

Gordon Institute of Business Science

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The relationship between leader-member exchange and project success in a projects environment

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ABSTRACT

The world economy has become increasingly reliant on project revenues as a contributor to growth, South Africa has followed this global trend due to limited opportunities and stumbling GDP growth. With the success of projects becoming increasingly reliant on the performance of project personnel, there is a need to investigate the relationships that may impact this performance. Therefore, this study explored the relationship that project personnel-project manager interactions and project personnel-project organisation interactions have on project success in a South African projects environment. These relationships were explained by the constructs leader-member exchange, perceived organisational support, affective commitment and discretionary effort.

A quantitative study was performed using an internet survey, where project personnel and project managers currently working in a projects environment were considered as valid responses. A total of 181 useable responses were statistically analysed using multiple linear regression to determine if the constructs had a significant predictive relationship with project success.

The key findings of the study observed that leader-member exchange, perceived organisational support and affective had a significant predictive relationship with project success. A further outcome was that perceived organisational support had a moderating effect on the relationship between leader-member exchange and project success. These findings confirmed the importance of leader-follower-organisation relationships in a projects environment.

Keywords

Leader-member exchange, perceived organisational support, affective commitment, discretionary effort, project success, project personnel

DECLARATION

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

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Preneshen Naidu

6 November 2017

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CHAPTER 1: INTRODUCTION TO RESEARCH PROBLEM

1.1 Research Title

The relationship between leader-member exchange and project success in a projects environment

1.2 Introduction

The global economy grew at 3.4% in 2016 and is estimated to grow at 3.7% in 2017 (IMF, 2016). However, the South African economy has stumbled in recent years with 0.5% growth in 2016 and an estimated 1.3% for 2017 (National Treasury Republic of South Africa, 2017). This is mainly due to labour issues, a struggling rand, volatility of resource prices and investors retreating from emerging markets. How is the global economy growing? Is there a trend to focus on certain sectors of the economy? Can South Africa replicate these trends?

Müller, Rodney Turner, & Turner, (2010) state that 20% - 30% of the world economy is based on projects highlighting its importance and high contribution to growth. Given this large influence on the global economy there should be more emphasis on project management and more importantly project success to achieve and surpass current growth goals (Dilek, O.G.; Sitki, 2016). Project literature stresses that both the global economy and organisations are reliant on successful projects for sustainability by suggesting “the success of individual projects impacts the wider organisation in several dimensions and makes the concept of project and project management success that much more relevant” and therefore should be a key focus of organisations (Jugdev & Müller, 2005, p. 19).

Davis, (2017) suggests that there are four success dimensions that project managers and users/clients agree on – communication, time, stakeholder satisfaction and cost/budget with the majority of these success dimensions are heavily reliant on the employees contribution to the project and the people skills of the project manager. It is further argued that the personnel factor has a significant impact on project success, with effective leadership and employee commitment being noted as the basic requirements for project success therefore highlighting the importance of the inter-relationship between project personnel and project managers (Belout & Gauvreau, 2004; Famakin & Abisuga, 2016). The uniqueness of this interaction that occurs between project personnel (follower) and project manager (leader) results in contrasting relationships being developed which can be explained by leader-member exchange theory (Gerstner & Day, 1997; Lunenburg, 2010). Leader-member exchange theory focuses on the unique dyadic relationships formed between followers and leaders, where the quality of the leader-member exchange affects the behavioural outcomes of followers with high-

quality exchanges leading to improved job performance, reduced turnover intentions and increased organisational citizenship behaviour (Dulebohn, Bommer, Liden, Brouer, & Ferris, 2012).

The importance of project success and leader-member exchange has been highlighted, with the positive effects of both leading to organisational success thereby contributing to the South African economy.

1.3 Research Problem

According to KPMG, (2017) 31% of organisations are likely to deliver projects on time, 29% of organisations are likely to deliver projects on budget, 33% of organisations deliver projects that are likely to meet the original goals or business objectives and 34% of organisations deliver projects that are likely to achieve stakeholder satisfaction. With the global economy and organisations heavily reliant on the success of projects Müller et al., (2010), the abovementioned success rate (or lack thereof) does not bode well for the economy or business at large.

Project organisations and project managers are faced with the challenge of sustained projects success goals, therefore a holistic approach is required to address this problem with contributions from the organisation and the personnel factor (Belout & Gauvreau, 2004; Dilek, O.G.; Sitki, 2016). Wayne, Shore, & Liden, (1997) suggested a social exchange perspective through leader-member exchange (leader-follower relationship) and perceived organisational support (follower-organisation relationship) which influences employee behaviour thereby potentially resulting in positive outcomes for the organisation. Hubbard D., (1990) confirmed this approach as numerous project failures are related to issues around leader-follower relationships.

The challenge of a stagnant South African economy has been highlighted and how focus on projects can contribute to increasing growth to counter this stagnation. Growth from projects will only occur if they are executed successfully and this is heavily reliant on the interrelationships of project personnel with their supervisors, and the organisations they work for. For this reason, this study sought to understand the nature of these relationships and confirmation of whether a positive association exists. The author introduced leader-member exchange, affective commitment, positive organisational support, discretionary effort as constructs to examine these relationships and the impact they have on project success.

1.4 Purpose of Study

South African organisations have started to feel the burden of a slowing economy, and have become heavily reliant on project execution for revenues. Successful projects for these revenues are critical, where project success is proposed to be influenced by the relationships between project personnel and their project managers, and project personnel and their organisations. There is extensive literature on the leader-follower-organisation relationships in a conventional work setting, however limited literature exists on the examination of the leader-follower-organisation relationships in a projects environment. Therefore, this study aims to explore the relationship that employee-manager (project personnel-project manager) interactions and employee-organisation (project personnel-project organisation) interactions have on project success in a South African projects environment.

1.4.1 Benefits to business

The importance of project success to the South African economy is noted, however, it still remains to be established how organisations can improve the success rate of their projects.

With the personnel factor becoming more important in its contribution to organisations and specifically project success, this study aims to explore the personnel factor through the understanding of how the supervisor and subordinate relationships with the organisation leads to project success (Belout & Gauvreau, 2004). This will aid business in employing practices that will strengthen these relationships, and to duplicate them in project environments that currently struggled to achieve.

1.4.2 Benefits to research

The constructs of leader member exchange, perceived organisation support, affective commitment, discretionary effort were formed from the basis of social exchange theory and organisational support theory and studied in a conventional organisational setting (Cropanzano & Mitchell, 2005; Kurtessis et al., 2015). This study aims to investigate these constructs and the possible influence that they may have on employee-manager and employee-organisation relationships in a projects environment, as this would contribute to the current body of knowledge.

1.5 Summary

This study attempted to understand if the relationship that project personnel have with their project managers and organisations would influence project success. The study therefore included the constructs of leader-member exchange and perceived as these constructs

describe the employee-management and employee-organisation relationships. Two further employee behaviours of affective commitment and discretionary effort were also included in the conceptual model due to their positive outcomes and potential influence on project success. The four constructs have been studied previously either individually or in some combination in an organisational setting, but to the researcher's knowledge not all constructs were included in a study set in a South African projects context.

1.6 Structure of Research

This research document is presented in seven chapters which are briefly outlined below:

Chapter one: introduces the research topic, discusses the research problem and purpose of study. The structure of the document is outlined.

Chapter two: gives the theoretical background of the constructs introduced in chapter one. The need for the research is argued by presenting existing academic literature highlighting the knowledge gaps and a conceptual model introduced.

Chapter three: states the hypotheses for the study of the proposed conceptual model.

Chapter four: explains and defends the research methodology selected for the study.

Chapter five: presents the results and analysis of the primary data collected using the methodology stated in chapter four.

Chapter six: discusses the empirical findings of chapter five relative to the academic literature presented in chapter two.

Chapter seven: presents the principal findings of the research and the implications for personnel working in a projects environment. Limitations of the study are presented and as well as future research areas.

CHAPTER 2: THEORY AND LITERATURE REVIEW

2.1 Project Success

The success of individual projects and the impact it has on organisations are making the concept of project success more relevant, especially with the approach of business focusing more on meeting organisational success through project execution (Dilek, O.G.; Sitki, 2016; Jugdev & Müller, 2005). Shenhar, Dvir, Levy, & Maltz, (2001) suggest that project success goals, due to its stated relevance, align with organisational goals and top-management decision-making, however for business to prioritise project success they would need to be able to define project success and understand what organisational elements/behaviour would enable project success.

Project success has been researched since the advent of project management but no consensus has been reached on its definition, how it is measured and the factors affecting it (Cooke-Davies, 2002; Ika, 2009; Jugdev & Müller, 2005; Pinto & Slevin, 1987; Turner, J.R., Zolin, 2012). The concept of project success can be complex and ambiguous, however majority of previous studies have defined project success as a project that has met its time, budget and quality goals (Chan, Scott, & Lam, 2002; Shenhar et al., 2001). Pinto & Slevin, (1988) agreed with this definition but argued that client satisfaction is an important criterion that should also be included in the definition and measure of project success.

The traditional view of using time, budget and quality to explain project success stems from “the triangle of objectives” (or iron triangle) with each corner of the triangle representing time, cost and the quality of the project (Barnes, 1988). Turner, J.R., Zolin, (2012) however, suggested that the performance of the project through its outcomes and impacts were also relevant as this led to desired business objectives. A good example of this is the Sydney Opera House, its construction failed to meet time and budget goals, but is still seen as a successful project as it eventually met the desired outcomes of being a multi-functional venue and one of the most famous buildings globally (Steinfort & Walker, 2007).

Shenhar et al., (2001) argues that project success is a multidimensional concept and cannot be viewed in isolation from either the organisational or customer perspective, hence they propose four dimensions to assess project success: project efficiency; impact on customer; business success and preparing for the future. All four of these dimensions have the human resources element as a common factor, this suggests that human resources will play a contributory role to project success (Belout & Gauvreau, 2004). Belout & Gauvreau, (2004) confirms the importance of human resources in organisational success and proposes that this

factor would have a similar effect on project success.

Famakin & Abisuga, (2016) argue that the projects industry can be a stressful environment which can reduce the commitment of employees, however the relationship that leaders have with their workers and their leadership style can influence the affective commitment (AC) of the employee. Affective commitment, or the emotional attachment of the employee to the organisation, is positively influenced by supportive leadership behaviour which in turn increases the commitment of employees to the project resulting in project success (Allen & Meyer, 1990b; Famakin & Abisuga, 2016). This positive outcome, as a result of the supportive leadership behaviour, may lead to an exchange relationship such as leader-member exchange (LMX) if the employee views the support solely from the leader or perceived organisation support (POS) if the employee believes the leader is acting on behalf of the organisation to provide support (Cropanzano & Mitchell, 2005; Wayne et al., 1997). Frenkel & Bednall, (2016) argues that future career benefits as implied by the receipt of past benefits, such as supportive leader and organisation behaviour, may lead the employee to discretionary effort (DE) due to obligatory feelings towards the leader or organisation. Therefore leader-member exchange, perceived organisational support, affective commitment and discretionary effort are noted as important factors that may affect project success (Allen & Meyer, 1990b; Cropanzano & Mitchell, 2005; Famakin & Abisuga, 2016; Frenkel & Bednall, 2016; Wayne et al., 1997).

2.2 Leader-Member Exchange

Leader-member exchange (LMX) refers to the vertical dyadic relationships formed between leaders and followers, these relationships are believed to be unique in nature and vary in quality (Dansereau, Graen, & Haga, 1975). There is increasing interest in LMX due to its influence on work performance, employee outcomes and organisational citizenship behaviour (Cropanzano & Mitchell, 2005; Dulebohn et al., 2012; Lawrence & Kacmar, 2012; Luo, Biao; Cheng, 2014).

Leader-member exchange has its basis drawn from social exchange theory which focuses on obligation and reciprocity (Blau, 1964; Gouldner, 1960). Blau, (1964) suggested that there is an obligation on the part of the subordinate to reciprocate high-quality relationships. The norm of reciprocity further suggests that individuals feel obliged to assist those who have previously assisted them (Gouldner, 1960). Cropanzano & Mitchell, (2005) support these views but argue that the direction of the relationship is not clear, questioning whether the exchanges alter the nature of relationships or does the relationships alter the nature of exchanges? Cropanzano & Mitchell, (2005) suggest that leaders initially signal an offer for a more supportive

relationship and if followed by a subordinate's favourable response this can lead to a high-quality leader-member exchange relationship this is noted as the initial exchange, thereafter the nature of future transactions is dictated by the quality of relationship established.

Dansereau, Cashman, & Graen, (1973) propose vertical dyad linkage as an alternate to the traditional average leadership style. Average leadership style is when leaders adopt the same leadership style for all employees, whereas with vertical dyad linkage the leader develops a unique relationship with each subordinate (Dansereau et al., 1975; G. Graen & Cashman, 1975; Liden & Graen, 1980). Employee behaviour is influenced by these unique relationships and can result in better organisational citizenship behaviour and improved in-role behaviour (Settoon, Bennett, & Liden, 1996).

The progression of leader-subordinate relationship from the vertical dyad linkage relationship to LMX can be explained through four stages: 1) identification of different dyads 2) focus on the leader-follower relationship and its effect on the organisation through LMX relationships 3) description of how dyadic relationships are formed 4) expansion of dyadic partnership to different levels of the organisation (George B. Graen & Uhl-Bien, 1995). The development of LMX emphasises the importance of leader-subordinate relationships, versus individual behaviours, and how these relationships can influence the organisations that they exist in.

Leaders choose to have either a leadership or a supervisory effect on their subordinates based on their respective unique relationship (Dansereau et al., 1975). Dansereau et al., (1975) argue that supervisory effect relationships are based on authority which adheres strictly to job requirements with minimal social exchange, while leadership interactions are based on influence without authority and exchanges went beyond the scope of the job including job latitude, open communication and support of member's actions. Wang, Law, Hackett, Wang, & Chen, (2005) elaborate further by stating that supervisory effect relationships result in low-quality exchanges or low LMX, while the leadership based relationships result in high-quality exchanges or high LMX. The quality of LMX relationships are important as they determine the level of job satisfaction, work autonomy and type of formal and informal rewards received, with subordinates of high LMX relationships experiencing better job satisfaction, increased work independence and more rewards than those in low LMX relationships (Lawrence & Kacmar, 2012). Dienesch & Liden, (1986) state that higher levels of trust, interactions and rewards are experienced by followers in high LMX relationships supporting the views of (Lawrence & Kacmar, 2012). Also Tastan, (2014), concluded that LMX quality has a positive significant relationship with job performance, where high LMX relationships result in better job performance.

George B. Graen & Uhl-Bien, (1995) describe LMX as having elements of transactional and transformational leadership traits, however a positive association only exists between LMX and transformational leadership (Krishnan, 2005; Lee, 2005). Transactional leadership, similar to the supervisory relationship explained earlier, is used to guide followers to meet goals as per the employee's work contract and therefore is still important (Bass, 1999). Robbins & Judge, (2013) believe that transformational leadership is based on the leader inspiring, motivating and creating trust relationships with followers. Krishnan, (2005) and Lee, (2005), suggest that leader behaviour and leadership style is an important consideration due to its association with LMX, however a multifaceted approach by including the individual dyadic relationships formed between leaders and followers, leader behaviour and follower behaviour need to be considered to obtain a more balanced understanding of the leadership process (George B. Graen & Uhl-Bien, 1995).

Dansereau et al., (1973) and Lunenburg, (2010) highlight the importance of identifying in-members and out members, also referred to as the in-group and out-group. In-group members displayed high-LMX relationships and had better opportunities due to the superior relationship with their supervisor (G. B. Graen & Scandura, 1987). When members have a high LMX relationship and in-group status, supervisors tend to exchange positional and personal resources, in the form of information, influence, tasks, latitude, support and attention, which can potentially affect future events in the work environment (G. Graen & Cashman, 1975; Lunenburg, 2010). Higher productivity, better job satisfaction, increased motivation and improved citizenship behaviour are some of the positive outcomes from in-group relationship exchanges (Chen, Lam, & Zhong, 2007). As such, leaders are encouraged to increase the size of the in-group to ensure more employees are exposed to these positive benefits, and the outcome behaviours exhibited by the in-group illustrate how leader-subordinate relationships can positively influence organisational outcomes (Lunenburg, 2010).

The relationship between leaders and subordinates and the effectiveness of the team is further affected by the manner in which the leader communicates with his subordinates, for it is suggested that subordinates are more receptive to the communication of negative feedback from their leaders when a high LMX relationship exists (Sniderman, Fenton-O'Creevy, & Searle, 2016). Sniderman et al., (2016) believe that this positive form of communication assists in the correction of work behaviours which can lead to organisational effectiveness. Kacmar, Witt, Zivnuska, & Gully, (2003) support the importance of leader-follower communication by suggesting that the frequency of communication plays a role in job performance ratings, where frequent communication between follower and supervisor in a high-LMX relationships results in better job performance ratings compared to poorer ratings by infrequent interactions.

However, negative effects are experienced by followers in a low-LMX relationship when negative feedback or frequent communication is displayed resulting in poor receptiveness of communication and less favourable job performance ratings respectively (Harris, Wheeler, & Kacmar, 2009; Sniderman et al., 2016). Harris et al., (2009); Sniderman et al., (2016) therefore support the concept of good leader-follower communication which can only be achieved when a significant level of trust and respect is present in the subordinate-supervisor relationship (George B. Graen & Uhl-Bien, 1995).

2.2.1 Leader-Member Exchange and Project Success

Research has shown that LMX has an important effect on task performance, satisfaction, turnover intentions and organisational commitment (Gerstner & Day, 1997; Wallace, Chernatony, & Buil, 2013). Further to this, a comprehensive empirical study of the antecedents and consequences of LMX quality found that LMX is significantly related to the consequences of turnover intentions, organisation citizenship behaviour (OCB), job performance and overall organisational commitment (Dulebohn et al., 2012). The conclusions from the aforementioned studies emphasise the influence that LMX has on employees, their respective supervisors and the organisations (through subordinates' performances). The researcher has sought to investigate if the same relationship and outcomes occurs in a projects environment, do project personnel contribute to project success through their respective relationships with their leaders?

The findings on LMX have never been tested in developing economies like South Africa, nor have they been tested in a projects context. Thus, this study was conducted in one of Africa's most developing economies and the aforementioned assumptions were tested.

2.3 Perceived Organisational Support

Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, (1986) support the social exchange view whereby employees' commitment to the organisation is influenced by the commitment and fair treatment exhibited by the organisation towards its employees. This belief that the organisation cares about employees is known as perceived organisational support (POS), and it is based on the social exchange, norm of reciprocity and organisational support theories (Blau, 1964; Cropanzano & Mitchell, 2005; Gouldner, 1960; Kurtessis et al., 2015). The perceived organisational support construct suggests that if employees perceive the organisation to be caring for them, they would in turn develop organisational commitment towards it and a feeling of obligation to serve the organisation by employees is then realised (Wayne et al., 1997).

Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, (1986) describe perceived organisational support as how an organisation makes an employee feel and whether the employer truly values the relationship. Rhoades & Eisenberger, (2002) support this description and propose that organisational policies and rewards contribute to the way an employee feels, whereby rewards seen as voluntary action contribute more to perceived organisational support than if caused by legal or mandatory policy (Linda Rhoades & Eisenberger, 2002). Also supervisors are seen as organisations representatives so favourable treatment from them also should contribute to perceived organisational support (Linda Rhoades & Eisenberger, 2002). Training is another factor that positively contributes to the development of employees and gives them a sense that the organisation cares for them, therefore employees who participated in frequent development experiences, including formal and informal training, resulted in higher POS (Wayne et al., 1997).

Employees value perceived organisational support as it meets their need for approval which enhances their esteem and sense of belonging which provides relief during stressful work periods (Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, 1986; Robert Eisenberger, Malone, & Presson, 2016). Perceived organisational support serves as both a socio-emotional and need-fulfilling role resulting in an obligation to reciprocate this feeling to the organisation thus benefitting the organisation through improved employee performance and organisational citizenship behaviour due to the obligation that employees have with their organisation (Baran, Shanock, & Miller, 2012).

Eisenberger, R., Armeli, S., Rexwinkel, B., Lynch, P.D. and Rhoades, (2001); Neves & Eisenberger, (2014) suggest that higher perceived organisational support also allows increased employee risk-taking behaviour, through continued support although the employee did not meet the required standards of the organisation, which can lead to higher potential payoffs for the organisation. High perceived organisational support provides assurance the subordinate will not face any harm directed towards them if they are engaged in behaviours aimed at materialising the project, the organisation will be tolerant and understanding of their mistakes.

It is suggested that perceived organisational support is related to other positive outcomes for both employees and organisations, such as a reduction in absenteeism and employees readily prioritising organisational goals (Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, 1986; Robert Eisenberger et al., 2010). When employees experience high perceived organisational support through fair treatment, supervisor support and favourable reward conditions, they experience more job satisfaction, are better connected with the organisation, and are more likely to see organisational goals as their own leading to loyalty and improved

commitment to the organisation (Robert Eisenberger et al., 2016; Linda Rhoades & Eisenberger, 2002). It can be argued that these positive outcomes of positive job satisfaction, better job performance, organisational commitment and improved job involvement are a consequence of perceived organisational support which lead employees to better work performance and a step towards organisational goals being met (Jain, Giga, Cooper, & Cooper, 2013; Kurtessis et al., 2015; Linda Rhoades & Eisenberger, 2002).

Effective communication with employees, in the form of openness and transparency, is a critical element for perceived organisational support to occur, as communication affects performance and it signals to the employee that the organisation cares for them (Neves & Eisenberger, 2012). Therefore, open communication strengthens the employees perceived organisational support increasing their reciprocity behaviour leading to favourable results for the organisation (Neves & Eisenberger, 2012).

2.3.1 Perceived Organisational Support and Project Success

There are numerous studies on project success and the working conditions for employees in projects, however there is little investigation from the perceived organisational support perspective (Gällstedt, 2003; Ika, 2009; Müller et al., 2010; Turner, J.R., Zolin, 2012).

Colakoglu, Culha, & Atay, (2010) conclude that perceived organisational support has a significant effect on job satisfaction. Further to this, employees who are satisfied with their jobs produce a better work performance which leads to organisational effectiveness (Robins, S.P. and Judge, 2013). In today's dynamic business environment, retention of employees assists in organisations becoming successful and even more important is that employees generally remain at an organisation due to perceived organisational support (Colakoglu et al., 2010; Liu & Liu, 2016). The retention of employees especially in the dynamic projects environment is critical, and turnover caused by dissatisfaction with the organisation negatively affects other project team members leading to performance issues ultimately resulting in project objectives being compromised (Parker & Skitmore, 2005). Although these findings suggest that the dissatisfactory relationship project members/personnel have with their organisation will eventually effect project outcomes, there is no direct measurement of the perceived organisational support construct and its effect on project success (Parker & Skitmore, 2005). Thus, this study will also focus on how the construct perceived organisational support affects project success.

Wayne et al., (1997) highlight the need for both leader-member exchange and perceived organisational support as they each explain a different relationship although both are based

on social exchange theories (Blau, 1964; Gouldner, 1960). Leader-member exchange is an exchange relationship formed between the employee and his/her supervisor, while perceived organisational support is an exchange relationship developed between the employee and his/her organisation. (Wayne et al., 1997) concluded that a positive reciprocal relationship exists between leader-member exchange and perceived organisational support, and based on the literature review leader-member exchange and perceived organisational support have a significant effect on organisational outcomes, however the researcher would like to understand if perceived organisational support moderates the stated relationship between leader-member exchange and organisational outcomes/project success.

Due to reciprocity, favourable treatment of employees creates an obligation towards the organisation and leads to employees providing additional effort (Eisenberger, R., Armeli, S., Rexwinkel, B., Lynch, P.D. and Rhoades, 2001; Frenkel & Bednall, 2016). A study by Dubinsky & Skinner, (2002) suggests that such a commitment and bond to the organisation could motivate employees to engage in discretionary effort. The author noted the additional efforts as discretionary effort and the reciprocation towards the organisation as perceived organisational support, and hence will aim to understand if a relationship exists between perceived organisational support and discretionary effort.

2.4 Affective Commitment

In project environments where there is an ever increasing demand for high-quality service, the commitment of employees is imperative for project success, however employee commitment is largely unknown in this context (Gilbert, Holdsworth, & Kyle, 2017). Although there is no universal definition of commitment, it has been suggested that organisational commitment is a psychological state that binds employees to the organisation (Allen & Meyer, 1990b). Allen & Meyer, (1991) further explain organisational commitment through the three-component model, where organisational commitment is influenced by three factors namely the desire to stay in organisation (affective commitment); the need to stay in the organisation (continuance commitment); and the obligation to stay in the organisation (normative commitment). These three components are about positive affection, identification and willingness to serve the organisation, which determines the employees' relationship with the organisation and whether they decide to stay or leave their employer (Jaussi, 2007). Affective commitment (AC) is further defined as the emotional attachment, involvement and identification that employees have with their employers whereby employees have a sense of belonging and identification which increases their willingness to participate in organisational activities and at the same time pursue organisation objectives (Allen & Meyer, 1990; Allen & Meyer, 1991).

Economic uncertainty, globalisation, rising competition with simultaneous increased expectations from various organisational stakeholders have led to growing focus on employee commitment and performance, and the drive to maximise the inputs of employees (Mercurio, 2015; Morrow, 2011; Rothmann, S., & Rothmann, 2010). Mercurio, (2015) further argue that affective commitment has been proved to positively shape employee attitudes which contributes to enhanced employee performance. Morrow, (2011) state that employee commitment, through affective commitment, is influenced by human resource practices such as performance appraisals, promotion opportunities, training and development and remuneration. Therefore the effect of human resource practices and affective commitment are both important due to their respective influence on employee commitment and employee performance (Mercurio, 2015; Morrow, 2011).

Affective commitment is also found to be predictive of major organisational consequences such as turnover, absenteeism, organisational citizenship behaviour and performance (Allen & Meyer, 1991; Mercurio, 2015; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002; Somers, 2010). This type of commitment has been seen to add the most value and benefits to the organisation Meyer et al., (2002), therefore leaders and organisations should focus on affective commitment to ensure high quality leader-follow relationships and better employee performance which should result in improved team performance in a project environment.

2.4.1 Affective Commitment and Project Success

Robinson, (2004) suggest that employees who have high affective commitment are those that will go beyond the call of duty for the good of the organisation. This positive engagement by employees leads to the most potential benefits for the organisation due to their improved performance (Somers, 2010). Affective commitment thus leads to better organisation performance by way off increased employee commitment and job performance (Mercurio, 2015; Meyer et al., 2002).

The emotional attachment of the employee to their organisation affects individual behaviours including absenteeism, turnover, performance and organisational citizenship behaviour (Mercurio, 2015; Meyer et al., 2002). The literature has associated affective commitment to organisational success, however currently there is no known studies linking affective commitment to project success in a South African context. Also, would the affective commitment of the employee lead to an effort beyond the scope of work duties leading to employee discretionary effort? Lastly, would the relationship between leader-member exchange and project success relationship discussed in section 2.2.1 be influenced by affective commitment?

2.5 Discretionary effort

Discretionary effort is described as the additional effort employees provide to the organisation and their work, beyond what is required by their job (R. Lloyd, 2003; Yankelovich & Immerwahr, 1984). Discretionary effort and organisational citizenship behaviour are both considered to be non-contractual employee behaviours which go beyond the scope of the job, however, the differentiating factor is that organisational citizenship behaviour is not applicable to all jobs whereas discretionary effort is applicable to all jobs making it a more viable measure of employee performance (Rosemarie Lloyd, 2008). Rosemarie Lloyd, (2008) further argues that the intervention of supportive human resource practices are required to influence discretionary effort, which ultimately has an impact on organisational effectiveness.

Discretionary effort results from employees' felt obligations, which is mainly explained by social exchange theory and reciprocity, also employees with favourable expectations of career expectation, training and promotion opportunity and career justice are likely to provide additional effort leading to discretionary effort (Frenkel & Bednall, 2016). Eisenberger, R., Armeli, S., Rexwinkel, B., Lynch, P.D. and Rhoades, (2001) suggest that this additional effort by employees is repayment of an obligation due to favoured treatment by the organisation. Frenkel & Bednall, (2016) further suggests that employees base their exchanges and obligations on future focused activities where training and promotional opportunities signal to employees that the organisation is willing to invest in their careers. These studies present an opportunity to debate whether the future focused approach or the more traditional view is relevant to a projects environment.

2.5.1 Discretionary Effort and Project Success

Discretionary effort is viewed as the additional effort that employees offer their organisations, which is beyond the expected responsibility of their job requirements (Rosemarie Lloyd, 2008; Yankelovich & Immerwahr, 1984). Discretionary effort is sought after as it is seen as an alternate approach to gain organisational success through increased employee performance (Dubinsky & Skinner, 2002).

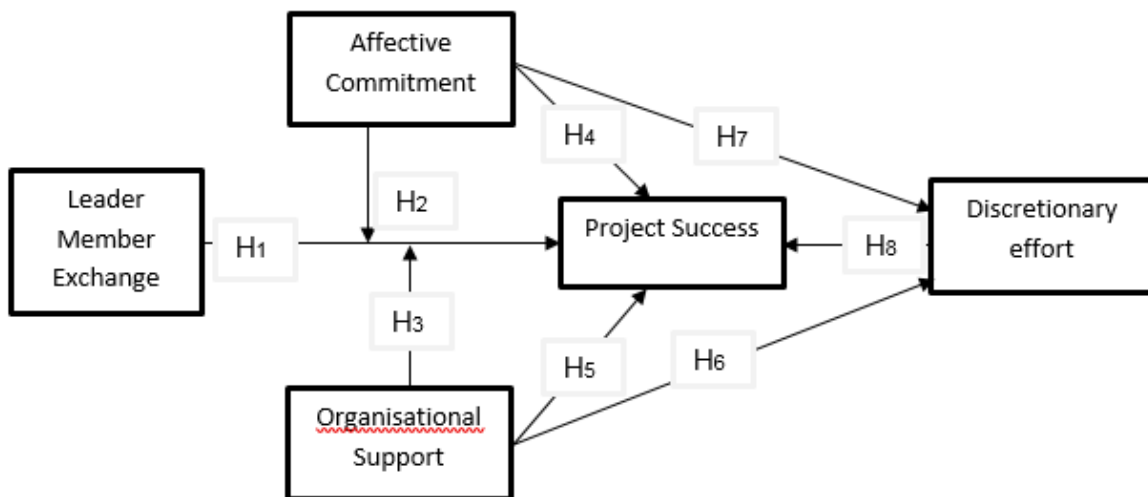
Organisations are increasingly become more reliant on project success due to projects being one of the main contributors to the global economy (Jugdev & Müller, 2005; Müller et al., 2010). The human resource factor, including employee relationships with their supervisors, plays a vital role in organisational/project success (Belout & Gauvreau, 2004; Davis, 2017; Famakin & Abisuga, 2016).

It is evident from the above literature that organisations are under pressure to perform better, project success and the additional effort from employee performance (human resource factor) have been suggested as possible areas to assist with this higher expectation. The reviewed literature has approached these areas individually or from an organisational perspective not from a projects context, this gap motivates the current study to investigate the relationship of additional effort or discretionary effort of employees with project success.

2.6 Conceptual Model

Leader-member exchange (LMX) was selected as the main theme of the study due to its foundations in social exchange theory, and the reciprocity traits that are relevant to the employee-manager relationship (Cropanzano & Mitchell, 2005). The remaining three constructs of perceived organisational support (POS), affective commitment (AC) and discretionary effort (DE) have a closer link to organisational support theory which also relates to social exchange theory (Kurtessis et al., 2015). The researcher proposed the conceptual model in figure 1 based on the literature presented and will test the relationships of the constructs on project success concurrently due to the positive reciprocal relationship that LMX has with POS Wayne et al., (1997), and the predictive effect that POS has on AC and DE (Kurtessis et al., 2015; Neves & Eisenberger, 2012).

Figure 1: Conceptual model



CHAPTER 3: RESEARCH HYPOTHESES

3.1 Introduction

The purpose of this research is to understand the relationship that employee-manager interactions and employee-organisation interactions have on project success in a South African projects environment. This purpose is summarised into three objectives:

1. Understanding the employee-manager interactions on project success.
2. Understanding the employee-organisation interactions on project success.
3. Understanding the effect of employee-organisation interactions on employee-manager interactions relating to project success.

To answer these three objectives, eight hypotheses were formulated using the constructs discussed in chapter two: leader-member exchange, perceived organisational support, affective commitment and discretionary effort.

3.2 Research Hypotheses

Hypothesis one

- **Null hypothesis one (H1₀):** No significant relationship exists between leader-member exchange and project success in a projects environment.
- **Alternate hypothesis one (H1₁):** A significant relationship exists between leader-member exchange and project success in a projects environment.

Hypothesis two

- **Null hypothesis two (H2₀):** The relationship between leader-member exchange and project success is not moderated by affective commitment in a projects environment.
- **Alternate hypothesis two (H2₁):** The relationship between leader-member exchange and project success is moderated by affective commitment in a projects environment.

Hypothesis three

- **Null hypothesis three (H3₀):** The relationship between leader-member exchange and project success is not moderated by perceived organisational support in a projects environment.

- **Alternate hypothesis three (H3₁):** The relationship between leader-member exchange and project success is moderated by perceived organisational support in a projects environment.

Hypothesis four

- **Null hypothesis four (H4₀):** No significant relationship exists between affective commitment and project success in a projects environment.
- **Alternate hypothesis four (H4₁):** A significant relationship exists between affective commitment and project success in a projects environment.

Hypothesis five

- **Null hypothesis five (H5₀):** No significant relationship exists between perceived organisational support and project success in a projects environment.
- **Alternate hypothesis five (H5₁):** A significant relationship exists between perceived organisational support and project success in a projects environment.

Hypothesis six

- **Null hypothesis six (H6₀):** No significant relationship exists between perceived organisational support and discretionary effort in a projects environment.
- **Alternate hypothesis six (H6₁):** A significant relationship exists between perceived organisational support and discretionary effort in a projects environment.

Hypothesis seven

- **Null hypothesis seven (H7₀):** No significant relationship exists between affective commitment and discretionary effort in a projects environment.
- **Alternate hypothesis seven (H7₁):** A significant relationship exists between affective commitment and discretionary effort in a projects environment.

Hypothesis eight

- **Null hypothesis eight (H8₀):** No significant relationship exists between discretionary effort and project success in a projects environment.

- **Alternate hypothesis eight (H8₁):** A significant relationship exists between discretionary effort and project success in a projects environment.

3.3 Conclusion

The abovementioned eight hypotheses have been identified to examine how employee-manager and employee-organisation interactions relate to project success in a South African projects environment. The next chapter sets out the research methodology and design used to test the stated hypotheses.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 Research Design

This chapter discusses the research methodology and design that will be used to test the eight research hypotheses stated in chapter three. The chapter ends with limitations of this research study. Saunders & Lewis, (2012) describes research methodology as an important process that allows the researcher to answer research questions and test the stated hypotheses.

The purpose of this research was to determine whether there is a relationship between the constructs leader-member exchange, perceived organisational support, affective commitment, discretionary effort and project success. The research method adopted to conduct this research study was quantitative. To obtain data on defined topic areas, using quantitative methods, the researcher was required to pose the same questions in the same sequence to various respondents. This data can be analysed statistically to describe or explain a contributory relationship between two or more variables (Saunders & Lewis, 2012).

The research was cross-sectional in design, due to data being collected at a specific point in time (Zikmund, Babin, Carr, & Griffin, 2010).

In summary, the research was quantitative and cross-sectional in design.

4.2 Population

The population for the study consists of all project personnel (subordinates, supervisors and project managers are included) that work in South Africa. There was no restriction on organisation or industry. Previous studies have focused on the construction and engineering sectors, the author decided to keep the study open to all types of project environments to enable a varied response and therefore the results could potentially be generalised to the projects sector at large.

It is not mandatory for project personnel in South Africa to be affiliated to any Project management association, therefore it would be difficult to identify and contact all individuals of the defined population.

4.3 Unit of Analysis

“The unit of analysis for a study indicates what or who should provide the data and at what level of aggregation” (Zikmund et al., 2010, p. 119). The data gathered were from project personnel working in South Africa. The unit of analysis was the relationship between project

subordinates with their respective project managers and the respective organisations worked for.

4.4 Sampling Method and Size

Saunders & Lewis, (2012) defines a sample as a subgroup of the whole population. Random or probability sampling is preferred with quantitative research due to time, cost and accuracy factors (Neuman, 2002). Sampling is used to make a generalisation about the population, as it may not be feasible to get a response from every member of the population (Rea, L.M. & Parker, 2014). A complete list of project personnel for South Africa is not available which means that the researcher did not have access to the whole population, therefore non-probability sampling techniques were selected.

Purposive sampling was used due to the difficulty of access to project personnel in South Africa. Purposive sampling also called judgement sampling is when the researcher based on personal judgement selects the sample using some suitable characteristic of the sample member (Zikmund et al., 2010). In this case this characteristic was employees (project personnel) that work in a projects environment. This non-probability sampling technique was selected to gain a representative sample that is typical of the population (Saunders, 2012).

Large sample sizes are recommended for statistical analysis, this leads to valid generalisability of results. (Tabachnick, B.G., & Fidell, 2007, p. 123) suggests using the number of independent variables (m) to calculate the sample size (N), the guideline recommended is:

$$N > 50 + 8m$$

Based on the four independent variables (leader-member exchange, affective commitment, positive organisational support and discretionary effort), 82 responses would be required for a reasonable sample size.

Cohen, (1992) discusses an alternate way of determining sample size with an emphasis on power analysis. There are four mechanisms that would be used when estimating the sample size for multiple linear regression, namely: (1) alpha level, (2) effect size, (3) power, (4) number of independent variables. The alpha level generally accepted for behavioral sciences is 0.05 which represents the maximum risk of attaining a Type I error, and the value of power is suggested at 0.8 to avoid a Type II error (Cohen, 1992). A Type I error is mistakenly rejecting the null hypothesis when it is true, while a Type II error is failing to reject the null hypothesis when it is false. A medium effect size value of 0.15 is recommended for multiple and multiple partial correlation (Cohen, 1992). Using the abovementioned measures of the four

mechanisms a minimum sample size of 84 is calculated using Cohen's methodology (Cohen, 1992, p. 158).

Field, (2013) states that a sample size of 160 will always suffice if a medium effect is expected. Given the suggested sample sizes of 82 Tabachnick, B.G., & Fidell, (2007), 84 Cohen, (1992) and 160 Field, (2013), the author selected a sample size of 160 as a minimum. However, to ensure generalizability of results the author endeavored for a greater sample size. A 95 percent level of confidence is a balanced approach and was used to avoid the pitfalls of a Type I and Type II error (Field, 2013).

4.5 Measuring Instrument

Saunders & Lewis, (2012) advocate that questionnaires are a proficient method for accumulating data about the same subject from large number of respondents. For this reason, the researcher decided to use a questionnaire as the measurement instrument.

Content validity ensures that a questionnaire provides enough data to answer the research question and comply with the research objectives (Saunders & Lewis, 2012). Construct validity confirms that the questions included in your questionnaire design is collecting data about what they are intended to measure (Saunders & Lewis, 2012).

The questionnaire was formulated using measurement scales from previous research to measure the five constructs as shown in the conceptual model indicated in figure 1 in chapter two. The measurement scales had been validated in previous research studies, however to the researcher's knowledge the five constructs were not combined into a single model previously therefore the measurement scales were validated and are discussed in the next chapter. The most commonly used measure of internal consistency of a scale is reported using the Cronbach alpha coefficient (α) (Pallant, 2010). The α value ranges from 0 (no consistency) to 1 (complete consistency), a α value between 0.70 and 0.80 is considered to have good reliability (Zikmund et al., 2010). The Cronbach's alpha for each of the five constructs were calculated and are discussed in chapter five of this report.

The measuring instrument is structured into five sections, section one containing five questions regarding demographic information with the first three questions relating to age, tenure and seniority level respectively. Question four ("Do you currently work in a projects type environment or not?") enquired specifically on whether the respondent is relevant to the study and question five determined their respective role (project personnel or project manager) in a project team. Section two (leader-member exchange) investigates the relationship between project personnel and their project manager/superior. Section three (perceived organisational

support) examines the support project personnel receive from the organisations they work for. Section four (affective commitment) contains six questions dealing with the emotional attachment that project personnel may or may not have with their organisations. Section five (project success) looks at project success factors, and lastly section six (discretionary effort) investigates the additional effort project personnel put into their work.

Table 1 below shows the five constructs measured and the sources of the scales that was used in the questionnaire. The final questionnaire can be seen in Appendix 1 and should be referred to when reading this section.

Table 1: Sources for the questionnaire construction

Section of questionnaire	Construct	Source of questionnaire
Section two	Leader member exchange (LMX)	Recommended Measure of LMX (LMX 7) (George B. Graen & Uhl-Bien, 1995).
Section three	Perceived organisational support (POS)	Measure of POS (R Eisenberger, Cummings, Armeli, & Lynch, 1997)
Section four	Affective commitment (AC)	AC scale (L Rhoades, Eisenberger, & Armeli, 2001) Scale adapted from the work by (Allen & Meyer, 1990a)
Section five	Project success (PS)	Overall project success scale (Belout & Gauvreau, 2004)
Section six	Discretionary effort (DE)	DE scale (Rosemarie Lloyd, 2008)

All questions in the measurement instrument used a five-point Likert scale ranging from one to five measured as either Strongly Disagree, Disagree, Neither Agree or Disagree, Agree or Strongly Agree. A Likert scale is a traditional business research agreement scale. When business researchers use this scale with five or more categories of responses the measure can be assumed to be interval in nature (Zikmund et al., 2010). Therefore, the researcher used a five-point Likert scale and the data collected for this study was in an interval scale.

4.5.1 Leader-member Exchange Scale

Leader-member exchange was measured by an adapted version of the seven item LMX 7 scale (George B. Graen & Uhl-Bien, 1995). Question one of the LMX 7 scale had two questions combined:

Do you know where you stand with your project manager? Do you usually know how satisfied your project manager is with what you do?

These were split into two separate questions for ease of reading for the respondent, and appeared as question one and two in the questionnaire:

Do you know where you stand with your project manager

Do you usually know how satisfied your project manager is with what you do?

The phrasing of the questions was also changed to include the project context. Maslyn & Uhl-Bien, (2001) reported the internal consistency of the scale as $\alpha = 0.90$. Table 2 below lists the questions for the leader-member exchange scale.

Table 2: leader-member exchange questions

Question number	Question
LMX1	Do you know where you stand with your project manager?
LMX2	Do you usually know how satisfied your project manager is with what you do?
LMX3	Does your project manager understand your job problems and needs?
LMX4	Does your project manager recognise your potential?
LMX5	Regardless of how much formal authority your project manager has built into his/her position, would you agree he/she would use their power to solve your problems in your work?
LMX6	Again, regardless of the amount of formal authority your project manager has, would you agree that he/she would "bail you out", at his/her expense?
LMX7	I have enough confidence in my project manager that I would defend and justify his/her decision if he/she were not present to do so?
LMX8	Would you characterise your working relationship with your project manager as effective?

4.5.2 Perceived Organisational Support Scale

Eisenberger, R. and Huntington, (1986) developed the original Perceived Organisational Scale which was used to measure Perceived organisational support, however the eight item scale was used in this study (R Eisenberger et al., 1997). The internal consistency of the scale scored well at $\alpha = 0.86$ in a study by Gupta, Agarwal, & Khatri, (2016) and $\alpha = 0.90$ in the study by (R Eisenberger et al., 1997). Table 3 below lists the questions for the perceived organisational support scale.

Table 3 : perceived organisational support questions

Question number	Question
POS1	My organisation cares about my opinions
POS2	My organisation really cares about my well-being
POS3	My organisation strongly considers my goals and values
POS4	Help is available from my organisation when I have a problem
POS5	My organisation would forgive an honest mistake on my part
POS6	If given the opportunity, my organisation would take advantage of me
POS7	My organisation shows very little concern for me
POS8	My organisation is willing to help me if I need a special favour

4.5.3 Affective Commitment Scale

A six item Affective commitment scale adapted from Allen & Meyer, (1990) was used to measure Affective Commitment (L Rhoades et al., 2001). The internal consistency reliability of this scale was 0.79 (Gupta et al., 2016). A further study by Meyer, Allen, & Smith, (1993) relating to commitment to organisations and occupations reported an internal consistency value of $\alpha = 0.87$ for the affective commitment scale. Table 4 below lists the questions for the affective commitment scale.

Table 4: affective commitment questions

Question number	Question
AC1	I feel a strong sense of belonging to my organisation
AC2	I feel personally attached to my work
AC3	I am proud to tell others that I work at my organisation
AC4	Working at my organisation has a great deal of personal belonging to me
AC5	I would be happy to work at my organisation until I retire
AC6	I really feel that problems faced by organisation are also my problems

4.5.4 Discretionary Effort Scale

Discretionary effort was measured using the seven item Discretionary Effort scale (Rosemarie Lloyd, 2008). The internal consistency of the scale was at $\alpha = 0.87$ with a managers/supervisors sample (Rosemarie Lloyd, 2008). Table 5 below lists the questions for the discretionary effort scale.

Table 5: discretionary effort questions

Question number	Question
DE1	When I work, I really exert myself to the fullest, beyond what is expected
DE2	I finish a job even if it means sacrificing breaks or lunches
DE3	I do more than is expected of me
DE4	I voluntarily put in extra hours to achieve a result faster
DE5	I persist in overcoming obstacles to complete an important task
DE6	I put in extra effort when I find it necessary
DE7	I work harder than expected to help my organisation to be successful

4.5.5 Project Success Scale

The nine item Project Success scale from Belout & Gauvreau, (2004) was used to measure the Project success construct. The internal consistency reliability of this scale was at $\alpha = 0.72$ (Belout & Gauvreau, 2004). Table 6 below lists the questions for the project success scale.

Table 6: project success questions

Question number	Question
PS1	Technical requirements specified at the beginning of the execution phase were met
PS2	Project schedules were adhered to
PS3	Project cost objectives were not met
PS4	Project clients and/or product users were satisfied with the project outputs
PS5	The project has not perturbed the culture or values of the organization that managed it
PS6	The project was not managed so as to satisfy the interests and challenges of the members of the project team
PS7	There were no quality problems related to project outputs
PS8	Technical problems were successfully identified and resolved
PS9	The project output could easily be replicated and marketed

4.6 Data Gathering Process

Internet surveys are described as being quick, cost effective, efficient and accurate in terms of relaying data about the research (Zikmund et al., 2010). Due to the difficulty of identifying the entire population and the limited accessibility to project personnel, the collection of primary data was performed with the assistance of a data research company who had access to a database of project personnel and project managers working in a projects environment.

The researcher prepared the final questionnaire and after receiving ethical clearance from the

University of Pretoria's Ethical Clearance Committee, submitted the questionnaire to the data research company the ethical confirmation letter can be viewed in Appendix 2. An email was forwarded to the data research company's projects personnel database explaining the reason for the research with a link to access the survey.

To ensure that the relevant respondents were reached, the following question was included in section one of the questionnaire "Do you currently work in a projects type environment?" Respondents from a non-projects work environment were excluded from the sample, while the remainder of the respondents were considered for analysis.

The survey did not request any identifying information to ensure anonymity. The survey link was valid for 2 weeks and was closed once adequate responses were received.

4.7 Analysis Approach

The statistical analysis was performed using the commercial statistical software packages, JMP and SPSS. The dataset was edited to remove incomplete responses and to ignore responses from personnel that do not work in a projects environment. Thereafter, the data was coded to link with the questionnaire. The constructs of the conceptual model were tested concurrently as explained in section 2.6.

4.7.1 Demographic information

The biographical data of the respondents were analysed to determine the frequencies and percentages associated with tenure, age, seniority, work environment and role.

4.7.2 Validity

Zikmund et al., (2010) refers to validity as the accuracy of a measurement and verifies if it is measuring what it is intended to measure. Reliability is a necessary condition but a good Cronbach alpha does not guarantee validity, however evidence of construct validity can be seen when factor analysis is performed (Zikmund et al., 2010).

"Factor analysis allows you to condense a large set of variables or scale items down to a smaller, more manageable number of dimensions or factors" (Pallant, 2010, p. 104). Exploratory factor analysis, a type of factor analysis, was used to confirm that questions asked are in fact capturing information about the relevant construct i.e. testing the validity of the constructs.

First it must be determined if exploratory factor analysis is a viable option by inspecting the

Kaiser Meyer Olkin (KMO) index and Bartlett's test for sphericity for the combined items. KMO is recommended at > 0.60 and Bartlett's test should be significant ($p < 0.05$) (Pallant, 2010).

Secondly, items with communalities < 0.2 should be removed from the scale while communalities higher than 0.5 are acceptable (Child, 2006; Hair, Black, Babin, & Anderson, 2010). Communality is the proportion of common variance present in a variable, where no common variance with other variables is a communality of zero while a communality of one indicates that the variable is fully explained by the factors and is not unique (Field, 2013).

The next step was to determine the number of factors to be retained or extracted (Field, 2013). The eigenvalue one rule, which states there are as many reliable factors as there are eigenvalues greater than one, was used as a criterion to determine the number of factors extracted (Kaiser, 1960). The scree plot, which is a graphical representation of the eigenvalues, can also be used as a guideline to determine which factors to retain by referring to the number of factors left of the inflection point (Field, 2013). Another criterion was that the cumulative percentage variance explained by the factors should be greater than 60% (Hair et al., 2010).

Once the number of factors to be extracted was determined, factor extraction using the principal axis factoring method was used to calculate factor loadings (how the construct items loaded onto each factor). According to Field, (2013), initially it is expected that all the construct items will load highly onto the first few factors therefore an extraction with a varimax rotation method was required to minimise the number of construct items that have high loadings on each factor and to further reduce low loadings (Yong & Pearce, 2013). Factor loadings above 0.4 were accepted, however a loading of 0.4 or above on more than one factor would need to be inspected further to determine if there is any ambiguity on the item construct (Field, 2013).

4.7.3 Reliability

Reliability refers to consistency, and is an indicator of a measure's internal consistency or homogeneity (Zikmund et al., 2010). Cronbach Alpha (α) is a common indicator for internal consistency (Pallant, 2010). In terms of a questionnaire, reliability indicates that a measure consistently reflects the construct that it is observing (Field, 2013). (Nunnally, 1978) stated that a Cronbach alpha of 0.7, although low, can be accepted while values higher than 0.8 is considered to be of good reliability (Zikmund et al., 2010).

4.7.4 Descriptive Statistics

Descriptive statistics is the summary and description of the data collected from a sample (Wegner, 2012; Zikmund et al., 2010). Descriptive statistics were calculated to describe the mean, standard deviation range of scores, kurtosis and skewness of the five constructs (Pallant, 2010). Salkind, (2010) explains skewness as the measure of the lack of symmetry, and kurtosis as how flat or peaked a distribution appears with a platykurtic distribution being relatively flat compared to a leptokurtic distribution that is peaked. The mean and median was also used to describe the distribution such that when the mean is greater than the median, the distribution is positively skewed while a negative skewed distribution was expected when the median is greater than mean (Salkind, 2010).

4.7.5 Correlation Analysis

“Correlation analysis is used to describe the strength and direction of the linear relationship between two variables” (Pallant, 2010, p. 128). Bivariate correlation analysis was used to determine whether a positive or negative relationship exists between the various constructs. Pallant, (2010) recommended Pearson’s correlation (r) for interval variables, where Pearson’s r is a value between -1 and +1, with $r = +1$ indicating a perfect positive linear correlation while $r = -1$ indicating a perfect negative linear correlation and a value of zero indicates no linear relationship (Wegner, 2012). The significance of the results was confirmed by a p -value less than 0.05 ($p < 0.05$).

4.7.6 Hypotheses testing

Simple linear regression is used to determine a straight line equation between the predictor variable and the response variable (Rea, L.M. & Parker, 2014; Wegner, 2012). The predictor variable is better known as the independent variable while the response variable as the dependent variable. A significance test ($p < 0.05$) was conducted to exam the likelihood of the relationship between the independent and dependent variables occurring by chance (Wegner, 2012).

Simple linear regression is performed to explore the relationships of one dependent and one independent variable while multiple regression analysis was used when the dependent variable was predicted by two or more independent variables (Zikmund et al., 2010). Multiple regression was used to determine if affective commitment (AC) and perceived organisational support (POS) had a moderating effect on the leader-member exchange and project success relationship. Interaction variables were created to represent the moderators, POS_LMX represented POS as a moderator while AC_LMX represented AC as a moderator.

Multiple regression provides information on the model as a whole including all subscales and the contribution of the individual variables that the model consists of (Pallant, 2010). All constructs were tested concurrently which resulted in a total predictive value (R-square) of project success.

4.8 Limitations

The study examined the relationships between the five constructs: leader-member exchange, perceived organisational support, affective commitment, discretionary effort and project success. The author identified several limitations to the study:

- The use of non-probability purposive sampling implies that the sample does not statistically represent the population, this is due to not all individuals in the population being given an equal chance of being selected.
- Potential technical issues from the use of Internet-based surveys which could limit the number of responses and/or corrupt the data of responses.
- The use of a data research company could lead to convenience sampling resulting in bias and a high sampling error, however the use of purposive sampling was confirmed with the selected data research company.
- The study was a cross-sectional survey focusing on a specific point in time, this could lead to skewed respondent feedback as responses might be based on the current interactions with their supervisor and organisation.
- The choice of a quantitative study using a questionnaire limits the respondents to standardised answers. The respondents are unable to explain the reason for their responses; hence the context of the relationships was assumed.

CHAPTER 5: RESULTS

5.1 Introduction

This chapter presents the results from the statistical analysis of the data collected as described in Chapter four.

5.2 Response Rate

A data research company was used to manage the data collection over a two-week period ending on the 1st of September 2017. The researcher tested the hyperlink on the email sent to respondents prior to the survey commencing, verifying that the link and the survey were operational. For the duration of the data collection period, there were 4621 emails sent to potential respondents with 294 attempts at the survey. The number of respondents that completed the survey were 190. The research was aimed at employees working in a projects environment, therefore only the 181 respondents that answered “yes” to question four were considered in the data analysis process. The response rate for the survey was 4.1%.

5.3 Demographic Information

The biographical data of age, tenure, seniority level, work environment and role for respondents are described below.

Table 7 below indicates the frequency distribution of the respondent’s age. The number of respondents between the ages of 20 – 29 were 15 (8.3%), between 30 – 39 were 58 (32.0%), between 40 – 49 were 51 (28.2%), between 50 – 59 were 37 (20.4%), between 60 – 69 were 19 (10.5%) and 70 and above was one (0.6%).

Table 7: Age of respondents

Age	Frequency	Percentage (%)
20 – 29	15	8.3%
30 – 39	58	32.0%
40 – 49	51	28.2%
50 – 59	37	20.4%
60 – 69	19	10.5%
70 and above	1	0.6%
Total	181	100%

Tenure of the respondents while working on projects within their organisations are indicated on Table 8 below. There were 180 respondents that confirmed their tenure, with one respondent not completing this field.

Table 8: Tenure of respondents

Tenure	Frequency	Percentage (%)
< 2 years	14	7.8%
2 - 5 years	50	27.8%
6 - 9 years	41	22.8%
10 - 14 years	37	20.6%
15 - 19 years	38	21.1%
Total	180	100%

Table 9 below indicates the seniority of respondents. Majority of the respondents were either at a mid or senior level, with 83 respondents (46.4%) at mid-level and 85 respondents (47.5%) at senior level respectively. The remaining 11 of the respondents (6.2%) that completed the seniority field were at junior level, however there were two respondents that did not complete this field.

Table 9: Seniority of respondents

Seniority	Frequency	Percentage (%)
Junior	11	6.2%
Middle	83	46.4%
Senior	85	47.5%
Total	179	100%

Tables 10 and 11 below indicate whether the respondents work in a projects environment and their projects role respectively.

Table 10: Work environment

Projects Environment	Frequency	Percentage (%)
Yes	181	95.3%
No	9	4.7%
Total	190	100%

Table 11: Role in projects environment

Projects role	Frequency	Percentage (%)
Project manager	126	69.6%
Project personnel	55	30.4%
Total	181	100%

5.4 Validity

The validity of the constructs was tested by performing an exploratory factor analysis. The viability of conducting an exploratory factor analysis was determined by the Kaiser Meyer Olkin (KMO) and Bartlett's test for sphericity, as seen in table 12 below.

The KMO value for all the combined items was 0.877 which was greater than the suggested lower limit of 0.5. The result was confirmed by a significant value (p -value < 0.05) for Bartlett's test of sphericity, therefore factor analysis was appropriate.

Table 12: KMO and Bartlett's test for sphericity

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.877
Bartlett's Test of Sphericity	Approx. Chi-Square	4051.609
	df	703
	Sig.	.000

The communalities for the individual items were acceptable with values greater than 0.2, however the values for items PS3, PS5 and PS6 were below 0.3 but were still retained in the analysis. All items with the exception of PS3, PS5 and PS6 associate well with each other.

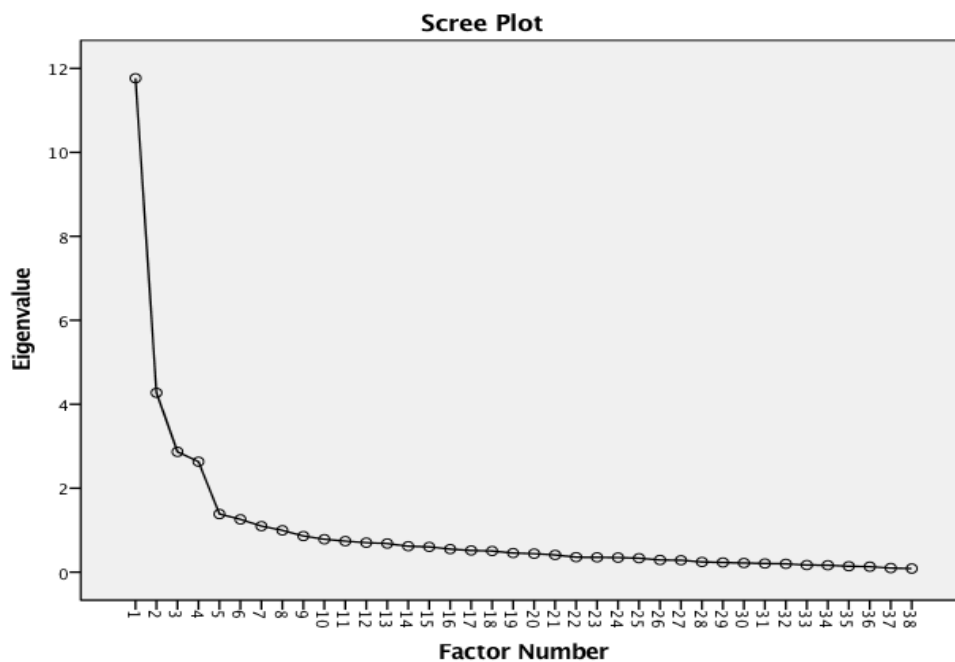
Table 13 depicts the total variance explained which highlights the eigenvalues and the cumulative percentage of variance explained by the factors. The second column of Table 13

indicates that there are seven eigenvalues that are greater than one, as per the eigenvalue one rule these seven factors will be extracted. The cumulative percentage of variance for the seven factors exceeds 60% thereby also supporting the use of seven factors. The point of inflection on the scree plot (see figure 2 below) was also considered, due to there being more than one inflection point the researcher chose to retain seven factors in support of the eigenvalue one rule as well as the cumulative percentage of variance of approximately 66.53%.

Table 13: Total Variance Explained

Total Variance Explained						
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.766	30.964	30.964	11.766	30.964	30.964
2	4.274	11.248	42.212	4.274	11.248	42.212
3	2.867	7.545	49.757	2.867	7.545	49.757
4	2.633	6.929	56.686	2.633	6.929	56.686
5	1.385	3.645	60.330	1.385	3.645	60.330
6	1.258	3.311	63.642	1.258	3.311	63.642
7	1.097	2.888	66.529	1.097	2.888	66.529

Figure 2: Scree Plot of Eigenvalues



The results presented below in tables 14 and 15 illustrate that items can load onto more than one factor. A loading of 0.4 or greater on a factor can be considered meaningful (Field, 2013). Prior to the rotation most items loaded highly onto factor one as seen below in table 14, with poor loading on the remaining factors therefore a varimax rotation was performed to verify if items from the same construct will load onto one factor.

Table 14: Factor Matrix

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
LMX1	.697		.393				
LMX2	.605		.425				
LMX3	.610		.503				
LMX4	.555		.415				
LMX5	.561		.403				
LMX6	.418		.335				
LMX7	.482		.418				
LMX8	.599		.485				
POS1	.646		-.361				
POS2	.700		-.311				
POS3	.730		-.330				
POS4	.621	-.311					
POS5	.519	-.331					
POS6	-.457	.348					
POS7	-.670	.329	.303				
POS8	.445						
AC1	.787						
AC2	.690						
AC3	.678		-.325				
AC4	.767		-.305		.324		
AC5	.576						
AC6	.510				.366		-.310
PS1	.491			.535			
PS2	.405			.512			
PS3							
PS4	.578			.433			
PS5				.371			
PS6	-.317						
PS7				.597			
PS8	.489			.524			
PS9	.362			.397			
DE1	.469	.603					
DE2	.460	.635					
DE3	.531	.629					
DE4	.465	.692					
DE5	.486	.618					
DE6	.503	.667					
DE7	.517	.681					

Extraction method: Principal Axis Factoring. 7 factors extracted. Factor loadings below 0.3 not shown.

Table 15: Rotated Factor Matrix

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
LMX1			.684				
LMX2			.681				
LMX3			.791				
LMX4			.665				
LMX5			.709				
LMX6			.601				
LMX7			.627				
LMX8			.769				
POS1	.701						
POS2	.817						
POS3	.764						
POS4	.689						
POS5	.518					.346	
POS6	-.578						.310
POS7	-.788						
POS8	.520						
AC1	.599				.487		
AC2	.368	.312			.576		
AC3	.511				.562		
AC4	.455				.663		
AC5					.615		
AC6					.570		
PS1				.689			
PS2				.630			
PS3				-.367			
PS4				.591			
PS5				.444			
PS6						-.361	
PS7				.657			
PS8				.632			
PS9				.516			
DE1		.721					
DE2		.773					
DE3		.787					
DE4		.823					
DE5		.793					
DE6		.849					
DE7		.844					

Extraction method: Principal Axis Factoring with Varimax rotation method. Factor loadings below 0.3 not shown.

As seen above in table 15, all questions for perceived organisational support (POS) loaded highly onto the first factor, with loadings above 0.4 therefore all eight questions were retained. The loadings on factor six and seven for POS5 and POS6 respectively were ignored as the loadings were below 0.4 and no other constructs loaded into these factors.

Discretionary effort (DE) loaded highly onto factor two, with all items exceeding 0.4. Similarly, factor three contained all questions for leader-member exchange (LMX) due to all loadings being above 0.4 and therefore meaningful. Therefore, the seven items for DE and the eight items for LMX were retained.

Most project success (PS) questions loaded highly onto factor four, with the exception of items PS3 and PS6. Although item PS3 loaded onto factor four, the factor loading was below 0.4 while PS6 loaded onto factor six and the loading was below 0.4 therefore item PS6 was excluded from the project success scale. Based on the Cronbach's alpha, which is discussed in the following section, a decision will be made on whether to retain item PS3.

All affective commitment (AC) items load highly onto factor five with factor loadings above 0.4, however there are four cross loadings where items AC1, AC2, AC3, AC4 also load onto factor one which is dominated by the perceived organisational support items. AC2 also loaded onto factor two, however item AC2 did not load highly onto factor one or factor two with a factor loading below 0.4 therefore was not meaningful and was retained under factor five. Three items were retained for the affective commitment scale namely AC2, AC5 and AC6, while AC1, AC3 and AC4 were not considered due to cross-loadings. Both affective commitment and perceived organisational support relate to the employees' relationship with their organisation which explain the cross loadings.

5.5 Reliability

The researcher performed an item analysis to measure the reliability of each of the variables. The item analysis produced a Cronbach Alpha coefficient for each construct above 0.6, therefore the measuring instrument is deemed reliable. Table 16 below indicate the Cronbach alpha for each of the constructs.

Item PS3 had to be reverse scored which improved the Cronbach Alpha from 0.67 to 0.80, however the removal of item PS3 would further improve the Cronbach Alpha to 0.81. Therefore, item PS3 was removed resulting in seven items in the project success scale. The Cronbach's Alphas for the individual scales can be referred to in Appendix 4.

Table 16: Cronbach's alpha for constructs

Scale Description	Cronbach's Alpha	N of items
Leader-member exchange	0.90	8
Perceived organisation support	0.89	8
Affective commitment	0.72	3
Project success	0.81	7
Discretionary effort	0.93	7

5.6 Descriptive Statistics

The following sections explain the descriptive statistics for the constructs leader-member exchange, perceived organisation support, affective commitment, discretionary effort and project success.

5.6.1 Descriptive statistics for leader-member exchange

The leader-member exchange (LMX) score was calculated using the average of the LMX items where 1 = Strongly Disagree, 2 = Disagree, 3 = Neither Agree or Disagree, 4 = Agree and 5 = Strongly Agree. The mean score for leader-member as per table 17 below was 3.77, which indicates a response closer to "Agree". The standard deviation of 0.70 indicated that the responses deviated slightly from the main score. The median is slightly greater than the mean, therefore the distribution is somewhat negatively skewed and due to the kurtosis value of 1.28 is platykurtic (has a flat and wide distribution) (Salkind, 2010).

Table 17: Descriptive statistics Leader-member exchange

Leader-member exchange	
N	180
Mean	3.77
Median	3.87
Std Dev	0.70
Skewness	-0.77
Kurtosis	1.28

5.6.2 Descriptive statistics for perceived organisation support

The perceived organisation support score was calculated using the same method described for leader-member exchange in section 5.6.1. The mean score for perceived organisation support as per table 18 below was 3.43, which indicates a response closer to “Neither Agree or Disagree”. The standard deviation of 0.40 indicated that the responses deviated slightly from the main score. The median is slightly greater than the mean, therefore the distribution is somewhat negatively skewed and due to the kurtosis value of 1.15 is platykurtic (has a flat and wide distribution) (Salkind, 2010).

Table 18: Descriptive statistics Perceived organisation support

Perceived organisation support	
N	181
Mean	3.43
Median	3.50
Std Dev	0.40
Skewness	-0.16
Kurtosis	1.15

5.6.3 Descriptive statistics for affective commitment

The affective commitment score was calculated using the same method described for leader-member exchange in section 5.6.1. The mean score for affective commitment as per table 19 below was 3.71, which indicates a response closer to “Agree”. The standard deviation of 0.82 indicated that the responses deviated slightly from the main score. The mean is slightly greater than the median, therefore the distribution is somewhat positively skewed and due to the kurtosis value of 0.13 is platykurtic (has a flat and wide distribution) (Salkind, 2010).

Table 19: Descriptive statistics Affective commitment

Affective commitment	
N	181
Mean	3.71
Median	3.67
Std Dev	0.82
Skewness	-0.52
Kurtosis	0.13

5.6.4 Descriptive statistics for discretionary effort

The discretionary score was calculated using the same method described for leader-member exchange in section 5.6.1. The mean score for discretionary effort as per table 20 below was 4.29, which indicates a response closer to “Agree”. The standard deviation of 0.57 indicated that the responses deviated slightly from the main score. The mean is slightly greater than the median, therefore the distribution is somewhat positively skewed and due to the kurtosis value of -0.21 is platykurtic (has a flat and wide distribution) (Salkind, 2010).

Table 20: Descriptive statistics Discretionary effort

Discretionary effort	
N	181
Mean	4.29
Median	4.14
Std Dev	0.57
Skewness	-0.43
Kurtosis	-0.21

5.6.5 Descriptive statistics for project success

The project succes score was calculated using the same method described for leader-member exchange in section 5.6.1. The mean score for project success as per table 21 below was 3.59, which indicates a response closer to “Agree”. The standard deviation of 0.58 indicated that the responses deviated slightly from the main score. The median is slightly greater than the mean, therefore the distribution is somewhat negatively skewed and due to the kurtosis

value of -0.02 is platykurtic (has a flat and wide distribution) (Salkind, 2010).

Table 21: Descriptive statistics Project success

Project success	
N	181
Mean	3.59
Median	3.71
Std Dev	0.58
Skewness	-0.33
Kurtosis	-0.02

5.7 Correlations between Constructs

The Pearson's r correlations between the constructs can be seen in table 22 below. The correlations between the five constructs were positive and the p-value for each correlation efficient was below 0.05 and therefore significant.

Table 22: Pearson's correlations for all constructs

	POS	DE	LMX	PS	AC
POS	1.0000	0.1990	0.3669	0.3032	0.5083
DE	0.1990	1.0000	0.2282	0.2474	0.3329
LMX	0.3669	0.2282	1.0000	0.3138	0.3856
PS	0.3032	0.2474	0.3138	1.0000	0.3549
AC	0.5083	0.3329	0.3856	0.3549	1.0000

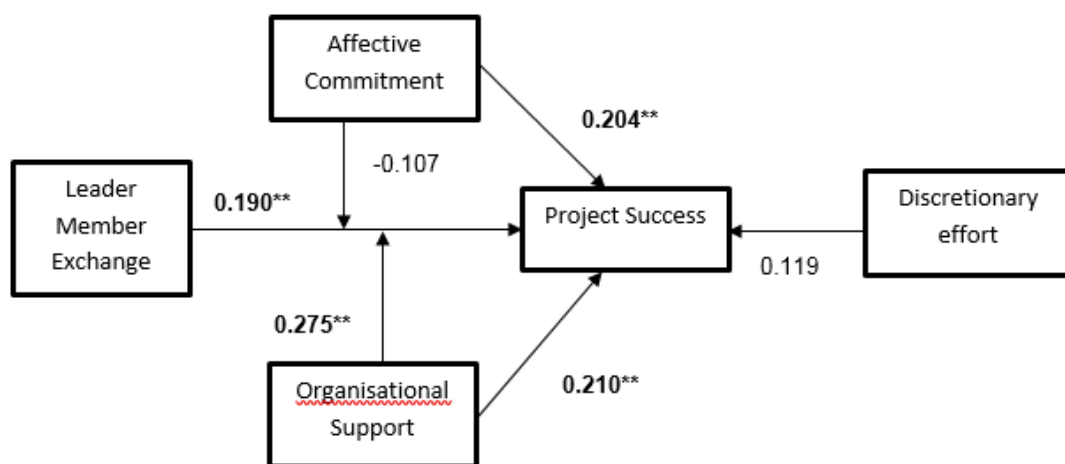
5.8 Hypotheses Testing

The conceptual model was tested using multiple regression, where the constructs were separated into two models to test the eight hypotheses stated in chapter three. Figure 3 and table 23 below refers to "Model one" which consisted of all four constructs (LMX, POS, AC, DE) and two further interaction variables (POS_LMX and AC_LMX) representing the moderation effects of perceived organisational support and affective commitment with project success as the dependent variable. Figure 4 and table 24 below refers to "Model two" which analysed the relationship of affective commitment and perceived organisational support on

discretionary effort. The R-Square value for “Model one” explains the variation of project success that is explained by LMX, POS, AC, DE, POS_LMX and AC_LMX, therefore 23.7% of the variation in project success can be explained by the four constructs (LMX, POS, AC, DE) and the two interaction variables (POS_LMX and AC_LMX). Similarly for “Model two”, 11.2% of the variation in discretionary effort can be explained by perceived organisational support and affective commitment.

Figure 3: “Model one”

Project success noted as the dependent variable



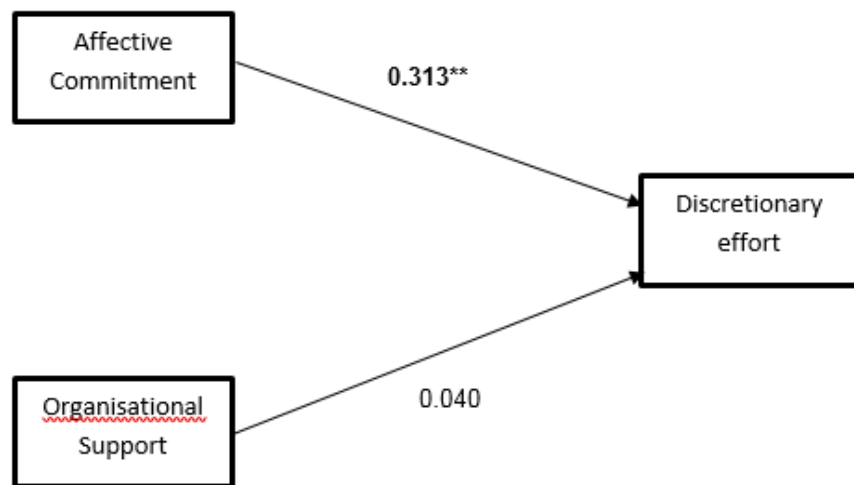
Statistically significant relationship** (p<0.05)

Table 23: “Model one”

Variable	Std Error	t Ratio	Sig	Std Beta	VIF
POS	0.118	2.57	0.0109	0.210	1.52
AC	0.058	2.49	0.0138	0.204	1.54
LMX	0.065	2.43	0.0161	0.190	1.38
DE	0.073	1.67	0.0967	0.119	1.15
POS_LMX	0.145	2.98	0.0033	0.275	1.93
AC_LMX	0.066	-1.18	0.2410	-0.107	1.86
R-Square = 0.237			Adjusted R-Square = 0.210		

Figure 4: “Model two”

Discretionary effort noted as the dependent variable



Statistically significant relationship** ($p < 0.05$)

Table 24: “Model two”

Variable	Std Error	t Ratio	Sig	Std Beta	VIF
AC	0.057	3.81	0.0002	0.313	1.35
POS	0.115	0.49	0.6248	0.040	1.35
R-Square = 0.112			Adjusted R-Square = 0.102		

5.8.1 Hypothesis one

- **Null hypothesis one (H10):** No significant relationship exists between leader-member exchange and project success in a projects environment.
- **Alternate hypothesis one (H11):** A significant relationship exists between leader-member exchange and project success in a projects environment.

The regression analysis test found a beta coefficient of 0.190 which was statistically significant ($p < 0.05$). Therefore, a moderate positive relationship between leader-member exchange and project success exists in a projects environment. The null hypothesis was thus rejected in favour of the alternate hypothesis.

5.8.2 Hypothesis two

- **Null hypothesis two (H2₀):** The relationship between leader-member exchange and project success is not moderated by affective commitment.
- **Alternate hypothesis two (H2₁):** The relationship between leader-member exchange and project success is moderated by affective commitment.

The regression analysis test found a beta coefficient of -0.107 which was not statistically significant ($p < 0.05$). The alternate hypothesis was rejected and the null hypothesis was accepted and it was therefore concluded that the relationship between leader-member exchange and project success was not moderated by affective commitment.

5.8.3 Hypothesis three

- **Null hypothesis three (H3₀):** The relationship between leader-member exchange and project success is not moderated by perceived organisational support.
- **Alternate hypothesis three (H3₁):** The relationship between leader-member exchange and project success is moderated by perceived organisational support.

The regression analysis test found a beta coefficient of 0.275 which was statistically significant ($p < 0.05$). The null hypothesis was thus rejected in favour of the alternate hypothesis. Therefore, it was concluded that the relationship between leader-member exchange and project success was moderated by perceived organisational support.

5.8.4 Hypothesis four

- **Null hypothesis four (H4₀):** No significant relationship exists between affective commitment and project success in a projects environment.
- **Alternate hypothesis four (H4₁):** A significant relationship exists between affective commitment and project success in a projects environment.

The regression analysis test found a beta coefficient of 0.204 which was statistically significant ($p < 0.05$). Therefore, a moderate positive relationship between affective commitment and project success exists. The null hypothesis was thus rejected in favour of the alternate hypothesis.

5.8.5 Hypothesis five

- **Null hypothesis five (H5₀):** No significant relationship exists between perceived organisational support and project success in a projects environment.
- **Alternate hypothesis five (H5₁):** A significant relationship exists between perceived organisational support and project success in a projects environment.

The regression analysis test found a beta coefficient of 0.210 which was statistically significant ($p < 0.05$). Therefore, a moderate positive relationship between perceived organisational support and project success exists. The null hypothesis was thus rejected in favour of the alternate hypothesis.

5.8.6 Hypothesis six

- **Null hypothesis six (H6₀):** No significant relationship exists between perceived organisational support and discretionary effort in a projects environment.
- **Alternate hypothesis six (H6₁):** A significant relationship exists between perceived organisational support and discretionary effort in a projects environment.

The regression analysis test found a beta coefficient of 0.040 which was not statistically significant ($p > 0.05$). The alternate hypothesis was rejected and the null hypothesis was accepted and it was therefore concluded that no relationship exists between perceived organisational support and discretionary effort in a projects environment.

5.8.7 Hypothesis seven

- **Null hypothesis seven (H7₀):** No significant relationship exists between affective commitment and discretionary effort in a projects environment.
- **Alternate hypothesis seven (H7₁):** A significant relationship exists between affective commitment and discretionary effort in a projects environment.

The regression analysis test found a beta coefficient of 0.313 which was statistically significant ($p < 0.05$). Therefore, a moderate positive relationship between affective commitment and discretionary exists. The null hypothesis was thus rejected in favour of the alternate hypothesis.

5.8.8 Hypothesis eight

- **Null hypothesis eight (H8₀):** No significant relationship exists between discretionary effort and project success in a projects environment.
- **Alternate hypothesis eight (H8₁):** A significant relationship exists between discretionary effort and project success in a projects environment.

The regression analysis test found a correlation coefficient of 0.119 which was not statistically significant ($p < 0.05$). The alternate hypothesis was rejected and the null hypothesis was accepted and it was therefore concluded that no relationship exists between discretionary effort and project success in a projects environment.

5.9 Conclusion

The R-Square value of 0.237 “model one” confirms that the six variables listed (LMX, POS, AC, DE, POS_LMX, AC_LMX) are responsible for 23.7% of the variation in the dependent variable project success. The R-Square value of 0.112 “model two” confirms that the two variables listed (POS and AC) are responsible for 11.2% of the variation in the dependent variable discretionary effort. Please refer to table 25 below for a summary of the hypotheses.

Table 25: Summary of the hypotheses

Hypothesis	Objective covered	Constructs used to test	Model Significant	Hypothesis accepted (null/alternate)
Hypothesis 1	Objective 1	LMX	Yes	Alternate
Hypothesis 2	Objective 3	LMX, AC	No	Null
Hypothesis 3	Objective 3	LMX, POS	Yes	Alternate
Hypothesis 4	Objective 2	AC	Yes	Alternate
Hypothesis 5	Objective 2	POS	Yes	Alternate
Hypothesis 6	Objective 2	POS, DE	No	Null
Hypothesis 7	Objective 2	AC, DE	Yes	Alternate
Hypothesis 8	Objective 2	DE	No	Null

CHAPTER 6: DISCUSSION OF RESULTS

In this chapter the research results from chapter five are discussed and related to the hypotheses from chapter three and literature reviewed in chapter two.

6.1 Overview of Demographic Information

There were 190 completed responses collected, however nine responses were excluded due to the respondents having not worked in a projects environment therefore resulting in 181 useable responses and a response rate of 4.1%.

The majority of the respondents were in the age group 30 - 39 years old (32.0%), followed closely by respondents in the age group 40 – 49 years old (28.2%) and respondents in the 50 – 59 years old (20.4%). In the age groups of 20 – 29 years old and 60 – 69 years old were represented by 8.3% and 10.5% of the respondents respectively. There was good representation across all age groups except in the age group 70 and above, where there was only one respondent which could be explained by most employees at this age are now retired.

The tenure of service varied with more than 82% of respondents having worked on projects for greater than two years. Out of the 180 respondents that completed this field, 14 worked on projects for under two years and the remaining 164 represented by the 82% worked in projects for either 2-5 years, 6 – 9 years, 10 – 14 years and 15 – 19 years. This result highlighted the vast experience of project personnel in South Africa.

Majority of respondents were either in a mid (46.4%) or senior level (47.5%) at their respective organisations with 11 respondents in a junior position. This result indicated that there might be a shortage of project personnel entering the industry, however current project personnel are well placed in their organisations.

The 181 useable responses were from respondents currently working in a projects environment, with remaining nine respondents not included in the statistical analysis as they were not applicable to this study. Project managers were the main respondents making up 69.6% of responses, while project personnel represented the remaining 30.4% of respondents.

6.2 Overview of Constructs

6.2.1 Leader-member exchange

Leader-member exchange was measured using an adapted version of the seven item LMX 7 scale (George B. Graen & Uhl-Bien, 1995). The validity of the eight questions, that were used

instead of the seven questions due to ease of interpretation as explained in section 4.5.1, were confirmed by performing an exploratory factor analysis. High factor loadings were observed on all eight questions after the varimax rotation, therefore all eight questions were included in the scale. The Cronbach alpha achieved for leader-member exchange was 0.90 which matched the internal consistency of the study by (Maslyn & Uhl-Bien, 2001).

(Maslyn & Uhl-Bien, 2001) reported a mean score for leader-member exchange of 3.77 which was the same for the current study. The mean score of 3.77 indicated an average response that was close to “Agree”, therefore suggesting a moderate level of leader-member exchange in the sample.

6.2.2 Perceived organisational support

Perceived organisational support was measured using the eight item perceived organisational support scale (R Eisenberger et al., 1997). The validity of the eight questions were confirmed by performing an exploratory factor analysis. High factor loadings were observed on all eight questions after the varimax rotation, therefore all eight questions were included in the scale. The Cronbach alpha achieved for perceived organisational support was 0.89 which was similar to the internal reliabilities of previous perceived organisation support studies of 0.90 (R Eisenberger et al., 1997) and 0.86 (Gupta et al., 2016).

The mean score of 3.43 indicated an average response that was close to “Neither Agree or Disagree”, therefore suggesting that respondents were unsure if perceived organisational support was present. The mean score of 3.43 was similar to a study in the tourism and hospitality which returned a mean score of 3.59, however that study moderately supported organisational support (Colakoglu et al., 2010).

6.2.3 Affective commitment

Affective commitment was measured using the six item affective commitment scale (L Rhoades et al., 2001). The validity of the six questions were confirmed by performing an exploratory factor analysis. Due to cross loadings after the varimax rotation, just three questions were retained in the scale. The Cronbach alpha achieved for affective commitment was 0.72 which was lower compared to the internal reliabilities of previous affective commitment studies of 0.79 (Gupta et al., 2016) and 0.87 (Meyer et al., 1993) but reliability was still acceptable (Nunnally, 1978).

Colakoglu et al., (2010) reported a mean score for affective commitment of 3.60 which was similar to the mean score of 3.71 for this study. This indicated an average response that was

close to “Agree”, therefore suggesting a moderate level of affective commitment.

6.2.4 Discretionary effort

Discretionary effort was measured using the seven item discretionary effort scale (Rosemarie Lloyd, 2008). The validity of the seven questions were confirmed by performing an exploratory factor analysis. High factor loadings were observed on all seven questions after the varimax rotation, therefore all seven questions were included in the scale. The Cronbach alpha achieved for discretionary effort was 0.93 which exceeded the internal reliability of 0.87 from a previous discretionary effort study (Rosemarie Lloyd, 2008).

The mean score for discretionary effort was 4.29 which was in the region of the reported mean of 4.22 from a previous discretionary effort study (Rosemarie Lloyd, 2008). The mean score of 4.29 represented an average response of slightly above “Agree”, which suggested a good level of discretionary effort.

6.2.5 Project success

Project success was measured using the nine item project success scale (Belout & Gauvreau, 2004). The validity of the nine questions were confirmed by performing an exploratory factor analysis. High factor loadings were observed on seven questions after the varimax rotation, question PS6 was excluded due to a factor loading below 0.4 and PS3 was omitted due to the reliability in the scale increasing after its exclusion. The Cronbach alpha achieved for project success was 0.81 which exceeded the internal reliability of 0.72 from a previous project success study (Belout & Gauvreau, 2004).

The mean score of 3.59 indicated an average response that was close to “Agree”, therefore suggesting a moderate level of project success.

6.3 Research Hypotheses Discussion

6.3.1 Hypothesis one

- **Null hypothesis one (H1₀):** No significant relationship exists between leader-member exchange and project success in a projects environment.
- **Alternate hypothesis one (H1₁):** A significant relationship exists between leader-member exchange and project success in a projects environment.

The hypothesis was tested using regression analysis, leader-member exchange was found to

have a significant relationship with project success, therefore the null hypothesis is rejected and the alternate hypothesis is accepted. It is concluded that the employee-management relationship, as measured by leader-member exchange, predicts projects success in a projects environment. Hypothesis one was formulated to respond to research objective one which looked at the relationship between employee-manager interactions and project success.

The result indicated that project personnel who experienced high-quality leader-member exchange relationships would contribute to project success, this supported the social exchange theories which was described as a reciprocal relationship and in this case the high-quality leader-member exchange relationships result in positive reciprocity of project success (Cropanzano & Mitchell, 2005; Wayne et al., 1997).

Leader-member exchange literature also indicated that high quality leader-member exchange leads to favourable organisational outcomes through improvements in organisational citizenship behaviour, job performance and organisational commitment (Cropanzano & Mitchell, 2005; Dulebohn et al., 2012; Gerstner & Day, 1997; Lawrence & Kacmar, 2012; Luo, Biao; Cheng, 2014; Tastan, 2014; Wang et al., 2005; Wayne et al., 1997). The findings of this study add to the current literature, by indicating that leader-member exchange has a significant relationship with project success in a projects environment compared to previous studies which focused on leader-member exchange in an organisational setting. It can therefore be assumed that the improved employee behaviours due to high-leader member exchange in an organisational setting might also be applicable to high-leader member exchange in a projects environment leading to project success, therefore contributing to existing project success literature from a leader-member exchange perspective (Belout & Gauvreau, 2004).

6.3.2 Hypothesis two

- **Null hypothesis two (H2₀):** The relationship between leader-member exchange and project success is not moderated by affective commitment.
- **Alternate hypothesis two (H2₁):** The relationship between leader-member exchange and project success is moderated by affective commitment.

The hypothesis was tested using regression analysis, the interaction between leader-member exchange and affective commitment on project success is found not to be significant, therefore the null hypothesis is accepted and the alternate hypothesis is rejected. It is concluded that affective commitment has no moderator effect on the relationship between leader-member exchange and project success. Hypothesis two was formulated to respond to research

objective three which looked at the effect of employee-organisation interactions on the relationship between employee-manager interactions and project success.

Affective commitment which falls under the social exchange and organisational support theory domain due to perceived organisational support being its predictor, does not have an effect on the relationship between leader-member exchange and project success (Cropanzano & Mitchell, 2005; Kurtessis et al., 2015). The emotional attachment to an organisation that does not influence the employee-manager interaction with project success seems counterintuitive, and in some regards contradicts organisational support theory (Kurtessis et al., 2015). The core essence of organisational commitment is unable to positively influence the predictive relationship between leader-member exchange and project success, therefore the result also contradicts the findings put forward by Mercurio, (2015).

6.3.3 Hypothesis three

- **Null hypothesis three (H3₀):** The relationship between leader-member exchange and project success is not moderated by perceived organisational support.
- **Alternate hypothesis three (H3₁):** The relationship between leader-member exchange and project success is moderated by perceived organisational support.

The hypothesis was tested using regression analysis, the interaction between leader-member exchange and perceived organisational support on project success is found to be significant, therefore the null hypothesis is rejected and the alternate hypothesis is accepted. It is concluded that perceived organisational support has a moderator effect on the relationship between leader-member exchange and project success. Hypothesis three was formulated to respond to research objective three which looked at the effect of employee-organisation interactions on the relationship between employee-manager interactions and project success.

The reviewed literature states a positive reciprocal relationship exists between leader-member exchange and perceived organisational support (Kurtessis et al., 2015; Wayne et al., 1997). The result indicated that the moderating effect of perceived organisational support aligns with previous literature that concluded perceived organisational support as a moderator (Jain et al., 2013). The result also supports both the social exchange theory Cropanzano & Mitchell, (2005); Wayne et al., (1997) and organisational support theory Kurtessis et al., (2015) as the reciprocity of the employee-manager interactions and employee-organisation interactions result in a positive outcome toward project success.

6.3.4 Hypothesis four

- **Null hypothesis four (H4₀):** No significant relationship exists between affective commitment and project success in a projects environment.
- **Alternate hypothesis four (H4₁):** A significant relationship exists between affective commitment and project success in a projects environment.

The hypothesis was tested using regression analysis, affective commitment is found to have a significant relationship with project success, therefore the null hypothesis is rejected and the alternate hypothesis is accepted. Hypothesis four was formulated to respond to research objective two which looked at the relationship between employee-organisation interactions and project success.

Affective commitment is noted as the emotional attachment that employees have with their organisations, which increases their willingness to pursue organisational goals (Allen & Meyer, 1990b, 1991). Gilbert, Holdsworth, & Kyle, (2017), assumption that an employee's commitment to an organisation is transferable to a project environment, is supported by the result of this analysis where affective commitment, a form of organisational commitment, is found to impact project success in a projects environment. This adds to the current body of literature where an organisation perspective is mainly taken with little mention of a projects environment (Allen & Meyer, 1991; Mercurio, 2015). This result further contradicts the result of hypothesis two, suggesting that further investigation would be required to clarify the impact of affective commitment on the conceptual model.

6.3.5 Hypothesis five

- **Null hypothesis five (H5₀):** No significant relationship exists between perceived organisational support and project success in a projects environment.
- **Alternate hypothesis five (H5₁):** A significant relationship exists between perceived organisational support and project success in a projects environment.

The hypothesis was tested using regression analysis, perceived organisational support is found to have a significant relationship with project success, therefore the null hypothesis is rejected and the alternate hypothesis is accepted. It is concluded that the employee-organisation relationship, as measured by perceived organisational support, predicts projects success in a projects environment. Hypothesis five was formulated to respond to research objective two which looked at the relationship between employee-organisation interactions

and project success.

As noted by Eisenberger, R., Huntington, R., Hutchison, S., & Sowa, (1986), employees reciprocate positive organisational behaviour with improved worked performance and organisational citizenship behaviour leading to better organisational outcomes. This reciprocal behaviour, known as perceived organisational support, was assessed in a South African projects environment as per hypothesis one and was found to extend previous literature which mainly focused on the construct perceived organisation support in an organisational setting (Kurtessis et al., 2015; Wayne et al., 1997). It can therefore be assumed that the positive employee behaviours displayed in an organisational setting as a result of high perceived organisational support, will also be presented in a projects type environment if high perceived organisational support is experienced resulting in project success. It can therefore be assumed that the improved employee behaviours due to high perceived organisation support in an organisational setting might also be applicable to high perceived organisation support in a projects environment leading to project success, therefore contributing to existing project success literature from a perceived organisation support perspective (Belout & Gauvreau, 2004).

6.3.6 Hypothesis six

- **Null hypothesis six (H6₀):** No significant relationship exists between perceived organisational support and discretionary effort in a projects environment.
- **Alternate hypothesis six (H6₁):** A significant relationship exists between perceived organisational support and discretionary effort in a projects environment.

The hypothesis was tested using regression analysis, perceived organisational support is found not to have a significant relationship with discretionary effort, therefore the null hypothesis is accepted and the alternate hypothesis is rejected. Hypothesis six was formulated to respond to research objective two which looked at the relationship between employee-organisation interactions and project success.

The reciprocal relationship between the organisation and the employee, suggested that a high quality relationship would result in positive employee behaviour, however a dissatisfactory relationship would effect the project outcome (Kurtessis et al., 2015; Parker & Skitmore, 2005; Linda Rhoades & Eisenberger, 2002). The results of this analysis do not support these studies and further contradict the claims put forward by L Rhoades et al., (2001) that employees will put in an additional effort to reciprocate preferential treatment by organisations. This result

also contradicted the study put forward by Neves & Eisenberger, (2012) which suggested that perceived organisational support influences discretionary behaviours.

6.3.7 Hypothesis seven

- **Null hypothesis seven (H7₀):** No significant relationship exists between affective commitment and discretionary effort in a projects environment.
- **Alternate hypothesis seven (H7₁):** A significant relationship exists between affective commitment and discretionary effort in a projects environment.

The hypothesis was tested using regression analysis, affective commitment is found to have a significant relationship with discretionary effort, therefore the null hypothesis is rejected and the alternate hypothesis is accepted. Hypothesis seven was formulated to respond to research objective two which looked at the relationship between employee-organisation interactions and project success.

Meyer, Stanley, Herscovitch, & Topolnytsky, (2002) suggested that affective commitment adds the most value and benefits to organisation through better employee exchanges and work performance, the result of the analysis supports this as affective commitment results in discretionary effort where employees go beyond what is required to complete the task. The result was also consistent with the findings from Jaussi, (2007).

6.3.8 Hypothesis eight

- **Null hypothesis eight (H8₀):** No significant relationship exists between discretionary effort and project success in a projects environment.
- **Alternate hypothesis eight (H8₁):** A significant relationship exists between discretionary effort and project success in a projects environment.

The hypothesis was tested using regression analysis, discretionary effort is found not to have a significant relationship with project success, therefore the null hypothesis is accepted and the alternate hypothesis is rejected. Hypothesis eight was formulated to respond to research objective two which looked at the relationship between employee-organisation interactions and project success.

The results of this analysis did not align with the study by Dubinsky & Skinner, (2002) which suggests discretionary effort is a sought after approach to reach organisational success. Lloyd, (2008), was also contradicted as she suggested that the additional effort of employees leads

to better work performance and effective outcomes.

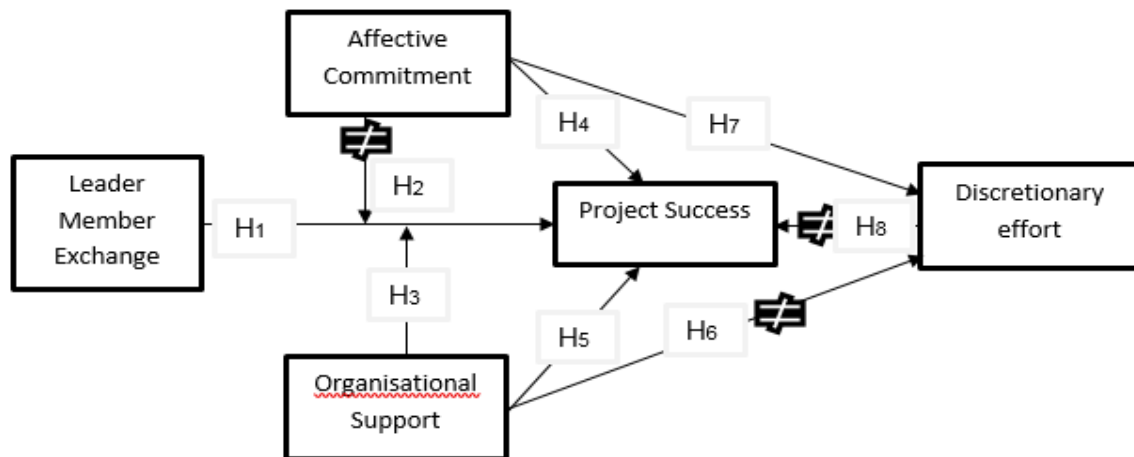
Conclusion

The three research objectives, stated in chapter three, were investigated and discussed in this chapter. The relationship between the employee-manager and employee-organisation interactions were examined using the four constructs and the three research objectives were met.

Affective commitment was found not to have a moderating effect on the relationship between leader-member exchange and projects success. Perceived organisational support did not have a predictive relationship with discretionary effort and a significant relationship between discretionary effort and project success was not established. These findings contradicted literature as the positive outcomes and reciprocity traits of both affective commitment and perceived organisational support have been confirmed previously. Voluntary work behaviour as described by discretionary effort did not contribute to project success which challenged both literature and conventional thinking that extra work effort will lead to success.

The remainder of the interactions and relationships proposed were confirmed and are listed and depicted on figure 3 below.

Figure 5: Summary of findings



H1: A significant predictive relationship

H2: No significant predictive relationship

H3: A significant predictive relationship

H4: A significant predictive relationship

H5: A significant predictive relationship

H6: No significant predictive relationship

H7: A significant predictive relationship

H8: No significant predictive relationship

CHAPTER 7: CONCLUSION

7.1 Introduction

The primary purpose of this research was to understand the relationship that employee-manager interactions and employee-organisation interactions have on project success in a South African projects environment. This chapter summarises the key findings of the research, highlights the contributions to literature and offers practical suggestions for project managers working in a South African projects environment. Limitations of the study are briefly discussed, followed by recommendations for future research.

7.2 Key Findings

7.2.1 Research Objective One

The first objective of this research was to understand the relationship between employee-manager interactions and project success, this relationship was tested using hypothesis one. Leader-member exchange (LMX) was found to have a significant predictive relationship with project success which supports the literature on social exchange theory (Cropanzano & Mitchell, 2005; Wayne et al., 1997). This result also contributed to the project success literature as previous project success theory referred to the personnel factor but did not clarify if the relationship perspective was vital to project success (Belout & Gauvreau, 2004; Dilek, O.G.; Sitki, 2016).

Objective one of the research was met due to the result of the study explaining the relationship between leader-member exchange and project success.

7.2.2 Research Objective Two

The second objective of this research was to understand the relationship between employee-organisation interactions and project success. Through this study it was observed that project personnel experienced a predictive relationship with project success through the constructs perceived organisational support and affective commitment supporting organisational support theory (Kurtessis et al., 2015). Another interesting finding was that discretionary effort did not predict project success which contradicted organisational support theory Kurtessis et al., (2015) and suggestions that perceived organisational support influences discretionary behaviours were also contradicted (Neves & Eisenberger, 2012).

A significant relationship between affective commitment and discretionary effort was confirmed which was consistent with the findings from Jaussi, (2007). It was confirmed that

discretionary effort does not have a significant relationship with project success, contradicting the discretionary effort literature which suggest that additional effort of employees leads to better work performance and effective outcomes (Rosemarie Lloyd, 2008).

In summary objective two of the research was met, the constructs affective commitment and perceived organisational support explain the employee-organisation interactions with project success while surprisingly discretionary effort does not contribute to project success. Therefore affective commitment and perceived organisational support are consistent with the organisational support theory literature Kurtessis et al., (2015) and contributed to the project success literature (Belout & Gauvreau, 2004).

7.2.3 Research Objective Three

The third objective of this research was to understand the effect of employee-organisation interactions on employee-manager interactions relating to project success, these relationships were tested using perceived organisational support and affective commitment as moderators.

Affective commitment did not have a significant effect on the relationship between leader-member exchange and project success, which was not consistent with the typical positive outcomes of organisational support theory (Kurtessis et al., 2015). However, perceived organisational support did have a significant effect on the relationship between leader-member exchange and project success which aligned with organisational support theory (Kurtessis et al., 2015).

In summary, only perceived organisational support was confirmed as a moderator due to the influence on the employee-manager interactions.

7.2.4 Implications for Theory

The results of the study objectives support the existing literature on social exchange theory and organisational support theory (Kurtessis et al., 2015; Wayne et al., 1997). The positive outcomes of leader-member exchange, perceived organisational support and affective commitment are noted by their predictive relationship with project success. However, most of the social exchange and organisational support literature refers to these constructs in an organisational setting and not a projects environment, therefore the result of this study contributes to the project success literature. Further to this, it is evident that previous project success studies have focused on high level human resource factors, compared to this study which examined the interrelationships between project personnel, project managers and project organisations (Belout & Gauvreau, 2004; Dilek, O.G.;Sitki, 2016).

7.3 Implications for Management

Project managers are highly skilled with vast number of technical abilities, however the expectation for them to lead projects, project personnel and simultaneously sustain project success is an ambitious request. The relationship between project managers and project personnel has become vital due to its impact on project success, especially given the result of this study which suggests that this relationship through leader-member exchange is predictive of project success.

The theory of leader-member exchange offers assistance to project managers as it explains that high-quality leader-member exchange relationships will enable project personnel to contribute to project success. Other important benefits are improved employee behaviours such as superior job performance, increased organisational citizenship behaviour, better job satisfaction, decreased turnover intentions and overall organisation commitment.

The goal would be to improve the project personnel-project manager relationship which leads to high-quality leader-member exchange. Project managers would need to consider a transformational leadership style where leaders inspire through motivation and the creation of trust relationships. Effective and transparent communication is another contributor that leads high-quality leader-member exchanges. The project manager should also be aware of in-group and out-group behaviour, in-group behaviour leads to high-quality leader-member exchange relationships. In-group behaviour is achieved when the relationship is based on trust and support.

Wayne et al., (1997) found leader-member exchange to have a positive reciprocal relationship with perceived organisational support due to favourable treatment of employees, which highlights a further implication that the project personnel-project manager relationship has an impact on the relationship that project personnel will have with the organisation. Therefore, project managers through leader-member exchange will have a further impact on project personnel's work performance and respective relationship with the organisation.

The project manager can support increased perceived organisational support by ensuring that project personnel's requests of the organisation are either met or addressed timeously. Higher perceived organisational support is achieved through fair treatment, favourable reward conditions, supervisor support, open communication from organisation and on-going training.

The role of project managers is vital as they influence the employee-organisation and employee-manager relationships which dictate employee behaviours.

7.4 Limitations of the Research

Non-probability sampling was used due to the researcher not having knowledge and access of the entire population of project personnel in South Africa. Although the sample size was adequate for the study, a probability sampling method would increase the accuracy of the findings.

The study was limited to project personnel and project managers in a project environment, however there are other functional and senior managers that might influence the project personnel-project manager and project personnel-organisation relationships. Therefore, the results from this study may not be generalisable.

The qualitative nature of this study provides empirical evidence, however the structured nature of surveys does not allow respondents to explain or give context to their responses. Further to this, potential technical difficulties related to online surveys can also affect responses.

A cross-sectional design methodology was taken due to time and cost constraints, due to the dynamic environment of projects a longitudinal study might provide differing results.

7.5 Recommendations for Future Research

The constructs leader-member exchange, perceived organisational support, affective commitment and discretionary effort were tested as predictors to project success, however it would be valuable to focus on the specific outcome behaviours of each construct to determine which would play a significant role in achieving projects success. This could further assist project managers in being more specific with support to nurture behaviours that result in positive outcomes.

Transformational leadership and transactional leadership were briefly discussed in the leader-member exchange literature, studying the moderating effect of leadership style on the relationship between leader-member exchange and project success would bring more insight on how a project manager impacts employee-manager relationships.

The replication of this study in countries neighbouring South Africa would bring insight on whether other cultures would influence the interwork relationships, and would assist organisations that are investigating the possibility of expanding into Africa.

7.6 Conclusion

The purpose of this research was to understand the relationship that employee-manager

interactions and employee-organisation interactions have on project success in a South African projects environment, focusing on project personnel and project managers as employees of project organisations. Project success has become critical due to the increased pressure on South African organisations to contribute to the economy. The results of this study suggest that focusing on the employee-manager and employee-organisation relationships will lead to project success.

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APPENDIX 1 – MEASUREMENT INSTRUMENT

Section 1: Biographical data

1. Age
 - 20 – 29
 - 30 – 39
 - 40 – 49
 - 50 – 59
 - 60 – 69
 - 70 and above

2. Tenure in organisation while working on projects
 - < 2 years
 - 2 – 5 years
 - 6 – 9 years
 - 10 – 14 years
 - 15 – 19 years
 - >20 years

3. What is your seniority in level in the organisation?
 - Junior
 - Middle
 - Senior

4. Do you currently work in a *projects* type environment?
(In this context *projects* can be defined as any time-based activity to produce a unique service, product or result).
 - Yes
 - No

5. What is your main role in the project team(s) you work with?
 - Project manager
 - Project personnel (Project personnel defined as employees working on a specific project who are responsible to help achieve project goals)

Section 2: Leader member exchange

1 – Strongly Disagree; 2 – Disagree; 3 – Neither Agree or Disagree; 4 – Agree;

5 - Strongly Agree

1. These questions are related to your interaction with your manager

	1	2	3	4	5
Do you know where you stand with your project manager?					
Do you usually know how satisfied your project manager is with what you do?					
Does your project manager understand your job problems and needs?					
Does your project manager recognise your potential?					
Regardless of how much formal authority your project manager has built into his/her position, would you agree he/she would use their power to solve your problems in your work?					
Again, regardless of the amount of formal authority your project manager has, would you agree that he/she would "bail you out", at his/her expense?					
I have enough confidence in my project manager that I would defend and justify his/her decision if he/she were not present to do so?					
Would you characterise your working relationship with your project manager as effective?					

Section 3: Perceived organisational support

	1	2	3	4	5
My organisation cares about my opinions					
My organisation really cares about my well-being					
My organisation strongly considers my goals and values					
Help is available from my organisation when I have a problem					
My organisation would forgive an honest mistake on my part					
If given the opportunity, my organisation would take advantage of me					
My organisation shows very little concern for me					
My organisation is willing to help me if I need a special favour					

Section 4: Affective commitment

	1	2	3	4	5
I feel a strong sense of belonging to my organisation					
I feel personally attached to my work					
I am proud to tell others that I work at my organisation					
Working at my organisation has a great deal of personal belonging to me					
I would be happy to work at my organisation until I retire					
I really feel that problems faced by organisation are also my problems					

Section 5: Project Success

	1	2	3	4	5
Technical requirements specified at the beginning of the execution phase were met					
Project schedules were adhered to					
Project cost objectives were not met					
Project clients and/or product users were satisfied with the project outputs					
The project has not perturbed the culture or values of the organization that managed it					
The project was not managed so as to satisfy the interests and challenges of the members of the project team					
There were no quality problems related to project outputs					
Technical problems were successfully identified and resolved					
The project output could easily be replicated and marketed					

Section 6: Discretionary Effort

	1	2	3	4	5
When I work, I really exert myself to the fullest, beyond what is expected					
I finish a job even if it means sacrificing breaks or lunches					
I do more than is expected of me					
I voluntarily put in extra hours to achieve a result faster					
I persist in overcoming obstacles to complete an important task					
I put in extra effort when I find it necessary					
I work harder than expected to help my organisation to be successful					

APPENDIX 2 – ETHICAL CLEARANCE

Gordon Institute of Business Science

University
of Pretoria

14 June 2017

Preneshen Naidu

Dear Preneshen,

Please be advised that your application for Ethical Clearance has been approved.

You are therefore allowed to continue collecting your data.

We wish you everything of the best for the rest of the project.

Kind Regards

GIBS MBA Research Ethical Clearance Committee

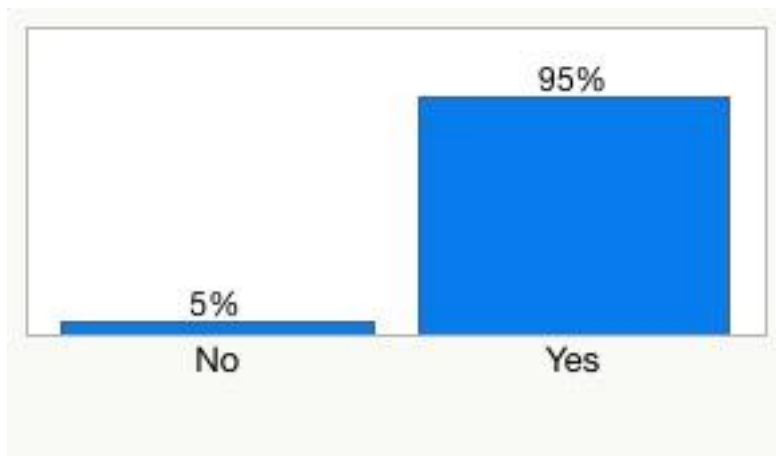
APPENDIX 3 – CONSISTENCY MATRIX

Hypotheses	Literature review	Data collection tool	Analysis
H1: No significant relationship exists between leader-member exchange and project success in a projects environment.	(Dansereau et al., 1975) (Blau, 1964) (Gouldner, 1960) (Cropanzano & Mitchell, 2005) (George B. Graen & Uhl-Bien, 1995) (G. B. Graen & Scandura, 1987) (Lunenborg, 2010) (Dulebohn et al., 2012)	Recommended Measure of LMX (LMX 7) (George B. Graen & Uhl-Bien, 1995) Overall project success scale (Belout & Gauvreau, 2004)	Multiple-linear regression
H2: The relationship between leader-member exchange and project success is not moderated by affective commitment in a projects environment.	(Allen & Meyer, 1990a) (Allen & Meyer, 1991) (Jaussi, 2007) (Mercurio, 2015) (Meyer et al., 2002) (Famakin & Abisuga, 2016)	AC scale (L Rhoades et al., 2001) Scale adapted from the work by (Allen & Meyer, 1990a)	Multiple-linear regression (moderator analysis)
H3: The relationship between leader-member exchange and project success is not moderated by perceived organisational support in a projects environment.	(Eisenberger, R. and Huntington, 1986) (Cropanzano & Mitchell, 2005) (Wayne et al., 1997) (Kurtessis et al., 2015)	Measure of POS (R Eisenberger et al., 1997)	Multiple-linear regression (moderator analysis)
H4: No significant relationship exists between affective commitment and project success in a projects environment.	(Allen & Meyer, 1990a) (Allen & Meyer, 1991) (Jaussi, 2007) (Mercurio, 2015) (Meyer et al., 2002)	AC scale (L Rhoades et al., 2001) Scale adapted from the work by (Allen & Meyer, 1990a)	Multiple-linear regression

		Overall project success scale (Belout & Gauvreau, 2004)	
H5: No significant relationship exists between perceived organisational support and project success in a projects environment.	(Eisenberger, R. and Huntington, 1986) (Cropanzano & Mitchell, 2005) (Wayne et al., 1997) (Kurtessis et al., 2015) (Belout & Gauvreau, 2004) (Müller & Jugdev, 2012) (Müller et al., 2010)	Measure of POS (R Eisenberger et al., 1997) Overall project success scale (Belout & Gauvreau, 2004)	Multiple-linear regression
H6: No significant relationship exists between perceived organisational support and discretionary effort in a projects environment.	(Eisenberger, R. and Huntington, 1986) (Cropanzano & Mitchell, 2005) (Wayne et al., 1997) (Kurtessis et al., 2015) (Rosemarie Lloyd, 2008) (R. Lloyd, 2003)	Measure of POS (R Eisenberger et al., 1997) DE scale (Rosemarie Lloyd, 2008)	Multiple-linear regression
H7: No significant relationship exists between affective commitment and discretionary effort in a projects environment.	(Allen & Meyer, 1990a) (Allen & Meyer, 1991) (Jaussi, 2007) (Mercurio, 2015) (Meyer et al., 2002) (Rosemarie Lloyd, 2008) (R. Lloyd, 2003)	AC scale (L Rhoades et al., 2001) Scale adapted from the work by (Allen & Meyer, 1990a) DE scale (Rosemarie Lloyd, 2008)	Multiple-linear regression
H8: No significant relationship exists between discretionary effort and project success in a projects environment.	(Rosemarie Lloyd, 2008) (R. Lloyd, 2003) (Belout & Gauvreau, 2004) (Müller & Jugdev, 2012) (Müller et al., 2010)	DE scale (Rosemarie Lloyd, 2008) Overall project success scale (Belout & Gauvreau, 2004)	Multiple-linear regression

APPENDIX 4 – STATISTICAL ANALYSIS RESULTS

Distributions – Biographical variables



Frequencies

Level	Count	Prob
No	9	0.04737
Yes	181	0.95263
Total	190	1.00000

N Missing 2

2 Levels

ONLY use 181

Q2	N	Column %
< 2 years	14	7.78%
10 – 14 years	37	20.56%
15 – 19 years	38	21.11%
2 – 5 years	50	27.78%
6 – 9 years	41	22.78%
All	180	100.00%

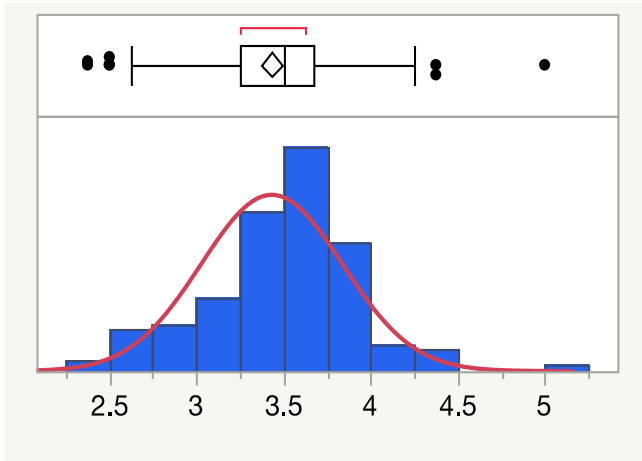
Q3	N	Column %
20 – 29	15	8.29%
30 – 39	58	32.04%
40 – 49	51	28.18%
50 – 59	37	20.44%
60 – 69	19	10.50%
70 and above	1	0.55%
All	181	100.00%

4	N	Column %
Yes	181	100.00%
All	181	100.00%

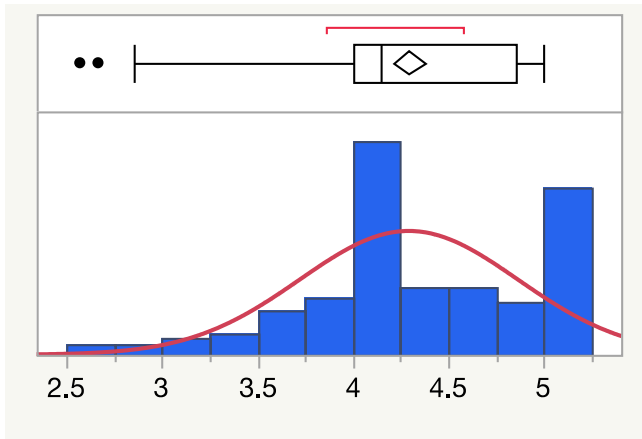
3	N	Column %
Junior	11	6.15%
Middle	83	46.37%
Senior	85	47.49%
All	179	100.00%

Q5	N	Column %
Project manager	126	69.61%
Project personnel (Project personnel defined as employees working on a specific project who are responsible to help achieve project goals)	55	30.39%
All	181	100.00%

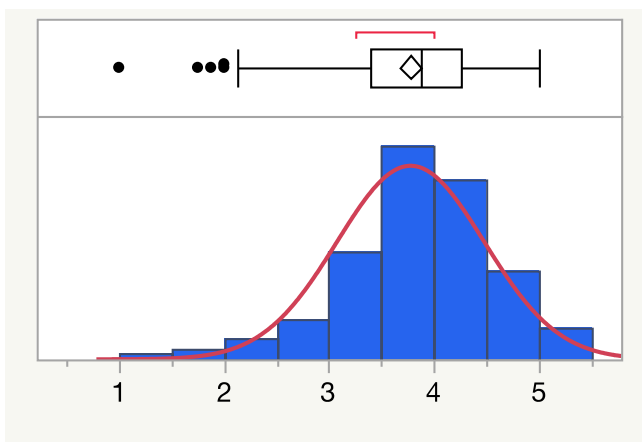
Distributions - Constructs



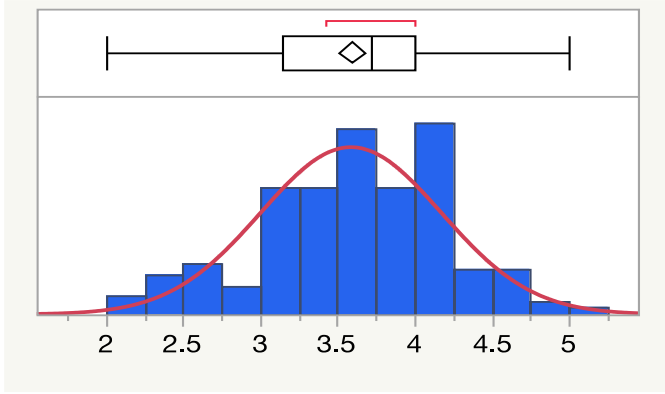
POS: Normal(3.43314,0.40602)



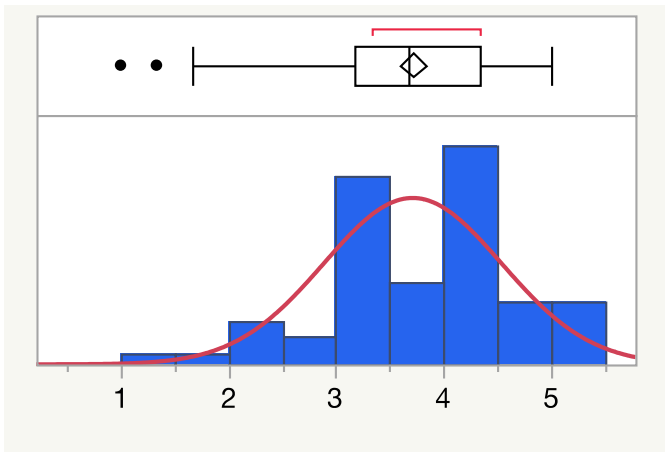
DE: Normal(4.29308,0.57152)



LMX: Normal(3.77708,0.70098)



PS: Normal(3.58879,0.58606)



Normal(3.71271,0.82535)

Communalities

	Initial	Extraction
LMX1	.716	.691
LMX2	.709	.613
LMX3	.704	.696
LMX4	.633	.553
LMX5	.633	.578
LMX6	.507	.433
LMX7	.533	.526
LMX8	.715	.698
POS1	.706	.627
POS2	.767	.757
POS3	.802	.766
POS4	.673	.586
POS5	.593	.500
POS6	.523	.497
POS7	.729	.723
POS8	.510	.332
AC1	.804	.732

AC2	.735	.661
AC3	.725	.684
AC4	.773	.788
AC5	.599	.552
AC6	.557	.528
PS1	.579	.609
PS2	.510	.494
PS3	.360	.223
PS4	.603	.548
PS5	.320	.271
PS6	.343	.233
PS7	.529	.537
PS8	.623	.614
PS9	.455	.349
DE1	.682	.591
DE2	.682	.652
DE3	.744	.690
DE4	.719	.715
DE5	.710	.702

DE6	.793	.759
DE7	.816	.767

Extraction Method: Principal Axis Factoring.

Multivariate Correlations

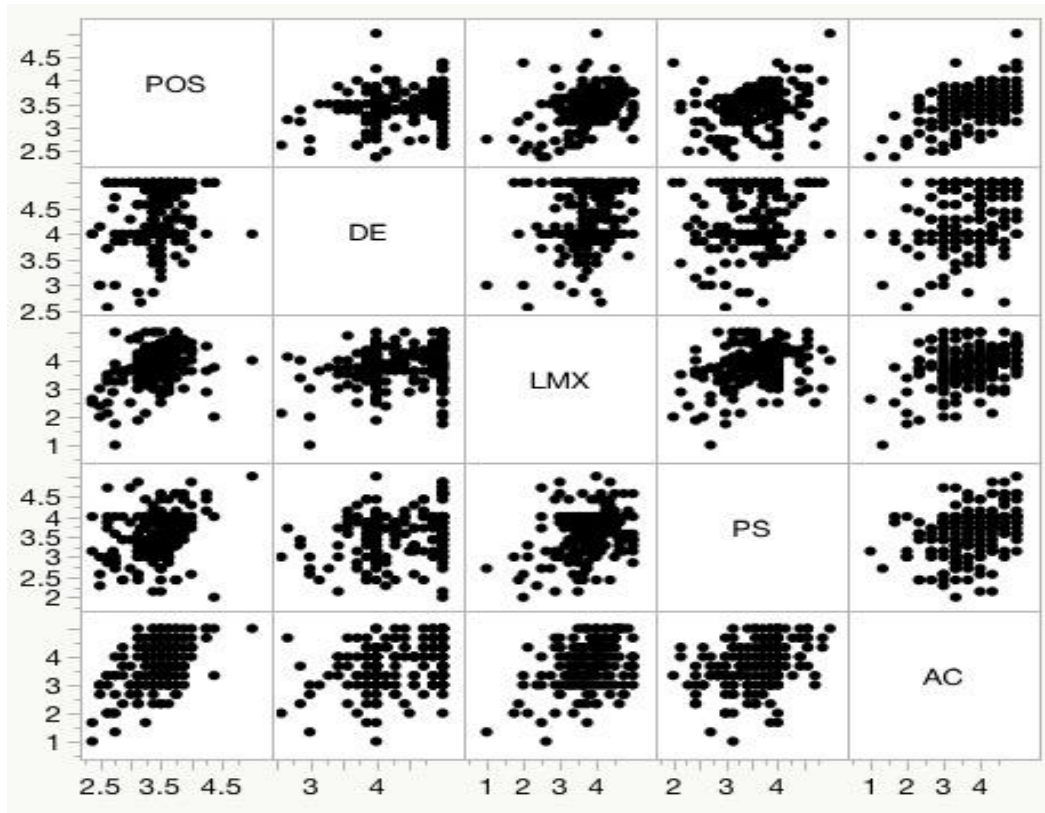
	POS	DE	LMX	PS	AC
POS	1.0000	0.1990	0.3669	0.3032	0.5083
DE	0.1990	1.0000	0.2282	0.2474	0.3329
LMX	0.3669	0.2282	1.0000	0.3138	0.3856
PS	0.3032	0.2474	0.3138	1.0000	0.3549
AC	0.5083	0.3329	0.3856	0.3549	1.0000

There are 1 missing values. The correlations are estimated by REML method.

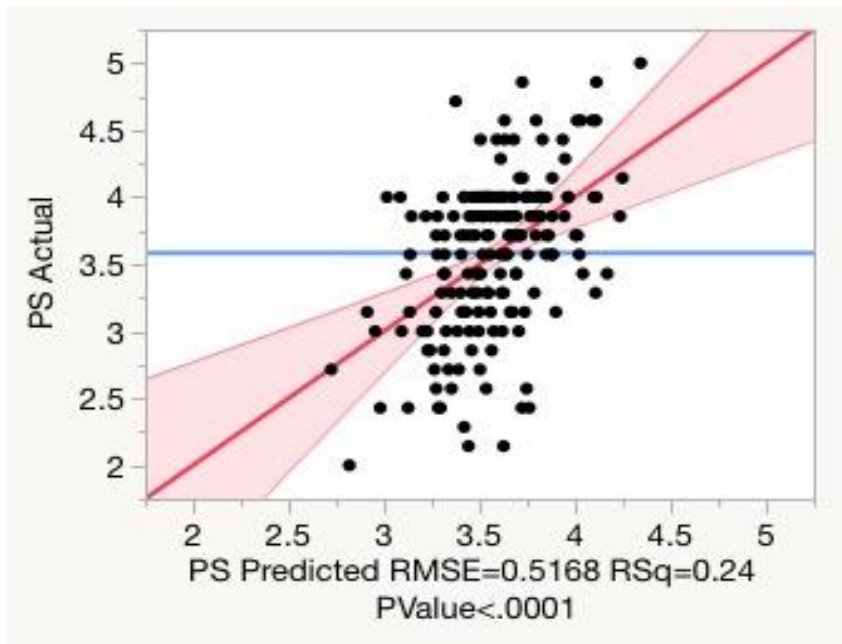
Correlation Probability

	POS	DE	LMX	PS	AC
POS	<.0001	0.0072	<.0001	<.0001	<.0001
DE	0.0072	<.0001	0.0021	0.0008	<.0001
LMX	<.0001	0.0021	<.0001	<.0001	<.0001
PS	<.0001	0.0008	<.0001	<.0001	<.0001
AC	<.0001	<.0001	<.0001	<.0001	<.0001

Scatterplot Matrix



Response PS Whole Model Actual by Predicted Plot

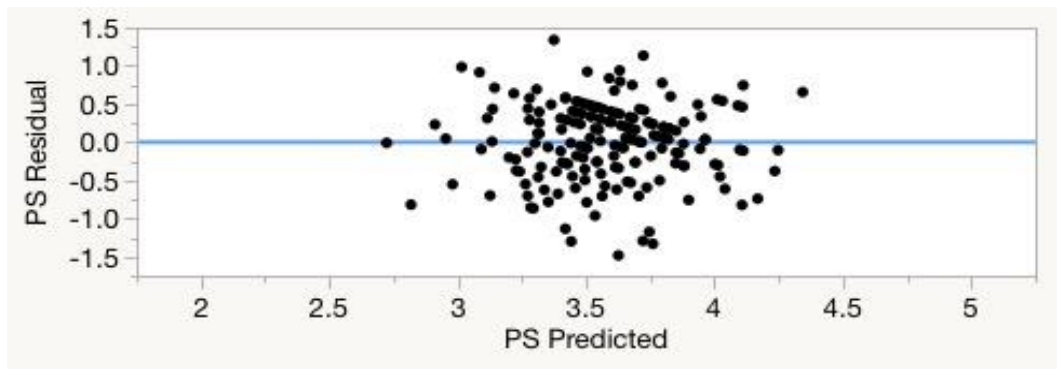


Effect Summary

Source	LogWorth	PValue
POS*LMX	2.480	0.00331
POS	1.964	0.01086 ^
AC	1.861	0.01376
LMX	1.794	0.01607 ^

Source	LogWorth	PValue
DE	1.015	0.09670
LMX*AC	0.618	0.24099

Residual by Predicted Plot



Summary of Fit

RSquare	0.237012
RSquare Adj	0.21055
Root Mean Square Error	0.516761
Mean of Response	3.58254
Observations (or Sum Wgts)	180

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	6	14.350865	2.39181	8.9567
Error	173	46.198341	0.26704	Prob > F
C. Total	179	60.549206		<.0001*

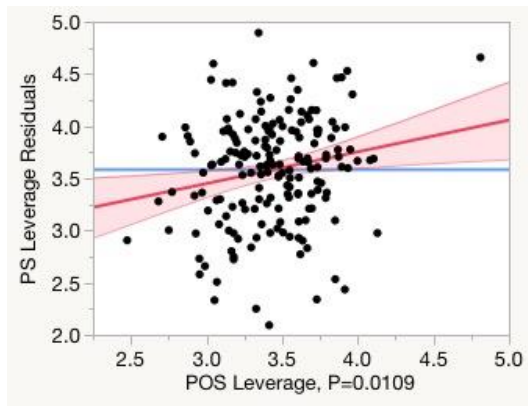
Parameter Estimates

Term	Estimate	Std Error	t Ratio	Prob> t	Lower 95%	Upper 95%	Std Beta	VIF
Intercept	0.8596761	0.463334	1.86	0.0652	-0.054839	1.7741911	0	.
POS	0.3041636	0.118127	2.57	0.0109*	0.071008	0.5373192	0.210561	1.5162394
AC	0.1440219	0.057866	2.49	0.0138*	0.029807	0.2582368	0.204829	1.5357023
LMX	0.1572934	0.064701	2.43	0.0161*	0.0295888	0.284998	0.189579	1.3788255
DE	0.121314	0.072637	1.67	0.0967	-0.022055	0.2646827	0.119031	1.1517026
(POS-3.43763)*(LMX-3.77708)	0.4326461	0.145263	2.98	0.0033*	0.1459295	0.7193627	0.274648	1.9280851
(LMX-3.77708)*(AC-3.71481)	-0.065779	0.077392	-1.18	0.2410	-0.207225	0.0524402	-0.10647	1.8566382

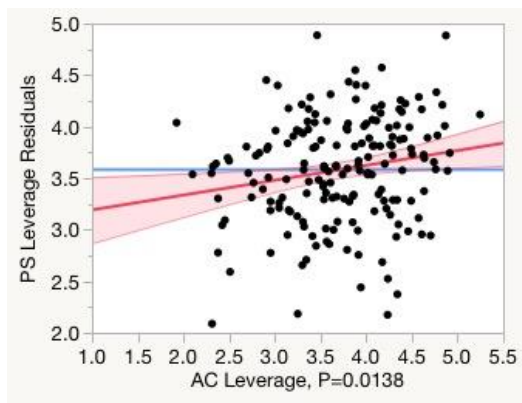
Effect Tests

Source	Nparm	DF	Sum of Squares	F Ratio	Prob > F
POS	1	1	1.7705029	6.6300	0.0109*
AC	1	1	1.6541901	6.1945	0.0138*
LMX	1	1	1.5782714	5.9102	0.0161*
DE	1	1	0.7448805	2.7894	0.0967
POS*LMX	1	1	2.3688299	8.8706	0.0033*
LMX*AC	1	1	0.3696606	1.3843	0.2410

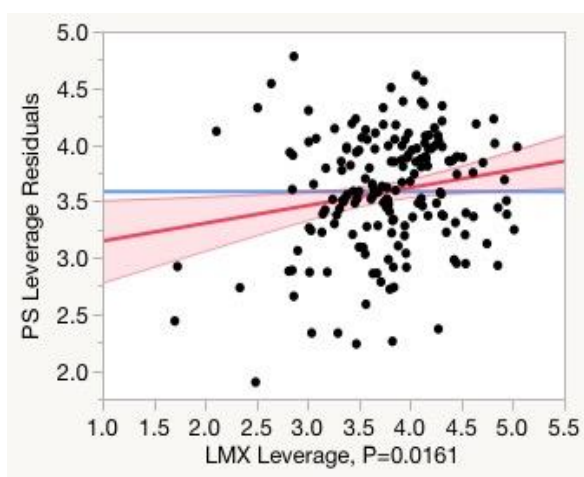
POS Leverage Plot



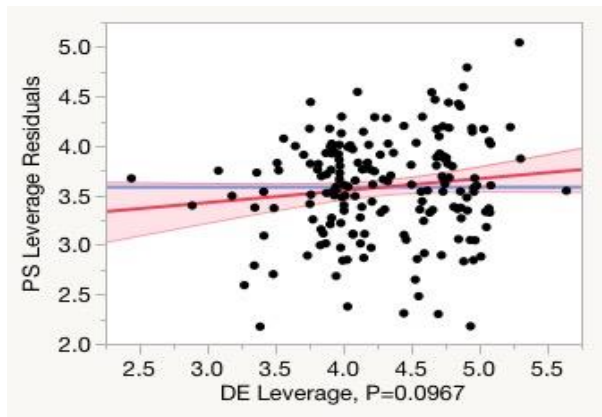
AC Leverage Plot



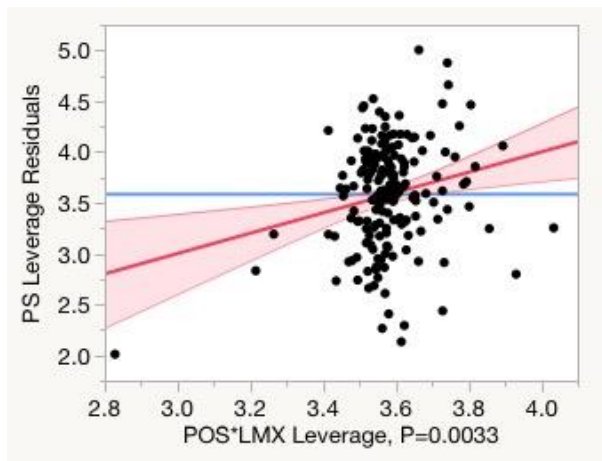
LMX Leverage Plot



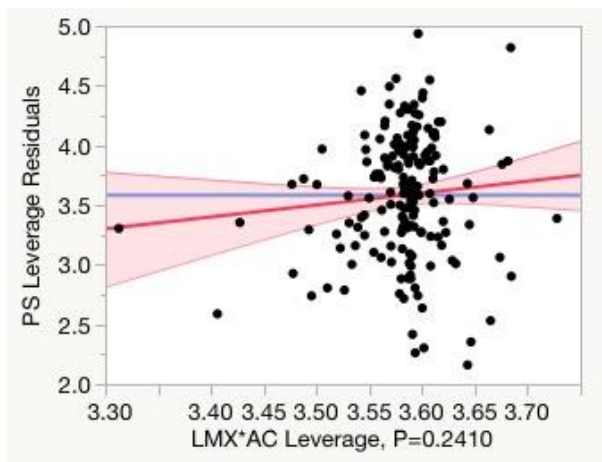
DE Leverage Plot



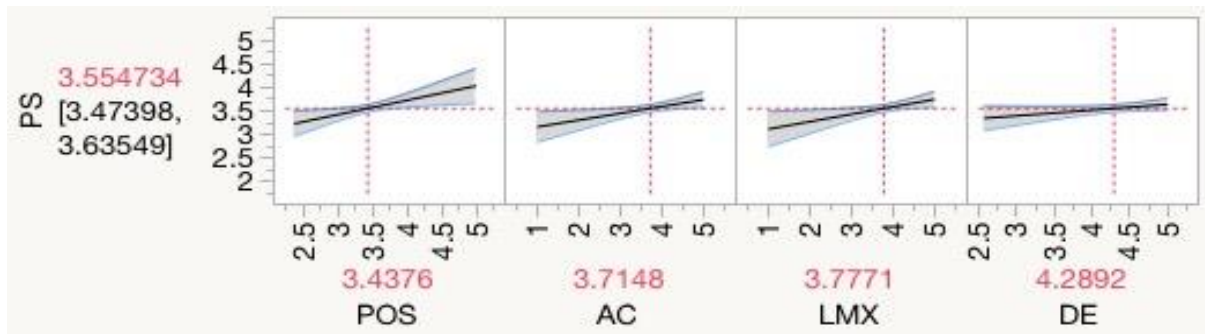
POS*LMX Leverage Plot



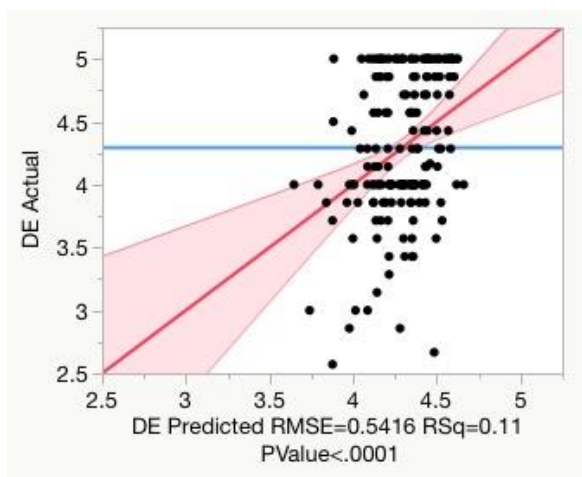
LMX*AC Leverage Plot



Prediction Profiler



Response DE Whole Model Actual by Predicted Plot



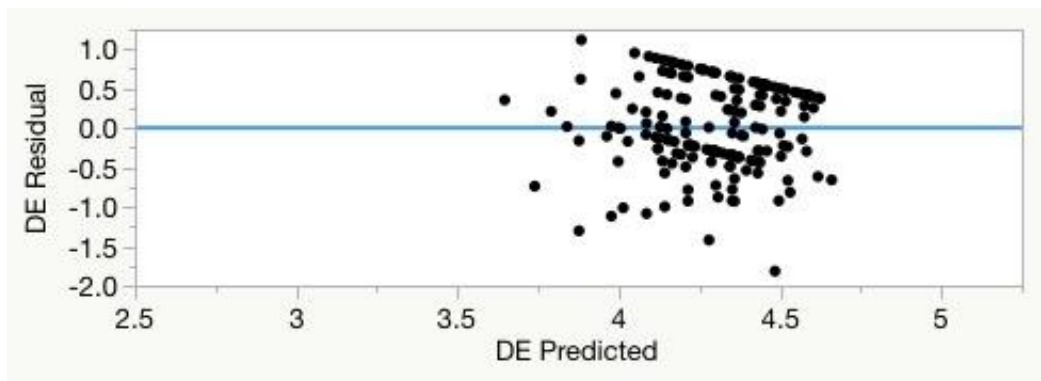
Effect Summary

Source	LogWorth	PValue
AC	3.718	0.00019
POS	0.204	0.62481

Lack Of Fit

Source	DF	Sum of Squares	Mean Square	F Ratio
Lack Of Fit	85	27.034211	0.318050	1.1749
Pure Error	93	25.174358	0.270692	Prob > F
Total Error	178	52.208568		0.2232
				Max RSq
				0.5718

Residual by Predicted Plot



Summary of Fit

RSquare	0.112009
RSquare Adj	0.102032
Root Mean Square Error	0.541578
Mean of Response	4.293081
Observations (or Sum Wgts)	181

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	2	6.585465	3.29273	11.2262
Error	178	52.208568	0.29331	Prob > F
C. Total	180	58.794033		<.0001*

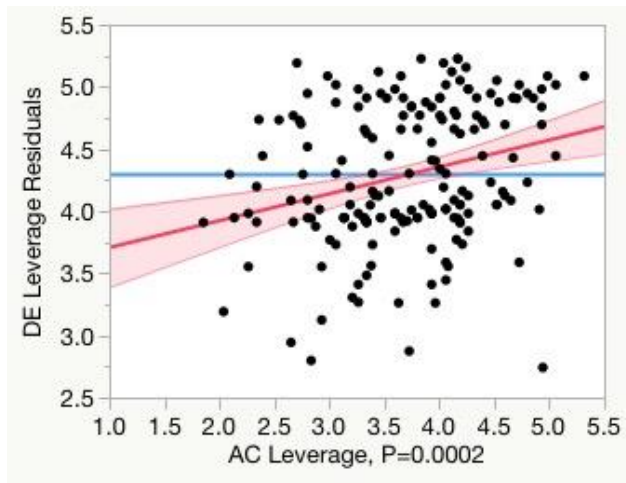
Parameter Estimates

Term	Estimate	Std Error	t Prob> t	Lower 95%	Upper 95%	Std Beta	VIF
Intercept	3.295611	0.343819	9.59 <.0001*	2.6171248	3.9740973	0	.
AC	0.2163669	0.056791	3.81 0.0002*	0.1042959	0.3284379	0.312463	1.3483134
POS	0.0565554	0.115444	0.49 0.6248	-0.17126	0.2843705	0.040178	1.3483134

Effect Tests

Source	Nparm	DF	Sum of Squares	F Ratio	Prob > F
AC	1	1	4.2573473	14.5150	0.0002*
POS	1	1	0.0703926	0.2400	0.6248

AC Leverage Plot



POS Leverage Plot

