leadership can be demarcated into the two roles of management and leadership (Fiedler FE, 1967; Frame JD, 1987; Goleman D, Boyatzis RE, McKee A, 2002; Hair J, Anderson RE, Tatham RL, Black WC,1998) Typically, management deals with planning, budgeting, controlling, and structuring (i.e. to manage complexity). In contrast, leadership refers to a process of directing,

visioning, and motivating: including visioning, coordinating, motivating, and the development of individuals (i.e. to manage change) (Frame JD, 1987).

However, based on the work of Dulewicz and Higgs (Dulewicz V, Higgs MJ,2003) and interview results (Ralf Muller , J. Rodney Turner, 2006a) predict that they would find a transformational leadership style preferred on complex change projects and a transactional style preferred on simple, engineering projects.) Conclusions drawing from this research tend to agree with research that was done by Ralf Muller and J. Rodney Turner.

In a survey on leadership for mega project, Toor and Ogunlana (Toor SR, Ogunlana SO,2006) observed that the attributes of transformational leaders were rated high as compared to those of transactional leaders. They also observed that the use of authority and punishment was rated among the lowest of leadership behaviors. Above research studies show that there is no agreement on what leadership style best suits the construction professionals and project managers. This is arguably understandable because no leadership style can be considered to be the best in all circumstances and at all times (Fiedler FE, 1967, Blake RR, Mouton JS), and context is a vital factor for the success and effectiveness of any particular leadership style (Fellows R, Liu A, Fong CM, 2003;p21).

Employees and manager feels that leadership is operationalized in such a way that supervisors are effective leaders by continuously creating ways to increase efficiency. Traits (starting with the most important and ending with the least important) like; self-confidence, motivation, stability , intelligence, abilities, integrity, sensitivity to others, high energy, flexibility ,dominance, and locus of control are key for supervisor to be effective leaders. Competencies (starting with the most important and ending with the least important) like; manage and control, communication, honesty and Integrity, problem solving and analysis, strategic capability and leadership, knowledge management, people management and empowerment, programme and project management, service delivery, client orientation and customer focus, financial management, change management, innovation champions are important for a supervisor to be an effective leader in the construction industry. An effective manager has to modify, change or adapt his natural character to suit different purposes and conditions (Beer, 1990:p11-12).This approach assumes that a finite number of individual traits of effective leaders could be found. Although some studies have reported that these traits contribute to leadership success, leadership success is however neither primarily nor completely a function of these or other traits (Gibson et al., 2000:p275).

Leadership development is very important for the sustained operation of companies. Most companies have leadership development programmes which is linked to business objectives and strategies. Most manager and employees feel valued as an employee. Furthermore, most of the leadership styles which are offered in the leadership literature do not consider questions such as: how the leader develops a particular style, why the leader chooses to adopt a certain style; why some styles work within some teams but fail within others under similar conditions; whether there is an ideal set of qualities to constitute a best leadership style; how a leader switches from one style to another; whether it is possible to retain credibility by switching styles frequently; and how a leader can have several styles at the same time if he is working on different projects with different teams under different set of circumstances. To address these questions, it is necessary to recognize the ‘‘root construct’’ of leadership which can provide a broader base for understanding leaders, leadership and leadership development. George(George B,2003)and Luthans and Avolio (Luthans F, Avolio BJ, 2003, p.241–58) presented the construct of ‘‘authentic leadership’’ as a solution to contemporary leadership challenges and future leadership demands. While advocating the need for a new form of leadership, George (George B,2003) argues that every individual is unique with a distinctive set of personal values, life history, professional and personal experiences, and future motivations. Leaders can learn from others’ experiences (George B, 2004, p31, 29–35.) but they can not perfectly imitate them without looking foolish and exposed in front people (George B, Sims P, McLean AN, Mayer D, 2007;85(2):p129–38). Based on this, project managers need to have a unique and authentic leadership style that is coherent with their personality and is consistent with their personal values and motivations.

RECOMMENDATIONS

The changes witnessed in construction businesses are set to continue, with such ongoing change promising to be multi-dimensional, multi-level, discontinuous and radical. The traditional behavior of construction project managers that is primarily due to several factors which are inherent in the construction industry must be transformed to meet challenges facing the construction industry. There is the need for a shift in the way project managers function and lead projects. They need to develop as authentic leaders to successfully operate in the increasingly complex working environment. Within a fast changing construction industry, there is mounting pressure on project managers to do more with fewer people and less resources. Under such circumstances, the people-side of project management, or what many would call leadership, is paramount to the successful delivery of desired results. (Shamas-ur-Rehman Toor *, George Ofori.2007)

The transformational leadership style has significant relationships with work quality, work quantity, and creativity in problem solving of subordinates. Moreover, it has significant relationships with leadership outcomes; viz. effectiveness in work, satisfaction, extra effort and organizational commitment. By using the results, leaders can adjust their behaviours in practical ways to enhance subordinates' organizational commitment and job performance, thereby reaping increased productivity for their organizations as a consequence.

The transformational leadership style is regarded as a highly effective style when compared with transactional and laissez-faire factor but supervisors of project managers need to be aware that different leadership styles exhibited by the project manager are appropriate on different types of projects. Managers need to be aware of the needs of projects in their organization, develop individuals for pool of available project managers with appropriate styles for projects in their organization, and choose managers from that pool with appropriate styles for the projects at hand (Ralf Muller, J. Rodney Turner, 2006) A number of management writers advocate the use of coaching as a systematic leadership-training program. However, the literature on coaching suffers from a lack of systematic research which shows the alleged benefits of the proposed approach. (Alexander Styhre,p275, 2007) The author would like to articulate the need for authentic leadership development in construction managers and argues that authentic leadership must be embedded in the organizational culture so as to maximize the positive outcomes and achieve a veritable organizational performance. Organizations with authentic project leaders will have a sustainable competitive advantage over their competitors in the form of veritable performance and sustained growth. However, a major challenge here is to further the research on how to develop authentic leadership in individuals. (Shamas-ur-Rehman Toor *, George Ofori.2007) To achieve this, the current author calls for an extensive research exercise, multi-level and multi-dimensional research designs, and country-wide collaborations to explore authentic leadership across the global construction industry.

RECOMMENDATIONS FOR FUTURE RESEARCH-Emerging from this study is the need for further studies in several directions. If transformational leadership may be effectively used when dealing with professional employees but transactional leadership may be more suitable when project managers deal with technicians or site workers needs to be investigated. A study clarifying this would seem to be appropriate. (S.O Ogunlana,K Limsila, 2008,p177)

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