LEADERSHIP STYLE IN PROJECT MANAGERS: WHAT DO PROJECT TEAM MEMBERS WANT?

by Hakim Ahmad

FILE	PG-2014-13UEM02353-1_DRAFT4_WO_REF.DOCX (1.24M)		
TIME SUBMITTED	30-JAN-2014 02:02AM	WORD COUNT	21026
SUBMISSION ID	390425457	CHARACTER COUNT	120107

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By

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A project report submitted to the Department of IPSR,
Faculty of Engineering and Science,
Universiti Tunku Abdul Rahman,
in partial fulfilment of the requirements for the degree of
Masters of Science in Project Management
February 2014

DECLARATION

I hereby declare that the dissertation is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at UTAR or other institutions.

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APPROVAL SHEET

This dissertation/thesis entitled "**LEADERSHIP STYLE IN PROJECT MANAGERS: WHAT DO PROJECT TEAM MEMBERS WANT?**" was prepared by AHMAD HAKIM BIN ABDUL RAHMAN and submitted as partial fulfillment of the requirements for the degree of Master of Science in Project Management at Universiti Tunku Abdul Rahman.

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A son's contribution to

his mother's favourite topic on Management and Leadership.

ABSTRACT

LEADERSHIP STYLE IN PROJECT MANAGERS: WHAT DO PROJECT TEAM MEMBERS WANT?

Ahmad Hakim bin Abdul Rahman

Organizations going through change may introduce projects to get where they want to be – set with objectives, deliverables and timelines. The downside of introducing projects is the availability of best-fit project managers, taking into consideration the multi-faceted complexities of juggling both the people aspect in the project as well as the technical. Malaysian collectivist society with high power distance and reluctance to deal with the unknown may add a different flavour to project leadership style that is different from the western literature.

Project team members and the gender they represent may have their own selection of criteria to identify who is best to lead. Will the selected project manager be someone who is *change-oriented* (transformational), *task-oriented* (transactional) or *relations-oriented* (participative)? Will their level of relationship with the project manager influence their choices?

Two theories are considered in this study – Leader-Member eXchange to address the relationship between the project team and their project manager from the project team's point of view, and Yukl's Three Dimensional Model to identify the project team's choice of project leadership. Eighty-two (82) respondents participated in the study. They had played a role of a team member for at least one (1) year in a project based in Malaysia. Correlation, ANOVA, T-test and Chi Square Test are applied to derive the survey results.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF SYMBOLS / ABBREVIATIONS

LMX	Leader-Member eXchange
TO	Task-Oriented
RO	Relations-Oriented
CO	Change-Oriented

LIST OF APPENDICES

Appendix **Page**

CHAPTER

1 INTRODUCTION

This study questions the western empirical research on Leader-Member eXchange (LMX) and leadership styles – specifically, task-oriented (or transactional leadership), relations-oriented (or participative leadership), and change-oriented (or transformational leadership), and its applicability in projects delivered in Malaysia.

The aim is to establish the leadership style of a project manager based on the perceived high/low LMX and possibly being influenced by the gender of the project team members.

1.1 The Research Problem

The researcher seeks to analyse and prove that project team members or followers have individual preference of project leaders. It is observed from scholars writing that Western leadership literature prefers a top-down approach in determining leadership styles; hence, the leadership style is determined from a management perspective. However, this study takes a different approach, an upward approach where the project team members evaluate their relationship with their project leaders. In effect, the study may suggest whether the project leaders display transformational leadership style, participative or transactional.

1.2 The Purpose of the Study

The research calls for the identification of project leadership styles from the project team's viewpoint of projects implemented in Malaysia. The relationship between followers and their leaders is measured and correlated to the project managers' leadership style. These findings may also pinpoint if followers' gender plays a role in influencing the relationship and/or in determining the project managers' leadership style.

> Leadership is not a license to do less; it is a responsibility to do more. And that's the trouble. Leadership takes work. It takes time and energy. The effects are not always easily measured and they are not always immediate. Leadership is always a commitment to human beings. (Sinek 2014, p. 214)

The hypotheses under study are as follows:

Hypothesis 1.	There is a relationship between followers' high/low LMX and project managers' leadership style.	
	Hypothesis 1a.	Followers with high LMX relationships with project managers prefer change-oriented leadership.
	Hypothesis 1b.	Followers with low LMX relationships with project managers prefer task-oriented leadership.
Hypothesis 2.	There is a relationship between followers' high/low LMX and gender.	
	Hypothesis 2a.	High LMX relationships affect male followers.
	Hypothesis 2b.	Low LMX relationships affect female followers.
Hypothesis 3.	There is a relationship between followers' gender and project managers' leadership style.	
	Hypothesis 3a.	Female followers prefer relations-oriented

		leadership.
	Hypothesis 3b.	Male followers prefer task-oriented leadership.

1.3 The Rationale of the Study

There is no hard and fast rule with regards to what would work for project teams in Malaysian projects. From a standards point of view, Project Management Body of Knowledge by Project Management Institute (2013) has the processes identified and currently being practised globally (**Table** 1-1). However, project managers may end up customising the work processes due to time constraints to meet the market opportunity. It then boils down to person-to-project suitability. If the project manager selection criteria follow the western ideas of best-fit person to manage change, this may not be effective as Malaysia is known for its collectivist culture, high power distance and low tolerance of the unknown.

Table 1-1: Ten (10) Knowledge Areas in Project Management

Knowledge Areas	Project Management Process Groups				
	Initiating Process Group	**Planning Process Group**	**Executing Process Group**	**Monitoring and Controlling Process Group**	**Closing Process Group**
1.Project Integration Management	1.1Develop Project Charter	1.2Develop Project Management Plan	1.3Direct and Manage Project Work	1.4Monitor and Control Project Work 1.5Perform Integrated Change Control	1.6Close Project or Phase
2.Project Scope Management		2.1Plan Scope Management 2.2Collect Requirements 2.3Define Scope 2.4Create WBS		2.5Validate Scope 2.6Control Scope	
3.Project Time Management		3.1Plan Schedule Management 3.2Define		3.7Control Schedule	

Knowledge Areas	Project Management Process Groups				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring and Controlling Process Group	Closing Process Group
		Activities 3.3Sequence Activities 3.4Estimate Activity Resources 3.5Estimate Activity Durations 3.6Develop Schedule			
4.Project Cost Management		4.1Plan Cost Management 4.2Estimate Costs 4.3Determine Budget		4.4Control Costs	
5.Project Quality Management		5.1Plan Quality Management	5.2Perform Quality Assurance	5.3Control Quality	
6.Project Human Resource Management		6.1Plan Human Resource Management	6.2Acquire Project Team 6.3Develop Project Team 6.4Manage Project Team		
7.Project Communications Management		7.1Plan Communications Management	7.2Manage Communications	7.3Control Communications	
8.Project Risk Management		8.1Plan Risk Management 8.2Identify Risks 8.3Perform Qualitative Risk Analysis 8.4Perform Quantitative Risk Analysis 8.5Plan Risk Responses		8.6Control Risks	
9.Project Procurement Management		9.1Plan Procurement Management	9.2Conduct Procurements	9.3Control Procurements	9.4Close Procurements
10.Project Stakeholder Management	10.1Identify Stakeholders	10.2Plan Stakeholder Management	10.3Manage Stakeholder Engagement	10.4Control Stakeholder Engagement	

Source: Project Management Institute 2013, p. 43

1.3.1 Previous Research and Rationale

The study begins with the project team performing LMX self-assessment. The purpose of the LMX self-assessment is to seek the project team's opinion of the project manager based on their project experience in one particular project. Whether the project team's feedback is a good indication of their relationship with the project manager, the possibility of a bad experience of "toxic leadership" (Ogunlana and Toor 2009, p. 256) may influence the self-assessment results.

High leader-member relationship indicates the presence of transformational leadership, and low leader-member relationship reflects transactional leadership (Graen and Uhl-Bien 1995, p. 238). Transformational leadership aligns to change-orientation; transactional, task-orientation (cited in Strang 2007, p. 444).

1.3.2 Importance of the Study and Academic Significance

A study by Hofstede, Hofstede and Minkov (2010) discovers that Malaysian society stands as a collectivist group that commonly practises high power distance (ibid, p. 103) and possesses low tolerance for the unknown (ibid, p. 194). Malaysian society does not conform to the western culture; hence, the researcher's findings may invalidate the best-fit leadership styles as presented by the western literature. Miller and Yu (2005) observe the lack of research on leadership styles practised in non-western countries. A subsequent observation made by Garger, Jacques and Thomas (2008) affirms that a similar weakness exists in the areas of leadership in projects.

1.3.3 The Need for the Study

Oftentimes in western literature, the emphasis on specific leadership styles is more focused on the project manager, even less on the project team members. On the subject of leadership styles, Graen, Heinitz and Rowold (2010) emphasise on inclusion of demographics data such as age and gender in determining what skills suit best when selecting the project manager. Some studies were based strictly on one industry and its work environment; hence limiting the project environmental findings to one particular industry (Huang, Wu and Yang 2011; Ogunlana and Toor 2009; Muller and Turner 2007; Moger and Rickards 2000).

This study will delve into the team's perception of a project leader's leadership behaviours based on their past or present project experience in Malaysian projects context, not limiting to one particular industry.

1.4 The Significance of the Study

A study by Hofstede, Hofstede and Minkov (2010) reveals that Malaysia is a collectivist society with high power distance and low tolerance of the unknown. By nature of Malaysia being a collectivist society is already one good reason why western leadership practices may not be successfully implemented by directly embedding them into Malaysian projects; the leadership style chosen by the project team may suggest the relevance of the project team capabilities in executing a project.

1.5 The Scope of the Study

The study will require input from local project team members with project experience in any industry within Malaysia, with project size of small to large scale. Project managers will not be participating in the study.

The study takes the approach of assessing the leader-member exchange (LMX) from the follower's perspective. The follower's gender may influence the choice of project leadership styles – *task-oriented* (or transactional leadership), *relations-oriented* (or participative leadership), and *change-oriented* (or transformational leadership).

The dimensions to be studied are project team members' or followers' perception of their leader-member relationship quality (LMX) with their project managers, the followers' gender and what they look for when choosing a project manager to lead them.

The study refers to theories on Leader-Member eXchange (LMX) and Yukl's leadership behaviours (2010). Through the data collected from the questionnaire, the researcher may find answers to the following questions:

- Is there a relationship between the follower's LMX level and the choice of project leadership?
- Is there a relationship between the follower's LMX level and his/her gender?
- Will the follower's gender influence the choice of project leadership?
- Do the findings differ from western literature? Or are they same?

1.6 Summary

Followers in the Malaysian projects environment, whether they rate themselves with high or low leader-member relationship with their project managers, and/or differed by their gender, may after all have similar opinions of their preferred project leadership styles. Malaysian collectivist work culture, high power distance and low tolerance of the unknown may invalidate western literature on the subject of followers' LMX and their expectations of project leadership style.

"Leadership is always about change." (Maak and Pless 2011, p. 6) Does this mean projects have higher chances of succeeding if project managers leading the projects practise transformational (or change-oriented) leadership and project followers seek high LMX with their leaders?

2 LITERATURE REVIEW

Scholarly writing and empirical research on the subject of project leadership have covered extensively on western findings. However, there has been very minimal study on the Malaysian front on the same subject. Malaysia is a collectivist society – the people decide as a group, not individually (Hofstede, Hofstede and Minkov, 2010). Malaysia being a high power distance society may reflect on Malaysian employees' resistance of being open to discuss their superiors in fear of a possible retaliation if the outcome of the discussion has negative impact on them which may result in no increment or job promotion; hence, the sucking up culture that is not uncommon in the Malaysian work environment.

2.1 History of Research

A leader's continuous effort to adapt to the environment and the people within and outside of the environment setting as well as being flexible to make things work for the environment may just be what the doctors ordered (Blanchard, Hersey and Johnson, 2008; George, 2003). Emotional intelligence, empathy, authenticity, personality, traits and behaviour are some of the dimensions used to analyse project leadership (Kouzes and Posner, 2007; Barrow and Hinton, 1976). Leaders placing the organization above themselves and follow-through with affirmative action gain the respect of their followers (Yukl, 2010). "[W]ithout followers there can be no leaders" (Collinson, 2006, p. 179).

2.1.1 Leader-Follower Theories

Strang (2007) makes a point in saying that project management demands quick actions when change knocks on corporate doors, expecting the organizations to be

ready for transformation. Appointees who are project managers cum change agents should consider unplanned activities that may well delay project timelines (Kanter, 2008). Change introduces uncertainty and chaos if left unchecked. Selection of project managers to take the lead will be critical. In projects involving technology, the emphasis may be on technical skills; however, when push comes to shove, soft skills may win any argument. Dvir, Malach-Pines and Sadeh (2009) posit that personality alone is not good enough to make someone a project manager. Muller and Turner (2010) outline the "leadership competencies" (p. 445) in **Table** 2-1.

Table 2-1: Leadership Competencies and Organizational Change Projects

		Organizational Change (competency rating)
Intellectual competencies (IQ)	Critical thinking	High
	Vision	High
	Strategic perspectives	High
Managerial competencies (MQ)	Managing resources	High
	Communication	High
	Empowering	High
	Developing	Medium
	Achieving	Medium
Emotional competencies (EQ)	Self awareness	High
	Emotional resilience	High
	Intuitiveness	Medium
	Sensitivity	High
	Influence	High
	Motivation	High
	Conscientiousness	High

Source: Muller and Turner 2010, p. 444; Muller and Turner 2007, p. 23

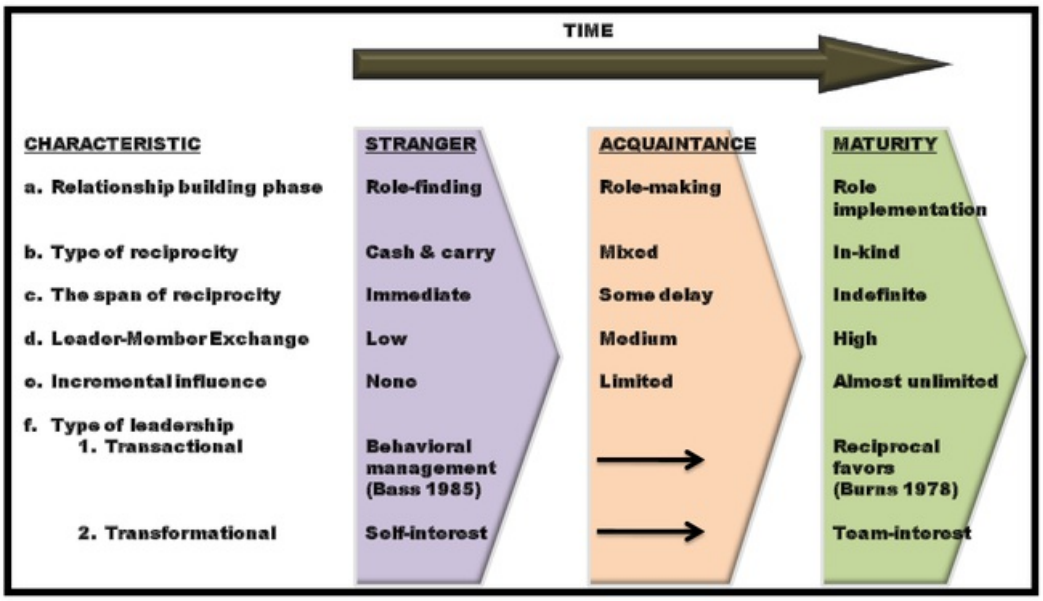
2.1.1.1 Leader-Member Exchange

Leader-Member eXchange (LMX) defines the level of a relationship between a leader and his/her member (Dansereau, Graen and Haga, 1975). A high LMX relationship leads to a matured relationship (

Figure 2-1) between the project manager and his team; this is achieved over time, reflected in a nurturing and balanced environment for everyone (cited in Bass and Riggio 2006). The maturity may come in two forms or both - "job maturity" and/or "psychological maturity" (cited in Bass 2008, p. 517; cited in Stott and Walker 1995, p. 201). "A leader's knowledge of followers' maturity can enhance and facilitate modification of the behaviour of followers and leader alike" (cited in Dvir and Shamir, 2003).

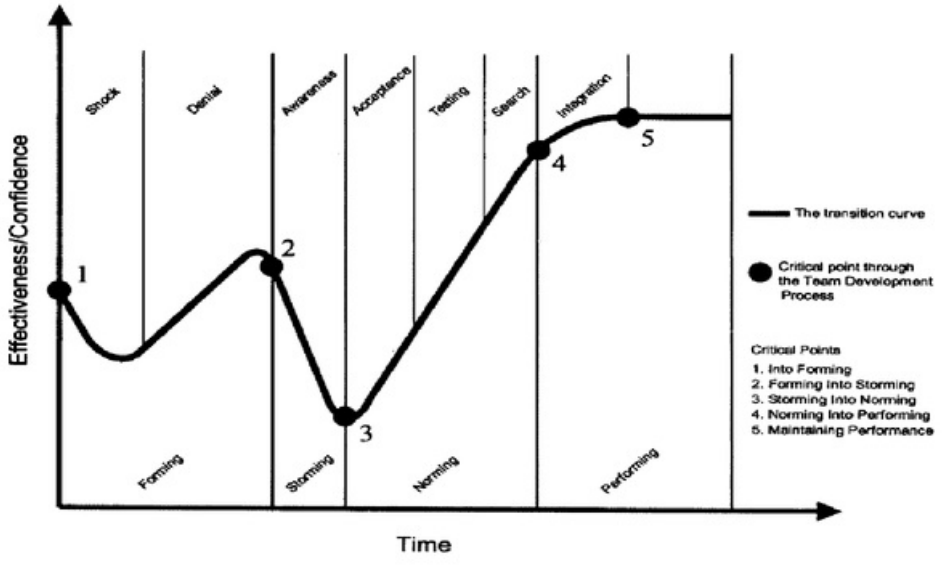
The "psychological maturity" may be obvious when theproject team members successfully evolve from being strangers to a performing team (**Figure** 2-2). Project managers who rate their team high in LMX consider them within their (the project managers') circle or in-group; whereas, the opposite means the team members are out-group (Graen and Uhl-Bien, 1995). Mujtaba and Tajaddini 2011 observe that often out-group members are neglected and on their own. A project may experience the presence of a high performing team at the end of a project; this can be accomplished when transformational project managers and their teams share high LMX (Bass, 2008; Graen and Uhl-Bien, 1995; Graen, Heinitz and Rowold, 2010; Huang, Wu and Yang, 2011). Day and Gerstner (1997) observe that "LMX may be transformational, at least at certain times and under certain conditions" (p. 839).

Figure 2-1: Leadership Maturity Development



Source: Graen and Uhl-Bien 1995, p. 231

Figure 2-2: The transition curve and Tuckman's Model (Formation of Teams)



Source: Kakabadse and Sheard 2004, p. 53

Leaders who are relations-oriented may have high LMX because of their nature to stay positive about their team members despite a negative experience with them; the leaders seem to be more persuaded to correct the situation by extending the appropriate level of assistance to the team (Chang and Johnson, 2010). Followers sense divisive nature of leaders when socialising with in-group versus out-group; leaders are closer to in-group members (cited in Daniels and Nielsen, 2012). Followers are motivated to perform their tasks without much hassle when they sense their leaders have empowered them to act as the situation calls for it (cited in Howell and Wang, 2012). Social factors such as organizational culture and respect for others do influence LMX quality between leaders and followers; leaders would be sensitive to individual and group behaviours to avoid making the wrong assumptions and a bad start with followers (Cogliser et al., 2009).

2.1.1.2 Yukl's Three Dimensional Model

Table 2-2 describes Yukl's theory dimensions. Previous research discovers that task-oriented behaviours is associated with transactional leadership and relations-oriented, participative (cited in Strang, 2007); whereas, change-oriented behaviours, transformational (cited in Moger and Rickards, 2000).

Table 2-2: Three-Dimensional Model

Three Dimensional Model	Behaviour Description	Dimensions
1: Task-oriented behaviours	Leaders focus on the *what*, *how*, *when* and *who* will complete the tasks at hand	Short-term planning
		Clarifying (roles and objectives)
		Monitoring (operations and performance)
2: Relations-oriented behaviours	Leaders focus on people issues and concerns	Supporting (show consideration, acceptance, and concerns for people)
		Developing (coaching, mentoring, career

Three Dimensional Model	Behaviour Description	Dimensions
		counselling)
		Recognizing (praise, awards and recognition events)
		Consulting
		Delegating / Empowering
3: Change-oriented behaviours	Leaders focus on the action plans to address environmental factors and change management issues and concerns	Envisioning change
		Encouraging innovative thinking
		External monitoring
		Taking risks
		Leading by example

Source: Adapted from Yukl 2010, pp. 118-127

Low risk projects may well succeed with transactional leadership; complex projects, involving a high degree of change management may succeed with transformational project managers (cited in Huang, Wu and Yang, 2011, p. 259). Considering the values differences in the Malaysian culture (**Table** 2-3), project leadership may be better suited for transformational and sense-making project managers.

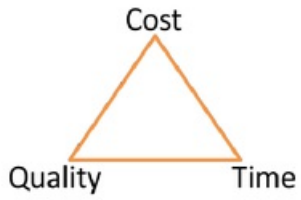
Table 2-3: Values Differences in Malaysian Culture

Malay values	Chinese values	Indian values
Respect for elders	Food	Fear of God
Spirituality/faith in God	Hard work/diligence	Sense of belonging
Humility	Pragmatism	Brotherhood
Face/self-respect	Perseverance	Family
Tact-indirectness	Education	Hard work
Generosity	Wealth/prosperity/money	Filial piety
Sensitivity to feelings	Family oriented	Karma
Politeness	Face	Champion of causes
Relationships	Harmony	Loyalty
Apologetic	Gambling/risk taking	Face

Source: Mclaren and Rashid 2002, p. 47 (cited in Rashid and Ho 2003, p. 77)

The added complexity of different races with different values seeks project managers with emotional intelligence to address them and keep them motivated to deliver the project objectives, keeping in mind the deliverables commitment within the Iron Triangle (**Figure** 2-3).

Figure 2-3: The Iron Triangle



Source: Atkinson 1999, p. 338

Whether a leader displays transactional or transformational behaviour, the choice of one or the other depends on the environment and the boundaries granted by the stakeholders (cited in Avolio et al., 2012).

2.1.2 Gender

Gender may play a mediating role when project team members choose who they favour as their project manager or leader; age and education of the project team members also play a role in this regard (Bass, 2008). Project managers or leaders may need to assess everyone on the team as to what makes him/her contribute positively to the project. A female follower may assume "rewards are based on equality" and "people work in order to live" (Hofstede, Hofstede and Minkov, 2010, p. 170); whereas, a male follower, "rewards are based on equity" and "people live in order to work" (ibid). A wise and mature project manager or leader may know what situation calls for what leadership styles during a team formation process throughout

a project. Female managers may opt for participative leadership style; male managers, direct and task-oriented (Bass, 2008).

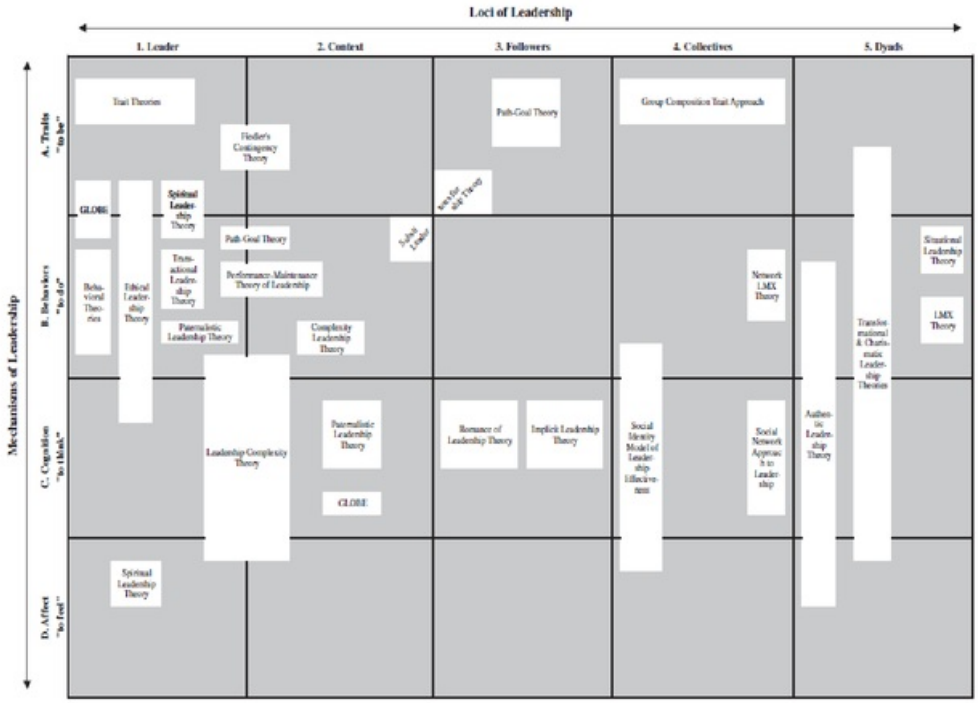
2.2 Evaluation of Past Studies

Project management is about people first; without them and their individual and collective knowledge and experience, the projects are bound to fail right from the start. A project is not a project unless the dyadic relationship of project leaders and team members exists.

2.2.1 Project Leadership

How complicated can project leadership studies be? In **Figure** 2-4, the leadership studies have expanded over several definitions and terminologies, as well as across different forms.

Figure 2-4: Leadership Studies across Different Forms



Source: Avolio et al. 2011, p. 1166

Are leaders born with matching characteristics to lead? Leaders may have been rebels in their childhood to test the patience of their family members and law abiding citizens. Their parents may have been "authoritative" or "authoritarian" (Avolio, Rotundo and Walumba, 2009, p. 331). What is the difference anyway? Authoritative parents allow their children to make mistakes and challenge them to be better; they allow their children to question situations and they provide guidance when they ask for it (ibid). Authoritarian parents are less forgiving under similar circumstances (ibid).

Leaders should come equipped with not only the relevant knowledge and experience, but also "social problem-solving skills" (Avolio et al., 2012, p. 147) to analyse any complex situation and bring the best solution forward. Dinh and Lord (2012) acknowledge the complexity in selecting the best-fit person to lead a project as the project manager; the conventional way of choosing anyone with project management experience may not be relevant anymore, considering that projects have their own intricacies that require a wide spread of "expertise, skills and knowledge" (p. 659). Project managers who take time to reflect on projects' lessons learnt and continuously strive to improve their project management skills at different levels of project complexities may be ready for even more challenging roles and responsibilities (ibid). Project managers who have the ability to influence others to take on and fulfill their roles and responsibilities may be challenged with different strategies or tactics to get the message across loudly or with subtlety (**Table** 2-4).

Table 2-4: Influencing Ways by the Agent (the Person Attempting to Influence the Other Person)

Rational persuasion	The agent uses logical arguments and factual evidence to show that a request or proposal is feasible and relevant for important task objectives.
Consultation	The agent asks the target person to suggest improvements or help plan a proposed activity or change for which the target person's support is desired.
Inspirational appeals	The agent appeals to the target's values and ideals or seeks to arouse the target person's emotions to gain commitment for a request or proposal.
Collaboration	The agent offers to provide assistance or necessary resources if the target will carry out a request or approve a proposed change.
Apprising	The agent explains how carrying out a request or supporting a proposal will benefit the target personally or help to advance the target's career.
Ingratiation	The agent uses praise and flattery before or during an attempt to influence the target person to carry out a request or support a proposal.
Personal appeals	The agent asks the target to carry out a request or support a proposal out of friendship, or asks for a personal favor before saying what it is.
Exchange	The agent offers something the target person wants, or offers to reciprocate at a later time, if the target will do what the agent requests.
Legitimating tactics	The agent seeks to establish the legitimacy of a request or to verify that he/she has the authority to make it.
Pressure	The agent uses demands, threats, frequent checking, or persistent reminders to influence the target to do something.
Coalition tactics	The agent enlists the aid of others, or uses the support of others, as a way to influence the target to do something.

Source: Chavez, Seifert and Yukl, 2008, p. 610

When a leader is able to relate to his/her team member and both parties are able to identify with each other and find similarities, there may exists high LMX. Conversely, if both parties have dissimilarities between them, they may not get along well; hence, low LMX (Jackson and Johnson, 2012). The dyadic relationship between leaders and followers as per LMX takes time and energy to develop; leaders may take a distant approach with followers to avoid any complications in the relationship that may find the leaders being seen as behaving unprofessionally (Einarsen and Glaso, 2006). Self-made leaders should avoid blowing their own trumpet to show off how they have become leaders due to their own hard work and initiative; followers have no appreciation for leaders with such attitude (Collinson, 2006).

Besides leading a group, a leader co-exists as a member to the group. Hence, a collective decision within the group also includes the leader's contribution. The collective decision may or may not agree with the leader's proposal. The disagreement may be due to the group's memory of a previous "misadventure" with the leader; even so, an agreement may be possible because the group trusted the leader enough to let go of the past when he had let them down (Giessner and van Knippenberg, 2008). Another reason for disagreement may be their experience of the leader's toxic and unacceptable behaviours – **Table** 2-5.

Table 2-5: Toxic Leadership Behaviours (Examples)

Description of behaviour	**Examples**
Demeaning	Hanging a "wall of shame" board to post employee [or team member] blunders

Ridiculing	Publicly ridiculing an employee's [or team member's] work
Mocking	Mocking employees [team members] as a display of humour
Degrading	Asking one of your coworkers, "Is this the best you can do?"
Excluding individuals from social functions	Inviting specific employees [team members] to social events and excluding others
Ostracizing employee	Telling an employee [team member] that he or she is not a team player
Exhibiting favouritism	Inviting specific employees [team members] to social event and excluding others
Displaying anger	Yelling when a deadline is missed
Emotional volatility	Throwing a tantrum when goals are not met Slamming a fist on the table
Threatening employees' job security	Threatening to terminate a coworker, even if the statement is made in a joking manner Making an employee [team member] feel as though his or her job is in jeopardy
Forcing people to endure hardships	Making the employees [team members] work until the job is done, even if it means they must work all night
Lack of integrity	Taking credit for someone else's work Blaming others for the leader's mistakes

Source: Pelletier 2012, p. 417

Leaders-followers with low LMX may experience low level of mutual trust; leaders may be hesitant of followers' capability to complete tasks within a short time. Trust may come in different forms (**Table** 2-6). Leaders may have to resort to positive

communications with followers who display reluctance to follow instructions that require quick action (cited in Bluedorn and Jaussi, 2008).There is a realisation that in this knowledge-economy era, traditional style of management no longer holds. The leadership style requires "less individualistic and commanding leadership" (Kark, Shamir and Waismel-Manor, 2012, p.636). Leaders should learn how to manage their followers' "personalities, values, motivations, and interpersonal styles" (Guo, Liu and Xu, 2012, p. 6). Based on this understanding can leaders motivate (not manipulate) their followers accordingly.

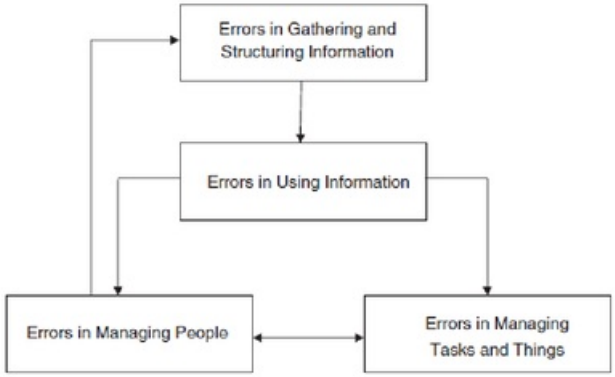
Table 2-6: Different Forms of Trust

Institution-based trust	One believes impersonal structures support one's likelihood for success in a given situation; reflects the security one feels about a situtation because of guarantees, safety nets, or other structures
Personality-based trust	Develops during childhood as an infant seeks and receives help from his or her benevolent caregiver resulting in a general tendency to trust others
Cognitive-based trust	Relies on rapid, cognitive cues or first impressions as opposed to personal interactions

Source: Cited in Burke et al. 2007, p. 609

Leaders are not perfect. They are not error-free; examples of their errors in judgement are described in **Figure** 2-5 and **Table** 2-7.

Figure 2-5: Error in Decisions by Leaders



Source: Bedell-Avers 2011, p. 242

Table 2-7: Error Examples

Error Types	*Examples*
Error in Gathering and Structuring Information	Errors in gathering and structuring information Failing to contact a client that has an important need or urgent request Incorrectly rank-ordering when prioritizing completion lists; placing important tasks too low on the completion list Monitoring inappropriate criteria; choosing not to examine performance changes resulting from implementing training program
Errors in Using Information	Errors in using information Disregarding safety reports; failing to reference prior reports to determine the emergence of trends Failing to consider key constraints in strategic plan; basing plan on incorrect or outdated information Message written by leader is unclear; messages are sent too often and lose significance; messages are sent to employees that are unrelated to the project

Errors in Managing People	Errors in managing people Assigning an employee to a task they are unprepared for; hiring employees with unnecessary or redundant skill sets Sending an employee to training that is unnecessary; failing to train employees on skills critical to their success Providing employees with rewards they do not value; failing to recognize important successes and efforts Being excessively critical or hurtful during performance appraisals; making assessments personal rather than behavioral
Errors in Managing Tasks and Things	Errors in managing tasks and things Purchasing new office equipment when old equipment functions adequately and other financial needs are pressing Waiting until machinery breaks down to repair it; allowing machinery to operate when it is unsafe Failing to track fundamental supply usage; requiring employees to *excessively* document usage

Source: Bedell-Avers 2011, p. 241

2.2.2 Team Management

Teams do not come together automatically; it takes a length of time to go through the Tuckman's model (**Figure** 2-2). Team conflict is a norm; display of negative behaviours at such times are a given, more so during crunch time. The task to minimise or end negativity within a team calls for a leader displaying transformational characteristics with emotional intelligence (Ayoko and Callan, 2010). This leader has the capacity to douse the fire by appealing to every individual's character strength (ibid).

Followers may display different behaviours with leaders – one of the insubordination type, and the other of the loyal and obedient type. Insubordination may have resulted from followers' lack of respect for the leaders' higher status; loyal and obedient followers are those who freely speak with their leaders due to their achieved social status with the leaders (Carsten et al., 2010).

Cited in Agho (2009), there are five (5) followership styles that may be displayed during follower-leader relationship:

- "Conformist followers" (p. 160): they say "yes" to their leaders without objecting or proposing other ideas or suggestions;
- "Alienated individuals" (p. 160): they choose to criticize or complain, yet do nothing to make a difference;
- "Pragmatist followers" (p. 160): they sit on the fence and choose to play by the rules;
- "Passive followers" (p. 160): they wait for instructions and lack initiative;
- "Effective/exemplary followers" (p. 160): they go out of their way to affect changes as they see fit; the innovators of the team.

Followers are resentful of unethical leaders (De Cremer et al., 2013). Followers want fair and equal treatment in an organization; when they perceive fairness and equality, a common good arises and both parties benefit (Jiang, 2012). Followers may resort to persuasive tactics or tougher tactics depending upon the leadership style. If the leader is transactional, followers may use tougher tactics to get their message across (Epitropaki and Martin, 2013). If the leader is transformational, followers prefer

persuasive tactics to ensure the positive rapport between them is not jeopardised (ibid). Leaders with the tendency to be highly task-oriented or highly transactional may be taking in more stress on themselves (Mujtaba and Tajaddini, 2011).

Transformational behaviour by the leader may have a positive impact on the team – the transformational spirit can be infectious as the team may turn out to be transformational as well; this is reflected in the team's high performance and satisfaction with the assigned tasks (Braun et al., 2013). Leaders taking the time to bring the team on-board with the project details and sharing the relevant information at the beginning of a project and continuously throughout the project may witness the development of a strong and committed team gaining strength upon strength to ensure the project succeeds.

2.2.3 Gender

Gender similarity does not accurately indicate high quality LMX (Green et al., 1996) but gender dissimilarity may result in low quality of LMX (Yrle et al., 2002).

> [I]t is likely not only that followers develop different prototypes of leadership for male and female focal persons, but that male and female followers develop different prototypes of the preferred leader as well. (Bellou 2011)

2.2.3.1 Leadership Role

Stereotyping of male or female leaders goes with the culture that prevails, the in-group. Female leaders with nurturing characteristics may be seen as a weakness, unbecoming of a leader; conversely if it exists with male leaders (Cheng et al., 2012; Hoyt et al., 2010). Male leaders are viewed as practising transactional leadership due

their commanding demeanour; female leaders conversely represent transformational leadership – they provide a platform for their followers to have a voice before concluding any issues (Ivan, 2012).

2.2.3.2 Team Role

Followers of different gender may base their impression of male or female leaders on "physical features associated with race, sex, or ethnicity" (cited in Murphy et al., 2008) and this forms how he/she should behave as a leader. The Social Role Theory outlines the beliefs of how male or female sex is expected to behave (Eagly and Karau, 2002) –**Table** 2-8.

Table 2-8: Perceptions of the Male and Female Sexes

Male (Agentic Attributes)	Assertive, controlling, and confident tendency – for example, aggressive, ambitious, dominant, forceful, independent, self-sufficient, self-confident, and prone to act as a leader.
Female (Communal Attributes)	Concern with the welfare of other people – for example, affectionate, helpful, kind, sympathetic, interpersonally sensitive, nurturant and gentle.

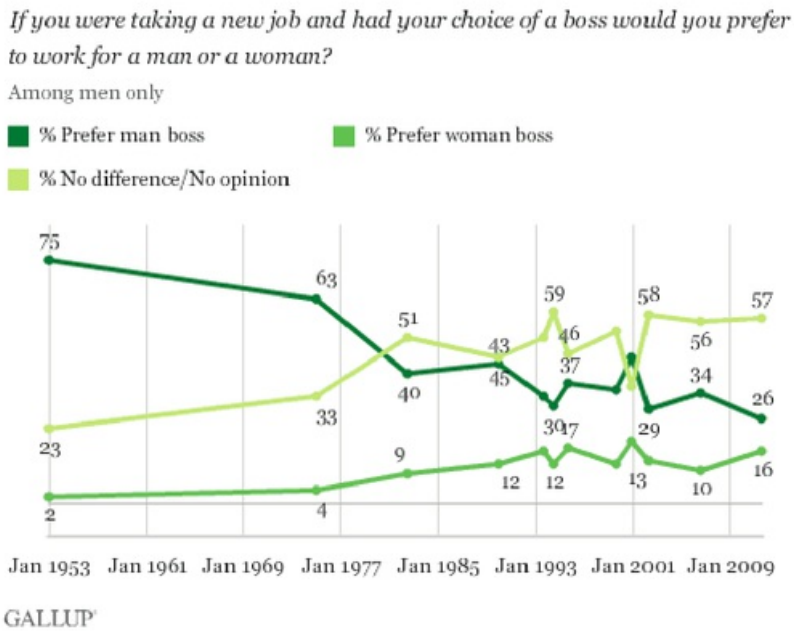
Source: Eagly and Karau 2002

Some studies have reiterated the same findings that followers (regardless of gender) prefer male leaders because of their perception that male leaders are stronger when the situation calls for objective decisions (ibid). Male followers embrace transformational leadership; they possess stronger relationship with such leaders (Douglas, 2012).

A Gallup poll was taken over a span of many years in the United States and the results revealed differing responses –

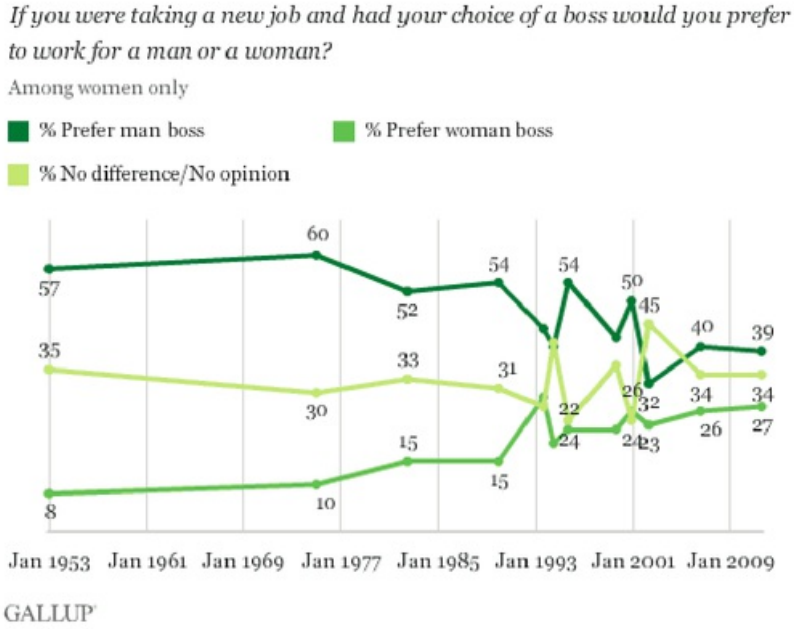
Figure 2-6, **Figure** 2-7. The Gallup Poll taken in 2009 observed that male respondents have no opinion as to the preferred sex of their potential superiors; whereas, female respondents prefer male superiors.

Figure 2-6: Gallup Poll - Male Response to Choice of Superior



Source: Newport 2011

Figure 2-7: Gallup Poll – Female Response to Choice of Superior



Source: Newport 2011

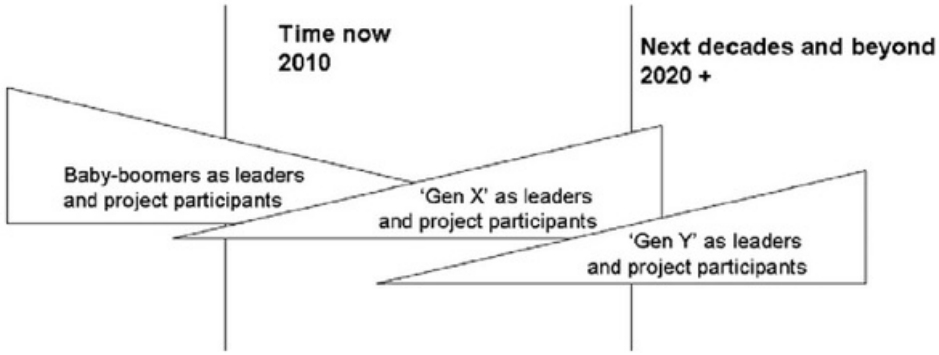
2.2.4 Learning Organization

> Managing corporate transformations ultimately means changing behaviour and culture. (Beer 1987, p. 51)

With any corporate transformational projects, the challenges towards making the projects successful may originate from the resistance of the affected parties. The failure to address the insecurities of these parties due to "cultural beliefs, norms and values" (Maden, 2011, p. 3) may mean failure to the projects, failure to change the mindsets of the incumbents that may be due to complacency and safety nets. This may lead to failure in changing the organization towards achieving the necessary learning culture for business survivability.

With an aging workforce, the learning curve of an organization may mean at quicker pace but this may be met if there is a check and balance as well as continuous improvements based on "methodologies" documented and practised in the organization (Kanter, 2008). In view of the aging workforce challenges as per **Figure** 2-8, project management "methodologies" needs revision and critical changes to ensure considerable understanding of the different cultures, norms and values of differing generations as leaders and project participants. This is also to ensure the practical side of project management "methodologies" considers the individual characteristics of a younger generation in the midst of a knowledge-economy era (Miller and Yu, 2005).

Figure 2-8: Project Leadership and the Next Generation

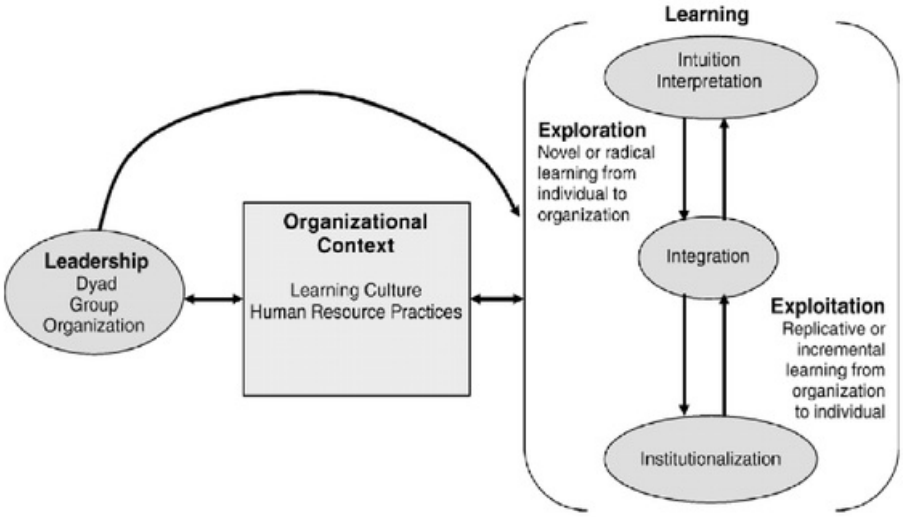


Source: Lloyd-Walker and Walker, 2011, p. 390

Leaders with transformational and/or transactional leadership behaviours may encourage both "exploration" and "exploitation" (**Figure** 2-9); but transformational leaders have greater influence on "exploration" due to the express learning required with project team members in new projects with unknown complexity (Berson et al.,

2006). Leaders displaying participative leadership behaviour may focus more on the importance of bringing the team together; as a result, the team members are inclined to share information freely, at their own volition as part of the team learning process (Bush et al., 2010).

Figure 2-9: Learning Organization – Outcome of Leadership



Source: Berson et al., 2006, p. 578

2.2.5 Project Management Success

Project management requires various sets of tools, techniques, knowledge and skills in completing project activities to produce a product, service or result as well as to meet project's requirements. In order to make a successful project, the project manager must be equipped with sufficient capability and competency. The manager's leadership plays an important role in managing the problems and risks within a project and to ensure external stakeholder satisfaction and internal cooperation between team members. A project success is measured differently from project

management success. A project success is measured by the overall objectives of the project whereas project management success is measured according to the performance of the project based on time, cost and quality (Hartman and Rafi 2002).

A project manager's leadership style and competence are not directly related to project success (Prabhakar, 2005) but the leadership role is an important factor in facilitating various project successes that contributes to project performance. (Gehring, 2007) A project manager's leadership style and competency towards team members and various stakeholders influence the project outcomes and performance. It is important to understand the differences between project management and project leadership as it is not always obvious. Project management is usually focused on traditional functions such as organizing, planning, monitoring and controlling. In general, project management is concerned with improving the overall operational efficiency and effectiveness (Kangis and Lee-Kelly, 2000).

On the other hand, project leadership focuses on guiding and motivating people to achieve organizational goals and improve personal growth. It also releases the full potential of an organization and influences followers' career development (O'Shaughnessy, 2001). Leadership is by far the most influential component of an organizational success (Adeyemi-Bello, 2001) as it relates to the impact of followers' influences. Leadership has been conceptualized through a number of theories that identifies the characteristics and behaviors of a particular leader (Northouse, 2006). The most influential approach can be the use of multiple leadership styles such as transformational, transactional and participative leadership (Vittal et al., 2010).

3 METHODOLOGY

The quantitative research involving forty (40) questionnaire items from two (2) validated sources, attempts to analyse and conclude if project team members with high or low leader-member exchange (LMX) relationship and gender factor have a preference for specific project leadership (task-oriented, relations-oriented or change-oriented).

3.1 Research Methodology

The cross-sectional research involves purposive sampling (judgment sampling) of eighty-two (82) participants who have been involved in Malaysian projects as team members.

This research study applies both parametric and nonparametric statistical tests – Correlations, One-way ANOVA, Univariate ANOVA and t-test. The variables to be tested upon are as follows:

- one (1) independent variable (leader-member exchange relationship),
- one (1) mediating variable (gender), and
- three (3) dependent variables (task-oriented, relations-oriented, change-oriented).

The study also collects demographic data as control variables such as highest education, number of years of project experience, and number of years employed.

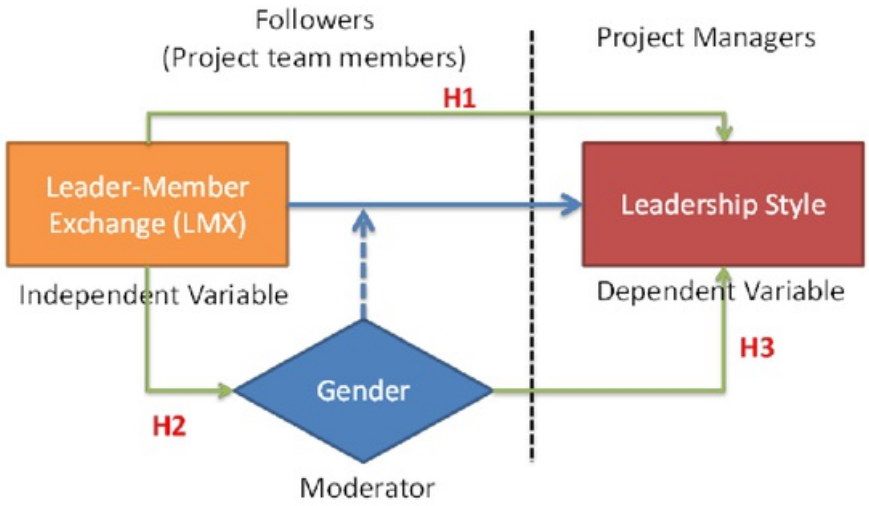
A survey questionnaire with forty (40) items seeks the respondents' feedback using Likert 5-point scale:

- Seven (7) items are taken from LMX-7 form (Leader-Member eXchange), and
- Yukl's (2010) nine (9) task-oriented behaviour items, eleven (11) relations-oriented and thirteen (13) change-oriented.

3.2 Theoretical Framework

Figure 3-1 illustrates the conceptual framework with Leader-Member Exchange (LMX) as the independent variable, gender of the project team member as the mediating variable and three (3) dimensions (leadership behaviour – task-oriented, relations-oriented, change-oriented) of preferred leadership of the project leader or project manager.

Figure 3-1: Conceptual Framework



The research questions are as follows:

Research Question 1	Is there a relationship between followers' LMX scores and preferred project managers' leadership style?
Research Question 2	Is there a relationship between followers' LMX scores and followers' gender?
Research Question 3	Is there a relationship between followers' gender and project managers' leadership style?

The hypotheses being considered are as follows:

Hypothesis 1.	There is a relationship between followers' high/low LMX and project managers' leadership style.	
	Hypothesis 1a.	Followers with high LMX relationships with project managers prefer change-oriented leadership.
	Hypothesis 1b.	Followers with low LMX relationships with project managers prefer task-oriented leadership.
Hypothesis 2.	There is a relationship between followers' high/low LMX and gender.	
	Hypothesis 2a.	High LMX relationships affect male followers.
	Hypothesis 2b.	Low LMX relationships affect female followers.
Hypothesis 3.	There is a relationship between followers' gender and project managers' leadership style.	
	Hypothesis 3a.	Female followers prefer relations-oriented leadership.
	Hypothesis 3b.	Male followers prefer task-oriented leadership.

3.3 Research Approach

The researcher circulated the questionnaire through personal contacts in different industries.

3.4 Research Subjects

The purposive research is open to volunteers with at least one (1) year of project experience in projects implemented locally, in the role of team members. The respondents may be from any mature industries – for example, Construction, IT, Telecommunications, Oil & Gas, and Financial Institutions. The questionnaire includes demographics data such as age, highest education, number of years with the company and role in the project.

3.5 Questionnaires

Background of the Questionnaire

The questionnaire is based on two (2) validated sources:

1. Questions 1-7: seven (7) items taken from LMX-7 form (Leader-Member eXchange),
2. Questions 8-40: Yukl's (2010) nine (9) task-oriented behaviour items, eleven (11) relations-oriented and thirteen (13) change oriented,

Scaling Methods

5-point Likert scales are used in the questionnaire. There is no negatively worded item in the questionnaire. The scores for questions 1-7 are similar to question 8-40; the difference is the response descriptions for scales 1-5.

The scores for questions 8-40 are as follows:

- Strongly Agree = 5;
- Agree = 4;
- Neutral = 3;
- Disagree = 2; and
- Strongly Disagree = 1.

3.6 Administration of the Questionnaire

The questionnaire and the consent letter outlining the ethical practices were sent through email directly to the volunteers. In the introduction email, the volunteers were encouraged to forward the questionnaire and the consent letter to their friends who have completed at least one (1) year project in Malaysia. Some respondents chose to remain anonymous for personal reasons.

The completed questionnaires were returned directly to the researcher through email or hand-delivered in hard copies.

3.7 Statistical Methods

The population size (N=80) is determined by the minimum number of project team members in a large and complex project based on the researcher's experience of one project involving renovation works in an office floor at Kuala Lumpur City Centre tower. The sample size required for the study is sixty-six (66) (Bougie and Sekaran 2010, p. 295). The researcher collected eighty-two (82) survey responses.

The past research studies had categorized LMX into five (5) categories:

1. very low (scores of 7-14),
2. low (15-19),
3. moderate (20-24),
4. high (25-29), and
5. very high (30-35)

(Graen and Uhl-Bien, 1995; 'SAGE', 2010).

As a result of the questionnaire group scores, the distribution of LMX scores are categorised into two (2) – LOW and HIGH.

The following sequences of steps are taken during the data analysis:

- reviewed the collected data for outliers;
- run Cronbach's coefficient alpha for data reliability;
- run tests to determine statistical significance;
- chose the right statistics to explore relationships and difference between groups;
- run post-hoc test(s) to investigate relationships (if any).

IBM SPSS (Statistical Package for Social Sciences) version 19 is used as the software platform in analysing the data collected for this study.

3.8 Summary

The conceptual framework consists of leader-member exchange (LMX) with two (2) categories (high and low) as the independent variable, gender as the mediating variable and three (3) categories representing preferred leadership behaviours (task-oriented, relations-oriented, change-oriented) as the dependent variable. A quantitative research involving Correlations, One-way ANOVA, t-test, Chi-Square test as well as univariate ANOVA are undertaken to analyse additional findings.

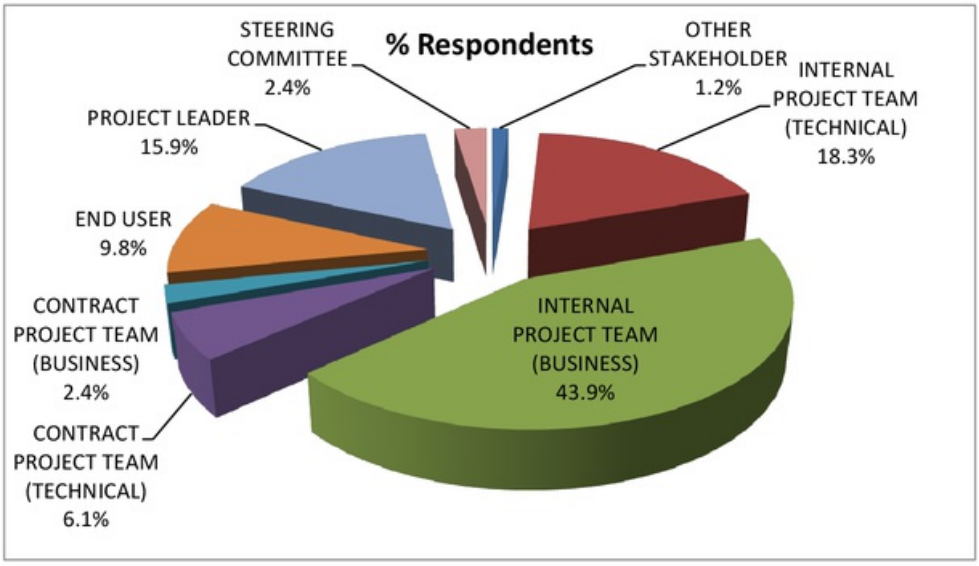
The eighty-two (82) participants of the study were volunteers and project team members of projects in Malaysia. Their questionnaire queries and responses were communicated through email or phone calls with the researcher.

4 RESULTS

Eighty-two (82) responses were received. Based on the highest percentage of respondents (**Appendices 1-6**) and illustrated by the frequency charts below,

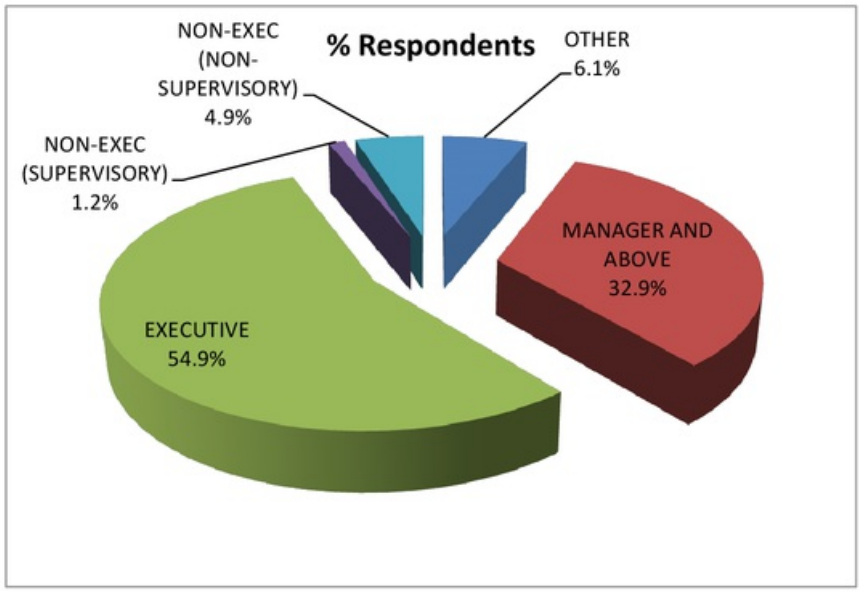
- 43.9% of them are internal project team members representing the business departments (**Figure** 4-1),
- 54.9% of them are Executives in the company (**Figure** 4-2),
- 67.1% of them are Bachelor's degree holders (**Figure** 4-3),
- 23.2% of them have been with the company for two (2) years (**Figure** 4-4) ,
- 12.2% of them have worked for four (4) years (**Figure** 4-5),
- 40.2% of them are Chinese (**Figure** 4-6),
- Equal percentage of respondents for male and female (**Table** 4-1).

Figure 4-1: Demographics (Role in Project, % Respondents)



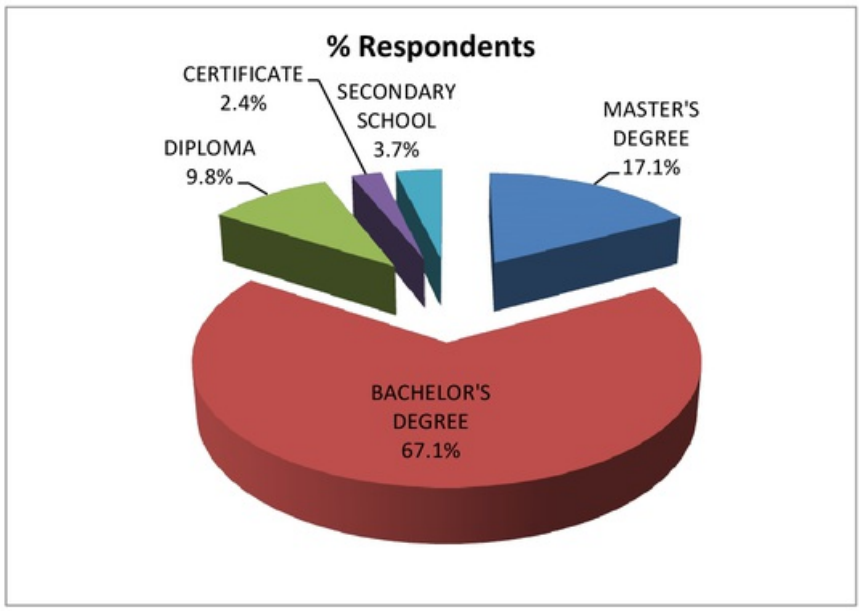
See SPSS data in Appendix 1.

Figure 4-2: Demographics (Position in Company, % Respondents)



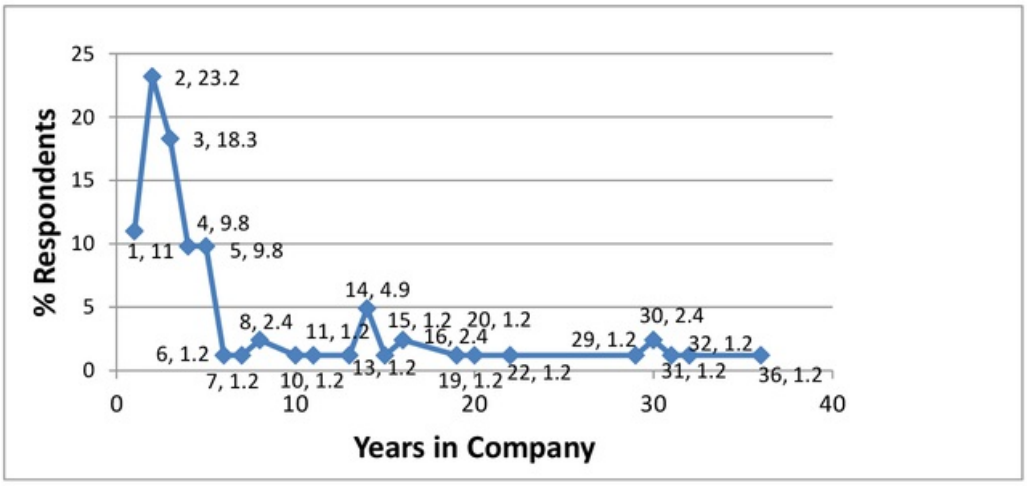
See SPSS data in Appendix 2.

Figure 4-3: Demographics (Highest Education, % Respondents)



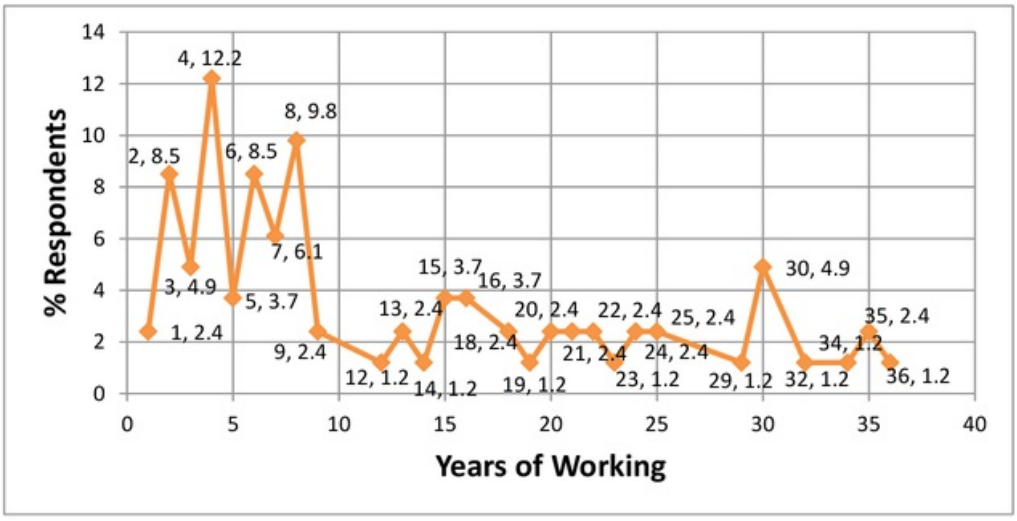
See SPSS data in Appendix 3.

Figure 4-4: Demographics (Years in Company, % Respondents)



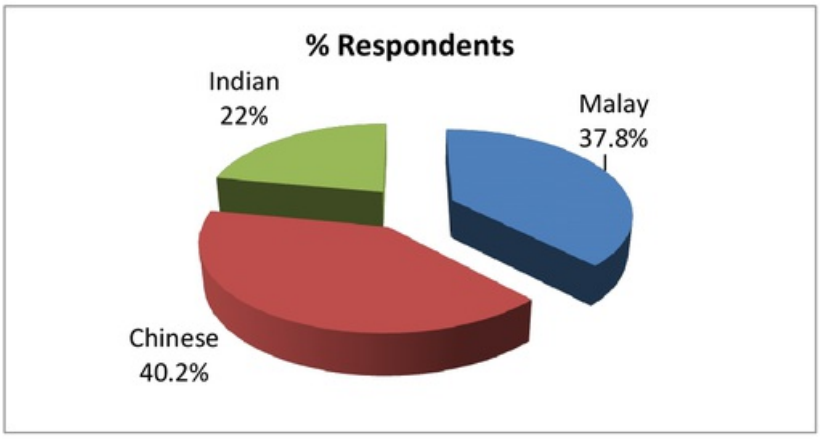
See SPSS data in Appendix 4.

Figure 4-5: Demographics (Years of Working, % Respondents)



See SPSS data in Appendix 5.

Figure 4-6: Demographics (Race, % Respondents)

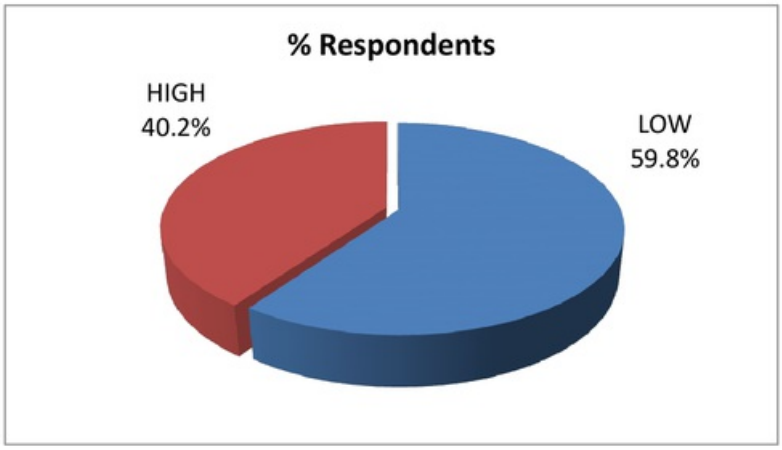


See SPSS data in Appendix 6.

Frequencies (LMX High/Low)

LMX scores are binned into two – high, low. 40.2% of the respondents fall into LMX high. 59.8% of them in LMX low. A higher percentage of the respondents have low leader-member exchange experience.

Figure 4-7: LMX High/Low, % Respondents



See SPSS data in Appendix 9.

Table 4-1: Percentage of Female and Male Respondents

Statistics

Gender

N	Valid	82
	Missing	0

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	FEMALE	41	50.0	50.0	50.0
	MALE	41	50.0	50.0	100.0
	Total	82	100.0	100.0	

4.1 Normality Test

The normality tests are executed against the demographics variable - Age in 2013, every questionnaire item, and the total scores for LMX and leadership styles. The data, Age in 2013 is taken into normality test consideration to ensure the age is relevant and acceptable.

4.1.1 Age in 2013

The mean (35.46) and 5% trimmed mean (34.92) values are not significantly different; hence, the values are not significantly influenced by extreme values. (See SPSS table **8-3** in **Appendix 8**). The Sig. value of .000 in Kolmogorov-Smirnov column suggests violation of the assumption of normality. (See SPSS table **8-5** in **Appendix 8**).

4.1.2 Itemized Questionnaire

The Sig. value of .000 in Kolmogorov-Smirnov column suggests violation of the assumption of normality for every questionnaire iteam (see SPSS table **10-2**, **Appendix 10**).

4.1.3 Total Scores (LMX, Leadership Styles)

LMX total score skewness is positive; this indicates respondents' scores are skewed to the left of the distribution graph with low values. The skewness values for the total scores of the three (3) leadership styles are negative; the values are skewed to the right of the distribution graph with high values. (See table **11-1** in **Appendix 11)**.

Kurtosis values for all four (4) variables are negative; this indicates the presence of extreme values. Even so, the mean and 5% trimmed mean values are not significantly different; hence, the values are not significantly influenced by extreme values. (See SPSS table **11-3** in **Appendix 11**). The Sig. values of less than 0.05 ($p<0.05$) in Kolmogorov-Smirnov column suggest violation of the assumption of normality. (See SPSS table **11-5** in **Appendix 11**).

4.2 Reliability Test

The reliability tests are applied to the itemized questionnaire for every LMX question and every question on Task-Oriented, Relations-Oriented and Change-Oriented leadership styles.

4.2.1 Itemized Questionnaire (LMX and Three (3) Leadership Styles)

Cronbach's alpha for all four (4) variables – LMX, Task-Oriented, Relations-Oriented, Change-Oriented, are greater than the value 0.7 (Pallant 2010); hence, the data is reliable (**Table** 4-2). *Corrected Item-Total Correlation* values in *Item-Total Statistics* tables are all positive and exceeding 0.3. (See table **12-6** in **Appendix 12**, table **13-6** in **Appendix 13**, table **14-6** in **Appendix 14,** table **15-6** in **Appendix 15**). Hence, the items do not require any reverse coding.

Table 4-2: Cronbach's Alpha (Itemized Questionnaire)

Variable	Cronbach's Alpha	Reference
LMX (N=7)	.906	Table **12-2** in **Appendix 12**
Task-Oriented (N=9)	.861	Table **13-2** in **Appendix 13**
Relations-Oriented (N=11)	.894	Table **14-2** in **Appendix 14**
Change-Oriented (N=13)	.911	Table **15-2** in **Appendix 15**

4.2.2 Total Scores (LMX, Three (3) Leadership Styles)

Cronbach's alpha for all four (4) variables total scores are greater than the value 0.7 (Pallant 2010); hence, the data is reliable (**Table** 4-3).

Table 4-3: Cronbach's Alpha (Total Scores)

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.829	.839	4

See SPSS data in Appendix 16.

4.3 Analysis

This study stands to prove three (3) hypotheses and within each hypothesis, another two (2) sub-hypotheses. LMX high/low is the **independent variable**, the three (3) leadership styles (Task-Oriented, Relations-Oriented, Change-Oriented) - the **dependent variable,** and gender - the **mediator**.

4.3.1 Leader-Member Exchange

The highest and lowest mean for LMX seven (7) questions are as follows:

LMX highest mean	**3.76**	Q7: How would you characterize your working relationship with your leader?
LMX lowest mean	**3.38**	Q5: Again, regardless of the amount of formal authority your leader has, what are the chances that he or she would "bail you out" at his or her expense?

4.3.2 Task-Oriented

The highest and lowest mean for Task-Oriented nine (9) questions are as follows:

Task-Oriented highest mean	**4.48**	Q21: Resolve immediate problems that would disrupt the work
Task-Oriented lowest mean	**4.04**	Q14: Plan short term operations

4.3.3 Relations-Oriented

The highest and lowest mean for Relations-Oriented thirteen (13) questions are as follows:

Relations-Oriented highest mean	**4.49**	Q25: Recognize contributions and accomplishments.
Relations-Oriented lowest mean	**3.63**	Q31: Use symbols, ceremonies and stories to build team identity.

4.3.4 Change-Oriented

The highest and lowest mean for Change-Oriented nine (9) questions are as follows:

Change-Oriented highest mean	**4.27**	Q34: Interpret events to explain the urgent need for change.

Change-Oriented lowest mean	**3.76**	Q42: Make symbolic changes that are consistent with a new vision or strategy.

4.4 Hypotheses

The findings for every hypothesis and sub-hypothesis are derived from specific parametric and nonparametric tests.

4.4.1 Relationship between Followers' High/Low LMX and Project Managers' Leadership Style

Hypothesis 1 is supported based on the correlations tests and t-test on LMX high/low and the three (3) leadership styles in the following sub-sections. Univariate ANOVA tests suggest a significant difference between LMX high/low and task-oriented leadership, and between LMX high/low and change-oriented.

4.4.1.1 LMX High/Low and Task-Oriented Leadership

The results of the correlations test indicate a positive correlation between LMX high/low and task-oriented leadership style. T-test indicates a significant difference in the mean scores on task-oriented leadership for both high and low LMX.

4.4.1.1.1 Correlations Test (LMX High/Low, Task-Oriented)

Pearson correlation coefficient is positive (**Table** 4-4); there is a positive correlation but small (r=0.267) between LMX High/Low Total Score and Task-Oriented Total Score and a coefficient of determination of 7.12%[1] of shared variance. (Pallant, 2010, p. 134) Task-Oriented helps to explain only 7.12% of the variance in respondents' scores on LMX High/Low. There is a positive correlation between the

[1] Coefficient of determination = $.267^2 * 100 = 7.12\%$

two variables, r=0.267, n=82, p=0.015 (p<0.05) with a significant difference between LMX High/Low Total Score and Task-Oriented Total Score.

Table 4-4: Correlations (LMX High/Low Total Score, Task-Oriented Total Score)

Correlations

		Tot_LMX (Binned)	Tot_TO
Tot_LMX (Binned)	Pearson Correlation	1	.267*
	Sig. (2-tailed)		.015
	N	82	82
Tot_TO	Pearson Correlation	.267*	1
	Sig. (2-tailed)	.015	
	N	82	82

*. Correlation is significant at the 0.05 level (2-tailed).

4.4.1.1.2 T-test (LMX High/Low, Task-Oriented)

In the Independent Samples Test (**Table** 4-5), Sig. = 0.002 (p<0.05) in Levene's test; hence, variances are not the same for the two groups. In the row- Equal variances not assumed, Sig. (2-tailed) = 0.009 (p<0.05). There is a significant difference in the mean scores on task-oriented leadership for both high LMX (mean = 40.24, n=33) and low LMX (mean = 37.86, n=49). There is a higher mean for task-oriented leadership and LMX high.

Table 4-5: T-test (LMX High/Low Total Score, Task-Oriented Total Score)

Group Statistics

	Tot_LMX (Binned)	N	Mean	Std. Deviation	Std. Error Mean
Tot_TO	LOW	49	37.86	4.830	.690
	HIGH	33	40.24	3.269	.569

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Tot_TO	Equal variances assumed	9.902	.002	-2.478	80	.015	-2.385	.963	-4.301	-.469
	Equal variances not assumed			-2.667	79.992	.009	-2.385	.894	-4.165	-.605

4.4.1.1.3 Univariate ANOVA (LMX High/Low, Task-Oriented)

23

In Levene's Test of Equality of Error Variances (**Table** 4-6), Sig. = 0.002 ($p<0.05$) shows that the variances are not equal for Task-Oriented total score. There is a violation of assumption. In Tests of Between-Subjects Effects, Sig. = 0.015 ($p<0.05$) shows that the results are significant for LMX high/low and Task-Oriented total score.

Table 4-6: Univariate ANOVA (LMX High/Low, Task-Oriented)

Descriptive Statistics

Dependent Variable:Tot_TO

Tot_LMX (Binned)	Mean	Std. Deviation	N
LOW	37.86	4.830	49
HIGH	40.24	3.269	33
Total	38.82	4.409	82

Levene's Test of Equality of Error Variances[a]

Dependent Variable:Tot_TO

F	df1	df2	Sig.
9.902	1	80	.002

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + LMX_Grp

Tests of Between-Subjects Effects

Dependent Variable:Tot_TO

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	112.195[a]	1	112.195	6.139	.015	.071
Intercept	120280.000	1	120280.000	6581.396	.000	.988
LMX_Grp	112.195	1	112.195	6.139	.015	.071
Error	1462.061	80	18.276			
Total	125129.000	82				
Corrected Total	1574.256	81				

a. R Squared = .071 (Adjusted R Squared = .060)

4.4.1.2 LMX High/Low and Relations-Oriented Leadership

The results of the correlations test indicate a positive correlation between LMX high/low and relations-oriented leadership style. T-test indicates a non-significant difference in the mean scores on relations-oriented leadership for both high and low LMX.

4.4.1.2.1 Correlations (LMX High/Low, Relations-Oriented Leadership)

Pearson correlation coefficient is positive (**Table** 4-7); there is a positive correlation but small (r=0.163) between LMX High/Low Total Score and Relations-Oriented

Total Score and a coefficient of determination of 2.66%[2] of shared variance. (Pallant, 2010, p. 134) Relations-Oriented helps to explain only 2.66% of the variance in respondents' scores on LMX High/Low. There is a positive correlation between the two variables, r=0.163, n=82, p=0.143 (p>0.05) with a non-significant difference between LMX High/Low Total Score and Relations-Oriented Total Score.

Table 4-7: Correlations (LMX High/Low Total Score, Relations-Oriented Total Score)

Correlations

		Tot_LMX (Binned)	Tot_RO
Tot_LMX (Binned)	Pearson Correlation	1	.163
	Sig. (2-tailed)		.143
	N	82	82
Tot_RO	Pearson Correlation	.163	1
	Sig. (2-tailed)	.143	
	N	82	82

4.4.1.2.2 T-test (LMX High/Low, Relations-Oriented Leadership)

In the Independent Samples Test (**Table** 4-8), Sig. = 0.452 in Levene's test (p>0.05); hence, equal variance is assumed for the two groups. In the row - Equal variances assumed, Sig. (2-tailed) = 0.143 (p>0.05). There is no significant difference in the mean scores on relations-oriented leadership for both high and low LMX.

[2] Coefficient of determination = $.163^2 * 100 = 2.66\%$

Table 4-8: T-test (LMX High/Low Total Score, Relations-Oriented Total Score)

Descriptive Statistics

Dependent Variable:Tot_RO

Tot_LMX (Binned)	Mean	Std. Deviation	N
LOW	45.90	5.906	49
HIGH	47.76	5.075	33
Total	46.65	5.629	82

11

Levene's Test of Equality of Error Variances[a]

Dependent Variable:Tot_RO

F	df1	df2	Sig.
.570	1	80	.452

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + LMX_Grp

18

Tests of Between-Subjects Effects

Dependent Variable:Tot_RO

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	68.194[a]	1	68.194	2.183	.143	.027
Intercept	172966.925	1	172966.925	5538.153	.000	.986
LMX_Grp	68.194	1	68.194	2.183	.143	.027
Error	2498.550	80	31.232			
Total	180989.000	82				
Corrected Total	2566.744	81				

a. R Squared = .027 (Adjusted R Squared = .014)

4.4.1.3 LMX High/Low and Change-Oriented Leadership

5

The results of the correlations test indicate a positive correlation between LMX high/low and change-oriented leadership style. 44 T-test indicates a significant difference in the mean scores on change-oriented leadership for both high and low LMX.

4.4.1.3.1 Correlations (LMX High/Low and Change-Oriented Leadership)

Pearson correlation coefficient is positive (**Table** 4-9); there is a positive correlation but small (r=0.262) between LMX High/Low Total Score and Change-Oriented Total Score and a coefficient of determination of 6.86%[3] of shared variance. (Pallant, 2010, p. 134) Change-Oriented helps to explain only 6.86% of the variance in respondents' scores on LMX High/Low. There is a positive correlation between the two variables, r=0.262, n=82, p=0.017 (p<0.05) with a significant difference between LMX High/Low Total Score and Change-Oriented Total Score.

Table 4-9: Correlations (LMX High/Low Total Score, Change-Oriented Total Score)

Correlations

		Tot_LMX (Binned)	Tot_CO
Tot_LMX (Binned)	Pearson Correlation	1	.262*
	Sig. (2-tailed)		.017
	N	82	82
Tot_CO	Pearson Correlation	.262*	1
	Sig. (2-tailed)	.017	
	N	82	82

*. Correlation is significant at the 0.05 level (2-tailed).

4.4.1.3.2 T-test

In the Independent Samples Test (**Table** 4-10), Sig. = 0.100 (p>0.05) in Levene's test; hence, equal variance is assumed for the two groups. In the row - Equal variances assumed, Sig. (2-tailed) = 0.017 (p<=0.05). There is a significant difference in the mean scores on change-oriented leadership for both high LMX

[3] Coefficient of determination = .262 * .262 * 100 = 6.86%

(mean = 54.79, n=33) and low LMX (mean = 50.78, n=49). The mean score is higher for high LMX.

Table 4-10: T-test (LMX High/Low Total Scores, Change-Oriented Total Score)

Group Statistics

	Tot_LMX (Binned)	N	Mean	Std. Deviation	Std. Error Mean
Tot_CO	LOW	49	50.78	7.822	1.117
	HIGH	33	54.79	6.532	1.137

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Tot_CO	Equal variances assumed	2.765	.100	-2.430	80	.017	-4.012	1.651	-7.299	-.726
	Equal variances not assumed			-2.517	76.242	.014	-4.012	1.594	-7.187	-.837

4.4.1.3.3 Univariate ANOVA (LMX High/Low, Change-Oriented)

In Levene's Test of Equality of Error Variances (**Table** 4-11), Sig. = 0.100 ($p>0.05$) shows that the variances are equal for Change-Oriented total score. There is a violation of assumption. In Tests of Between-Subjects Effects, Sig. = 0.017 ($p<0.05$) shows that the results are significant for LMX high/low and Change-Oriented total score.

Table 4-11: Univariate ANOVA (LMX High/Low, Change-Oriented)

Descriptive Statistics

Dependent Variable:Tot_CO

Tot_LMX (Binned)	Mean	Std. Deviation	N
LOW	50.78	7.822	49
HIGH	54.79	6.532	33
Total	52.39	7.552	82

Levene's Test of Equality of Error Variances[a]

Dependent Variable:Tot_CO

F	df1	df2	Sig.
2.765	1	80	.100

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + LMX_Grp

Tests of Between-Subjects Effects

Dependent Variable:Tot_CO

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	317.466[a]	1	317.466	5.904	.017	.069
Intercept	219746.930	1	219746.930	4086.371	.000	.981
LMX_Grp	317.466	1	317.466	5.904	.017	.069
Error	4302.046	80	53.776			
Total	229688.000	82				
Corrected Total	4619.512	81				

a. R Squared = .069 (Adjusted R Squared = .057)

4.4.1.4 Followers with High/Low LMX and Leadership Style (High LMX, Change-Oriented Leadership; Low LMX, Task-Oriented)

Hypothesis 1a:	Followers with high LMX relationships with project managers prefer change-oriented leadership

Hypothesis 1b:	Followers with low LMX relationships with project managers prefer task-oriented leadership

Based on the Correlations table in (**Table** 4-12), the observed z value (z_{obs} = 2.463) for variables - LMX low and high, Task-Oriented and Change-Oriented is greater than 1.96 (z_{obs}>1.96) (**Table** 4-13). This suggests a correlation coefficient that is statistically significantly different. There is a statistically significant difference in the strength of the correlation.

Task-oriented leadership explains significantly more of the variance in change-oriented leadership for low LMX. Hypothesis 1a and hypothesis 1b hold true.

Table 4-12: Correlations between Two Groups - LMX High/Low, Total Scores (Task-Oriented, Relations-Oriented, Change-Oriented)

Descriptive Statistics

Tot_LMX (Binned)		Mean	Std. Deviation	N
LOW	Tot_TO	37.86	4.830	49
	Tot_RO	45.90	5.906	49
	Tot_CO	50.78	7.822	49
HIGH	Tot_TO	40.24	3.269	33
	Tot_RO	47.76	5.075	33
	Tot_CO	54.79	6.532	33

Correlations

Tot_LMX (Binned)			Tot_TO	Tot_RO	Tot_CO
LOW	Tot_TO	Pearson Correlation	1	.789**	.848**
		Sig. (2-tailed)		.000	.000
		N	49	49	49
	Tot_RO	Pearson Correlation	.789**	1	.777**
		Sig. (2-tailed)	.000		.000
		N	49	49	49
	Tot_CO	Pearson Correlation	.848**	.777**	1

		Sig. (2-tailed)	.000	.000	
		N	49	49	49
HIGH	Tot_TO	Pearson Correlation	1	.727**	.588**
		Sig. (2-tailed)		.000	.000
		N	33	33	33
	Tot_RO	Pearson Correlation	.727**	1	.770**
		Sig. (2-tailed)	.000		.000
		N	33	33	33
	Tot_CO	Pearson Correlation	.588**	.770**	1
		Sig. (2-tailed)	.000	.000	
		N	33	33	33

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4-13: Calculation - Observed value of z

Low:	LMX High:	
$r_{L\ (TO,\ CO)}$ = .848	$r_{H\ (TO,\ CO)}$ = .588	
$N_{L\ (TO,\ CO)}$ = 49	$N_{H\ (TO,\ CO)}$ = 33	
z_L = 1.256 (Pallant 2010)	z_H = 0.678 (Pallant 2010)	z_{obs} = 2.463

Calculation:

z_{obs}	= $(z_L - z_H)/\text{sqrt}\ ((1/(N_L-3)+(1/N_H-3))$ (Pallant 2010)
	= (1.256 – 0.678) / sqrt ((1/(49-3)) + (1/(33-3)))
	= **2.463**

4.4.2 Relationship between Followers' High/Low LMX and Gender

The line - 0 cells (.0%) have expected count less than 5, is stated below the Chi-Square Tests table (**Table** 4-14). The test has not violated the assumption. The corrected value is 0.203 with p=0.652 where p>0.05; the Chi-Square test indicates that the result is not significant.

Table 4-14: Chi-Square Test (Gender, LMX High/Low Total Scores)

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Gender * Tot_LMX (Binned)	82	100.0%	0	.0%	82	100.0%

Gender * Tot_LMX (Binned) Crosstabulation

			Tot_LMX (Binned)		
			LOW	HIGH	Total
Gender	FEMALE	Count	26	15	41
		% within Gender	63.4%	36.6%	100.0%
		% within Tot_LMX (Binned)	53.1%	45.5%	50.0%
		% of Total	31.7%	18.3%	50.0%
	MALE	Count	23	18	41
		% within Gender	56.1%	43.9%	100.0%
		% within Tot_LMX (Binned)	46.9%	54.5%	50.0%
		% of Total	28.0%	22.0%	50.0%
Total		Count	49	33	82
		% within Gender	59.8%	40.2%	100.0%
		% within Tot_LMX (Binned)	100.0%	100.0%	100.0%
		% of Total	59.8%	40.2%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.456[a]	1	.499		
Continuity Correction[b]	.203	1	.652		
Likelihood Ratio	.457	1	.499		
Fisher's Exact Test				.653	.326
Linear-by-Linear Association	.451	1	.502		
N of Valid Cases	82				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 16.50.

b. Computed only for a 2x2 table

4.4.2.1 LMX High/Low and Followers' Gender (High LMX-Male, Low LMX-Female)

Hypothesis 2a:	High LMX relationships affect male followers
Hypothesis 2b:	Low LMX relationships affect female followers

For the female respondents, 63.4% of them are in LMX low and 36.6% in LMX high. 56.1% of the male respondents fall in LMX low and 43.9%, LMX high. 59.8% of the sample experience LMX low and 40.2%, LMX high. (**Table** 4-14)

The proportion of females in LMX high and low is not significantly different from the proportion of males in LMX high and low. The results suggest there may be no relationship between LMX high/low and gender.

4.4.3 Relationship between Followers' Gender and Project Managers' Leadership Style

Applying t-test on followers' gender and the three (3) leadership styles, the test results suggest a significant difference between the followers' gender and two (2) leadership styles – relations-oriented and task-oriented.

4.4.3.1 T-test (Gender, Task-Oriented)

In the Independent Samples Test (**Table** 4-15), Sig. = 0.087 in Levene's test ($p>0.05$); hence, equal variance is assumed for the two groups. In the row - Equal variances assumed, Sig. (2-tailed) = 0.003 ($p<0.05$). There is a significant difference in the mean scores on task-oriented leadership for females and males.

Table 4-15: T-test (Gender, Task-Oriented Total Score)

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Tot_TO	FEMALE	41	37.39	4.625	.722
	MALE	41	40.24	3.713	.580

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Tot_TO	Equal variances assumed	3.004	.087	-3.081	80	.003	-2.854	.926	-4.697	-1.010
	Equal variances not assumed			-3.081	76.429	.003	-2.854	.926	-4.698	-1.009

4.4.3.2 T-test (Gender, Relations-Oriented)

In the Independent Samples Test (**Table** 4-16), Sig. = 0.381 in Levene's test ($p>0.05$); hence, equal variance is assumed for the two groups. In the row - Equal variances assumed, Sig. (2-tailed) = 0.015 ($p<0.05$). There is a significant difference in the mean scores on relations-oriented leadership for females and males.

Table 4-16: T-test (Gender, Relations-Oriented Total Score)

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Tot_RO	FEMALE	41	45.15	5.812	.908
	MALE	41	48.15	5.077	.793

16

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Tot_RO	Equal variances assumed	.775	.381	-2.489	80	.015	-3.000	1.205	-5.398	-.602
	Equal variances not assumed			-2.489	78.582	.015	-3.000	1.205	-5.399	-.601

4.4.3.3 T-test (Gender, Change-Oriented)

In the Independent Samples Test (**Table** 4-17), Sig. = 0.011 (p<=0.05) in Levene's test; hence, variances 3 are not the same for the two groups. In the row - Equal variances not assumed, Sig. (2-tailed) = 0.090 5 (p>0.05). There is no significant difference in the mean scores on change-oriented leadership for females and males.

Table 4-17: T-test (Gender, Change-Oriented Total Score)

20

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Tot_CO	FEMALE	41	50.98	8.448	1.319
	MALE	41	53.80	6.325	.988

1

Independent Samples Test

	Levene's Test for Equality of Variances	t-test for Equality of Means

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Tot_CO	Equal variances assumed	6.856	.011	-1.717	80	.090	-2.829	1.648	-6.109	.451
	Equal variances not assumed			-1.717	74.123	.090	-2.829	1.648	-6.113	.455

4.4.3.4 Followers' Gender and Leadership Style (Female and Relations-Oriented; Male and Task-Oriented)

Hypothesis 3a:	Female followers prefer relations-oriented leadership
Hypothesis 3b:	Male followers prefer task-oriented leadership

Based on the Correlations table (**Table** 4-18), the observed z value (z_{obs} = 1.238) value for male and female for Task-Oriented and Relations-Oriented is greater than -1.96 and less than 1.96 (-1.96 < z_{obs} < 1.96) (**Table** 4-19). Hence, the correlation coefficient is not statistically significantly different. Hypothesis 3a and hypothesis 3b may not hold true.

Table 4-18: Correlations between Two Groups - Gender, Total Scores (Task-Oriented, Relations-Oriented, Change-Oriented)

Descriptive Statistics

Gender		Mean	Std. Deviation	N
FEMALE	Tot_TO	37.39	4.625	41
	Tot_RO	45.15	5.812	41
	Tot_CO	50.98	8.448	41
MALE	Tot_TO	40.24	3.713	41
	Tot_RO	48.15	5.077	41

Descriptive Statistics

Gender		Mean	Std. Deviation	N
FEMALE	Tot_TO	37.39	4.625	41
	Tot_RO	45.15	5.812	41
	Tot_CO	50.98	8.448	41
MALE	Tot_TO	40.24	3.713	41
	Tot_RO	48.15	5.077	41
	Tot_CO	53.80	6.325	41

Correlations

Gender			Tot_TO	Tot_RO	Tot_CO
FEMALE	Tot_TO	Pearson Correlation	1	.803**	.886**
		Sig. (2-tailed)		.000	.000
		N	41	41	41
	Tot_RO	Pearson Correlation	.803**	1	.813**
		Sig. (2-tailed)	.000		.000
		N	41	41	41
	Tot_CO	Pearson Correlation	.886**	.813**	1
		Sig. (2-tailed)	.000	.000	
		N	41	41	41
MALE	Tot_TO	Pearson Correlation	1	.682**	.616**
		Sig. (2-tailed)		.000	.000
		N	41	41	41
	Tot_RO	Pearson Correlation	.682**	1	.713**
		Sig. (2-tailed)	.000		.000
		N	41	41	41
	Tot_CO	Pearson Correlation	.616**	.713**	1
		Sig. (2-tailed)	.000	.000	
		N	41	41	41

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4-19: Calculation - Observed value of z

Calculation of z_{obs}

Female:	Male:	
$r_{F\ (TO,\ RO)}$ = .803	$r_{M\ (TO,\ RO)}$ = .682	
$N_{F\ (TO,\ RO)}$ = 41	$N_{M\ (TO,\ RO)}$ = 41	
z_F = 1.113 (Pallant, 2010)	Z_M = 0.829 (Pallant, 2010)	z_{obs} = 1.238

Calculation:

z_{obs}	$= (z_F - z_M)/\text{sqrt}((1/(N_F-3)+(1/N_M-3))$ (Pallant 2010)
	= (1.113-0.829) / sqrt ((1/(41-3)) + (1/(41-3)))
	= 1.238

4.5 Additional Findings

Oneway ANOVA tests between Age Group and LMX, between Age Group and the three (3) leadership styles lead to no variability between the two groups.

4.5.1 Oneway ANOVA (Age Group, LMX)

In the Test of Homogeneity of Variances (**Table** 4-20), Sig.= 0.040 ($p<0.05$) in Levene's test. Assumption of the homogeneity of variance is violated. Sig.= 0.946 ($p>0.05$) in Between Groups test; hence, there is no significant difference with the mean scores of the LMX Total Score for the three (3) age groups.

The test results indicate that there is no variability between LMX (independent variable) and the three (3) age groups.

Table 4-20: Oneway ANOVA (Age Group, LMX Total Score)

Descriptives

Tot_LMX

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
<= 28	34	25.06	4.045	.694	23.65	26.47	19	35
29 - 40	24	24.75	4.656	.950	22.78	26.72	14	33

41+	24	25.21	6.100	1.245	22.63	27.78	15	35
Total	82	25.01	4.839	.534	23.95	26.08	14	35

1

Test of Homogeneity of Variances

Tot_LMX

Levene Statistic	df1	df2	Sig.
3.348	2	79	.040

ANOVA

Tot_LMX

19

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.647	2	1.324	.055	.946
Within Groups	1894.341	79	23.979		
Total	1896.988	81			

3

Robust Tests of Equality of Means

Tot_LMX

	Statistic[a]	df1	df2	Sig.
Welch	.051	2	45.673	.950
Brown-Forsythe	.052	2	60.860	.950

4.5.2 Oneway ANOVA (Age Group, Task-Oriented)

5

In the Test of Homogeneity of Variances (**Table** 4-21), Sig.= 0.109 (p>0.05) in Levene's test. 10 There is no significant difference with the mean scores of the Task-Oriented Total Score for the three (3) age groups.

Sig.= 0.446 (p>0.05) in Between Groups test. 10 There is no significant difference with the mean scores of the Task-Oriented Total Score for the three (3) age groups.

Sig. = 0.447 (p> 0.05) in Welch test and Sig. = 0.426 in Brown-Forsythe test. There is no significant difference with the mean scores of the Task-Oriented Total Score for the three (3) age groups.

The test results indicate that there is no variability between Task-Oriented leadership and the three (3) age groups.

Table 4-21: Oneway ANOVA (Age Group, Task-Oriented Total Score)

Descriptives

Tot_TO

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
<= 28	34	39.35	4.954	.850	37.62	41.08	28	45
29 - 40	24	39.00	3.788	.773	37.40	40.60	31	45
41+	24	37.88	4.184	.854	36.11	39.64	31	45
Total	82	38.82	4.409	.487	37.85	39.79	28	45

Test of Homogeneity of Variances

Tot_TO

Levene Statistic	df1	df2	Sig.
2.278	2	79	.109

ANOVA

Tot_TO

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	31.866	2	15.933	.816	.446
Within Groups	1542.390	79	19.524		
Total	1574.256	81			

Robust Tests of Equality of Means

Tot_TO

	Statistic[a]	df1	df2	Sig.
Welch	.818	2	51.403	.447
Brown-Forsythe	.864	2	78.248	.426

a. Asymptotically F distributed.

4.5.3 Oneway ANOVA (Age Group, Relations-Oriented)

In the Test of Homogeneity of Variances (**Table** 4-22), Sig.= 0.491 (p>0.05) in Levene's test. There is no significant difference in the mean scores of the Relations-Oriented Total Score for the three (3) age groups.

Sig.= 0.629 (p>0.05) in Between Groups test. There is no significant difference with the mean scores of the Relations-Oriented Total Score for the three (3) age groups

Sig. = 0.587 (p>0.05) in Welch test and Sig. = 0.615 (p>0.05) in Brown-Forsythe test. There is no significant difference in the mean scores of the Relations-Oriented Total Score for the three (3) age groups.

The test results indicate that there is no variability between Relations-Oriented leadership and the three (3) age groups.

Table 4-22: Oneway ANOVA (Age Group, Relations-Oriented Total Score)

Descriptives

Tot_RO

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
<= 28	34	47.06	6.267	1.075	44.87	49.25	30	55
29 - 40	24	47.00	5.461	1.115	44.69	49.31	35	55
41+	24	45.71	4.912	1.003	43.63	47.78	36	54
Total	82	46.65	5.629	.622	45.41	47.88	30	55

Test of Homogeneity of Variances

Tot_RO

Levene Statistic	df1	df2	Sig.
.718	2	79	.491

ANOVA

Tot_RO

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	29.903	2	14.952	.466	.629
Within Groups	2536.841	79	32.112		
Total	2566.744	81			

Robust Tests of Equality of Means

Tot_RO

	Statistic[a]	df1	df2	Sig.
Welch	.539	2	51.202	.587
Brown-Forsythe	.489	2	77.860	.615

a. Asymptotically F distributed.

4.5.4 Oneway ANOVA (Age Group, Change-Oriented)

In the Test of Homogeneity of Variances (**Table** 4-23), Sig.= 0.845 (p> 0.05) in Levene's test. There is no significant difference with the mean scores of the Change-Oriented Total Score for the three (3) age groups.

Sig.= 0.154 (p>0.05) in Between Groups test. There is no significant difference with the mean scores of the Change-Oriented Total Score for the three (3) age groups.

Sig. = 0.189 (p>0.05) in Welch test and Sig. = 0.153 (p>0.05) in Brown-Forsythe test. There is no significant difference with the mean scores of the Change-Oriented Total Score for the three (3) age groups.

The test results indicate that there is no variability between Change-Oriented leadership and the three (3) age groups.

Table 4-23: Oneway ANOVA (Age Group, Change-Oriented Total Score)

Descriptives

Tot_CO

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
<= 28	34	53.79	7.539	1.293	51.16	56.42	35	64
29 - 40	24	52.83	6.793	1.387	49.96	55.70	38	65
41+	24	49.96	7.992	1.631	46.58	53.33	35	64
Total	82	52.39	7.552	.834	50.73	54.05	35	65

Test of Homogeneity of Variances

Tot_CO

Levene Statistic	df1	df2	Sig.
.169	2	79	.845

ANOVA

Tot_CO

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	213.662	2	106.831	1.916	.154
Within Groups	4405.850	79	55.770		
Total	4619.512	81			

Robust Tests of Equality of Means

Tot_CO

	Statistic[a]	df1	df2	Sig.
Welch	1.720	2	49.631	.189
Brown-Forsythe	1.923	2	73.193	.153

a. Asymptotically F distributed.

4.6 Data Analysis and Findings

The study is based on eighty-two (82) respondents with project experiences in various industries and varied demographics (for example, race, years of working experience, gender, qualifications), with even distribution of male and female respondents – forty-one (41) males, forty-one (41) females.

4.6.1 Objectives of the Study

The **primary objectives** are to establish the presence of

- a relationship between the followers' high/low leader-member exchange (LMX) and the preferred project managers' leadership styles,
- a relationship between the followers' high/low leader-member exchange and the followers' gender, and
- a relationship between the followers' gender and the preferred project managers' leadership style.

The **secondary objectives** are to investigate further the possibility that

- the followers with high LMX relationship with the project managers may prefer change-oriented leadership,
- the followers with low LMX relationship with the project managers may prefer task-oriented leadership,
- high LMX relationships affect male followers,
- low LMX relationships affect female followers,
- female followers prefer relations-oriented leadership, and
- male followers prefer task-oriented leadership.

4.6.2 Highlights of the Statistical Test Results

Tests involving correlations, t-test and univariate ANOVA indicate that there is a relationship between the followers' high/low leader-member exchange (LMX) and in particular, task-oriented and change-oriented leadership styles. Correlations between two groups test further points to followers with high LMX choosing project managers with change-oriented leadership, and followers with low LMX preferring those with task-oriented leadership. This aligns to the findings by Graen and Uhl-Bien (1995) as mentioned in section 1.3.1.

Applying correlations between two groups test, another set of test results suggest that the followers' gender plays no significant role in the relationships with LMX, whether high or low. The tests on gender and LMX do not support Yrle et al., (2002) findings that gender dissimilarity may result in low LMX (section 2.2.3).

5 DISCUSSION

Project managers or project leaders in Malaysian projects may be attuned to task-oriented or change-oriented leadership styles. For a project team to succeed, from "forming" to "performing" in the team formation stages (**Figure** 2-2) in the shortest time without spending precious time on "storming", a task-oriented project manager or leader may be less pressured to work on leader-member exchange (LMX) effort. However, for followers with high LMX, regardless of what gender or age group, may exert enough pressure on the project manager/leader to nudge him/her towards change-oriented leadership style to ensure highest compatibility between leader and members throughout the project duration.

5.1 Relationship between Followers' High/Low LMX and Project Managers' Leadership Style

Firstly, there is a relationship between followers with high/low LMX and project managers' leadership style. The leader-member exchange (LMX) defines leadership as an interaction process between leaders and follows that involves inter-personal relationships. According to Yukl (2005), LMX emphasizes the way a leader and follower develops their relationship that influences each other's role in an organization. Wang (2005) further illustrated that LMX reflects organizational commitment, behaviour, performance, empowerment, career progress and other important variables within the organization.

5.1.1 Followers with High/Low LMX and Leadership Style (High LMX, Change-Oriented Leadership; Low LMX, Task-Oriented)

Followers with high LMX relationships with project managers prefer transformational or change-oriented leadership. Lee (2005) mentioned that high LMX relationships between leaders and followers have significant effect on the transformational or change-oriented as the preferred leadership style in an organization.

The result of low LMX relationships with project managers shows that there exists a group of followers who prefer transactional or task-oriented leadership. Transactional leadership is a style which the leader interacts with his followers through rewards and punishments.

5.2 Relationship between Followers' High/Low LMX and Gender

Duffy and Ferrier (2003) highlighted that research on the impact of gender differences in leader-follower dyads has produced inconsistent results on the quality of LMX.

5.2.1 LMX High/Low and Followers' Gender (High LMX-Male, Low LMX-Female)

63.4% of female respondents are in LMX low; 36.6% in LMX high. 56.1% of the male respondents fall in LMX low and 43.9%, LMX high. 59.8% of the respondents experience LMX low and 40.2%, LMX high. (**Table** 4-14)

Gender seems to be irrelevant to the measurement of LMX high/low. The current findings seem to bring to light the important subject of cultural differences. Boatwright and Forrest (2000) posit that regardless of followers' gender, leaders are expected to first and foremost address their needs.

5.3 Relationship between Followers' Gender and Project Managers' Leadership Style

Based on the analysed data, there is no relationship between followers' gender and the preferred leadership style.

5.3.1 Followers' Gender and Leadership Style (Female and Relations-Oriented; Male and Task-Oriented)

Followers' gender is not the determining factor to which leadership style is preferred. Bauer and Green (1996) observe that similar dyads are fond of each other more than dyads that are not. Graen and Cashman (1975) suggest that the quality of LMX relationships is formed based on personal compatibility such as values, experiences and attitudes.

6 CONCLUSION AND RECOMMENDATION

> [H]igh-income, inclusive economies have high performing education systems that focus on both cognitive (factual knowledge) and non-cognitive (teamwork, leadership and communication) skills. (Ng 2014, p.62)

Malaysia is rushing to achieve Tun Mahathir's Vision 2020 when Malaysia will be known as a high income and developed nation. This rush has incurred public outcry due to the price hikes and removal of subsidies. With price hikes, the cost of doing any projects will also rise. The market uncertainty in the current globalized age has a domino effect on Malaysian revenue streams; hence, several projects may fail to address the business needs. "Unforeseen circumstances" may frequently be the reason for failing to meet the stated project objectives. The National Auditor-General Report 2012 is a good source to search for a list of failed projects in Malaysia amounting to losses of millions of ringgit of public's money.

The question remains, when will Malaysia have the right-skilled talents to manage and lead projects? Can Malaysians differentiate effective leadership styles?

Transformational or change-oriented leadership tends to be more satisfying to followers as both parties share the same goals and visions in working towards the good of an organization with mutual trust and respect (Vechio, 2003). Fletcher (2004) implies that transformational leaders often practice the use of personal power to coach followers as well as treat them as individuals to develop their knowledge and capabilities which linked the transformational leadership with high levels of effort. Evidence from this study suggests that followers consider change-oriented leadership as the most important behaviour to be displayed by leaders, whereas task-

oriented, as the least important. (Elkins and Keller, 2003) Bass and Avolio (1985) emphasize that a transactional leader could improve the performance of the project team by providing contingent rewards. Yukl (2005) mentions that a transactional leader ensures that the followers meet predetermined standards and intervenes with followers for non-compliance of standards should it arise.

An organization that is committed to run a project must have a strong vision and mission to ensure that the project is delivered at the right time, within the approved budget and acceptable quality. The organization must be equipped not only with efficient systematic processes of running projects, but also highly performing people who are capable of leading and guiding the project team members. The scope and complexity of the project will require cross-functional teams to collaborate in completing the project activities. The leaders may well be equipped with the right competencies, capabilities and leadership skills to further enhance the growth of the followers and meet the needs of the project. The concern lies in the question "what are the right leadership styles or behaviours to affect a high performing project team?"

Future Research. Further research is needed to determine the relationship between gender dissimilarity and quality of LMX. The demographics should also include the followers' preferred gender and nationality of the project manager. The understanding of the local culture and race may present an interesting and unique find that isolates Malaysia from the rest of the world in the area of project management and project leadership.

Transactional leadership may be effective in a work environment that requires an exchange of favours in a follower-leader relationship. Transformational leadership becomes meaningful when followers understand the rules of the game and play their role effectively, pushing aside differences while keeping an eye on the end game. Irrespective of gender, followers want a balanced leader – one who appreciates talent, one who understands followers' challenges and able to find the middle ground, one who is able to see through followers' needs and provide the best suited platform for them to shine.

BIBLIOGRAPHY

APPENDICES

1. Appendix 1: Demographics (Role in Project)

Project_role

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	OTHER STAKEHOLDER	1	1.2	1.2	1.2
	INTERNAL PROJECT TEAM (TECHNICAL)	15	18.3	18.3	19.5
	INTERNAL PROJECT TEAM (BUSINESS)	36	43.9	43.9	63.4
	CONTRACT PROJECT TEAM (TECHNICAL)	5	6.1	6.1	69.5
	CONTRACT PROJECT TEAM (BUSINESS)	2	2.4	2.4	72.0
	END USER	8	9.8	9.8	81.7
	PROJECT LEADER	13	15.9	15.9	97.6
	STEERING COMMITTEE	2	2.4	2.4	100.0
	Total	82	100.0	100.0	

2. Appendix 2: Demographics (Position in Company)

Post_in_company

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	OTHER	5	6.1	6.1	6.1
	MANAGER AND ABOVE	27	32.9	32.9	39.0
	EXECUTIVE	45	54.9	54.9	93.9
	NON-EXEC (SUPERVISORY)	1	1.2	1.2	95.1
	NON-EXEC (NON-SUPERVISORY)	4	4.9	4.9	100.0
	Total	82	100.0	100.0	

3. Appendix 3: Demographics (Highest Education)

Highest_edu

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MASTER'S DEGREE	14	17.1	17.1	17.1
	BACHELOR'S DEGREE	55	67.1	67.1	84.1
	DIPLOMA	8	9.8	9.8	93.9
	CERTIFICATE	2	2.4	2.4	96.3
	SECONDARY SCHOOL	3	3.7	3.7	100.0
	Total	82	100.0	100.0	

4. Appendix 4: Demographics (Years in Company)

Yrs_in_company

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	9	11.0	11.0	11.0
	2	19	23.2	23.2	34.1
	3	15	18.3	18.3	52.4
	4	8	9.8	9.8	62.2
	5	8	9.8	9.8	72.0
	6	1	1.2	1.2	73.2
	7	1	1.2	1.2	74.4
	8	2	2.4	2.4	76.8
	10	1	1.2	1.2	78.0
	11	1	1.2	1.2	79.3
	13	1	1.2	1.2	80.5
	14	4	4.9	4.9	85.4
	15	1	1.2	1.2	86.6
	16	2	2.4	2.4	89.0
	19	1	1.2	1.2	90.2
	20	1	1.2	1.2	91.5
	22	1	1.2	1.2	92.7

29	1	1.2	1.2	93.9
30	2	2.4	2.4	96.3
31	1	1.2	1.2	97.6
32	1	1.2	1.2	98.8
36	1	1.2	1.2	100.0
Total	82	100.0	100.0	

5. Appendix 5: Demographics (Total Years Working)

Tot_working_yrs

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	2.4	2.4	2.4
	2	7	8.5	8.5	11.0
	3	4	4.9	4.9	15.9
	4	10	12.2	12.2	28.0
	5	3	3.7	3.7	31.7
	6	7	8.5	8.5	40.2
	7	5	6.1	6.1	46.3
	8	8	9.8	9.8	56.1
	9	2	2.4	2.4	58.5
	12	1	1.2	1.2	59.8
	13	2	2.4	2.4	62.2
	14	1	1.2	1.2	63.4
	15	3	3.7	3.7	67.1
	16	3	3.7	3.7	70.7
	18	2	2.4	2.4	73.2
	19	1	1.2	1.2	74.4
	20	2	2.4	2.4	76.8
	21	2	2.4	2.4	79.3
	22	2	2.4	2.4	81.7
	23	1	1.2	1.2	82.9
	24	2	2.4	2.4	85.4
	25	2	2.4	2.4	87.8
	29	1	1.2	1.2	89.0

	30	4	4.9	4.9	93.9
	32	1	1.2	1.2	95.1
	34	1	1.2	1.2	96.3
	35	2	2.4	2.4	98.8
	36	1	1.2	1.2	100.0
	Total	82	100.0	100.0	

6. Appendix 6: Demographics (Race)

10

Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Malay	31	37.8	37.8	37.8
	Chinese	33	40.2	40.2	78.0
	Indian	18	22.0	22.0	100.0
	Total	82	100.0	100.0	

7. Appendix 7: Demographics (Gender)

42

Statistics

Gender

N	Valid	82
	Missing	0

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	FEMALE	41	50.0	50.0	50.0
	MALE	41	50.0	50.0	100.0
	Total	82	100.0	100.0	

8. Appendix 8: Demographics and Normality Test (Age in 2013)

8-1 : Descriptive Statistics

	46 N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis

	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Age_2013	82	22	59	35.46	10.347	.711	.266	-.748	.526
Valid N (listwise)	82								

8-2 : Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Age_2013	82	100.0%	0	.0%	82	100.0%

8-3 : Descriptives

			Statistic	Std. Error
Age_2013	Mean		35.46	1.143
	95% Confidence Interval for Mean	Lower Bound	33.19	
		Upper Bound	37.74	
	5% Trimmed Mean		34.92	
	Median		31.00	
	Variance		107.067	
	Std. Deviation		10.347	
	Minimum		22	
	Maximum		59	
	Range		37	
	Interquartile Range		17	
	Skewness		.711	.266
	Kurtosis		-.748	.526

8-4 : Extreme Values

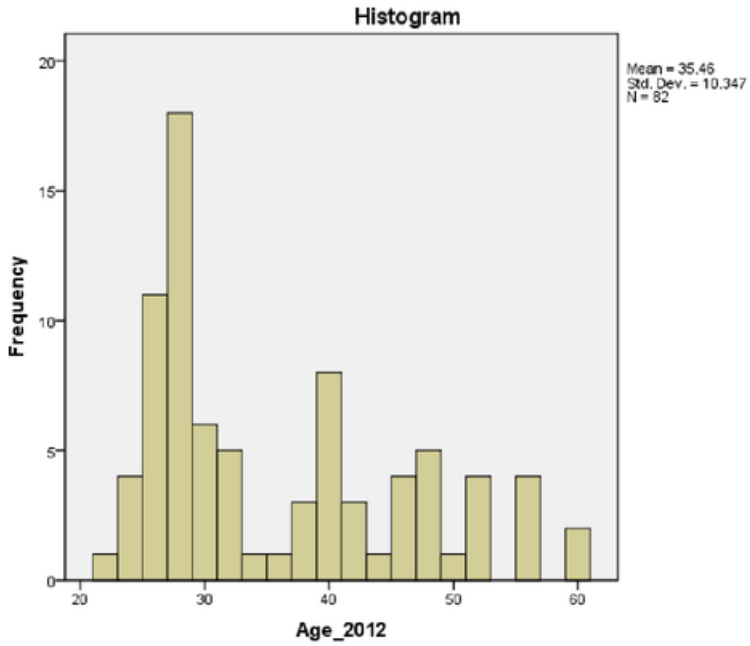
			Case Number	Value
Age_2013	Highest	1	58	59
		2	63	59
		3	52	56
		4	53	56
		5	54	56
	Lowest	1	73	22
		2	77	23
		3	80	24
		4	76	24
		5	25	24

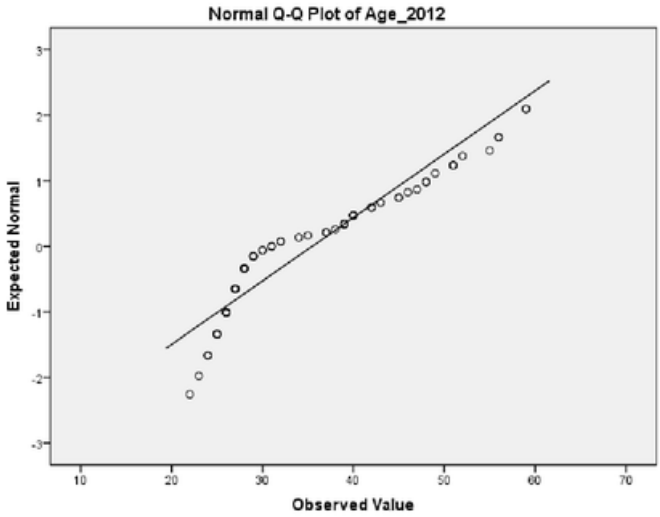
23

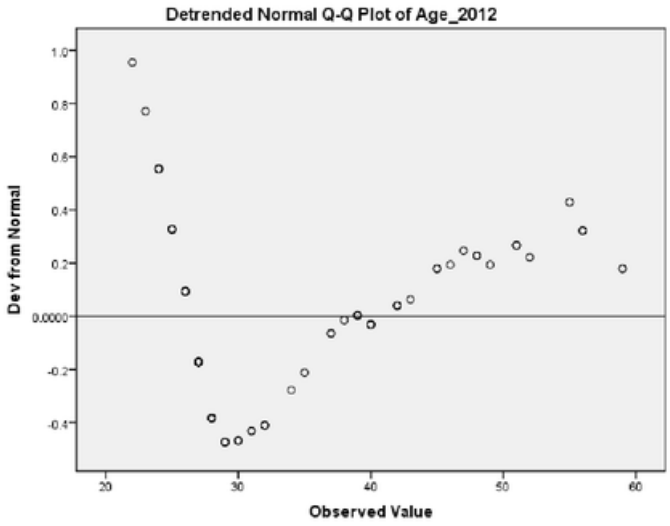
8-5 : Tests of Normality

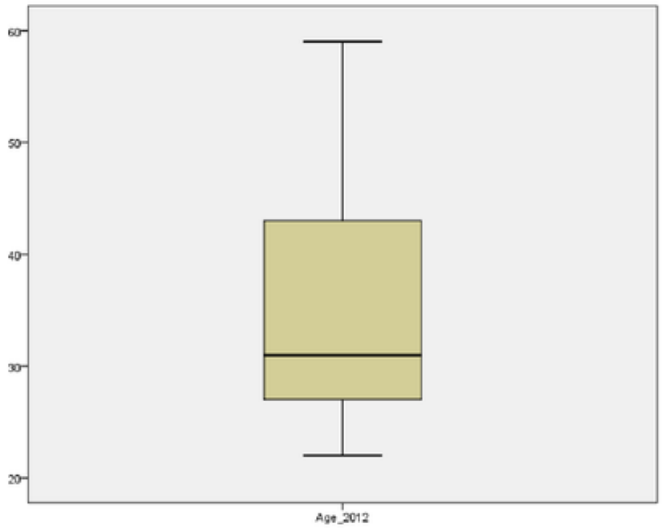
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Age_2013	.197	82	.000	.885	82	.000

a. Lilliefors Significance Correction









9. Appendix 9: Frequencies (LMX High/Low)

9-1 : Statistics

Tot_LMX (Binned)

N	Valid	82
	Missing	0

9-2 : Tot_LMX (Binned)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	LOW	49	59.8	59.8	59.8
	HIGH	33	40.2	40.2	100.0
	Total	82	100.0	100.0	

10. Appendix 10: Normality Test (Itemized Questionnaire)

10-1 : Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
LMX1	82	100.0%	0	.0%	82	100.0%
LMX2	82	100.0%	0	.0%	82	100.0%
LMX3	82	100.0%	0	.0%	82	100.0%
LMX4	82	100.0%	0	.0%	82	100.0%
LMX5	82	100.0%	0	.0%	82	100.0%
LMX6	82	100.0%	0	.0%	82	100.0%
LMX7	82	100.0%	0	.0%	82	100.0%
TO1	82	100.0%	0	.0%	82	100.0%
TO2	82	100.0%	0	.0%	82	100.0%
TO3	82	100.0%	0	.0%	82	100.0%
TO4	82	100.0%	0	.0%	82	100.0%
TO5	82	100.0%	0	.0%	82	100.0%
TO6	82	100.0%	0	.0%	82	100.0%
TO7	82	100.0%	0	.0%	82	100.0%
TO8	82	100.0%	0	.0%	82	100.0%
TO9	82	100.0%	0	.0%	82	100.0%
RO1	82	100.0%	0	.0%	82	100.0%
RO2	82	100.0%	0	.0%	82	100.0%
RO3	82	100.0%	0	.0%	82	100.0%
RO4	82	100.0%	0	.0%	82	100.0%
RO5	82	100.0%	0	.0%	82	100.0%
RO6	82	100.0%	0	.0%	82	100.0%
RO7	82	100.0%	0	.0%	82	100.0%
RO8	82	100.0%	0	.0%	82	100.0%
RO9	82	100.0%	0	.0%	82	100.0%
RO10	82	100.0%	0	.0%	82	100.0%
RO11	82	100.0%	0	.0%	82	100.0%

CO1	82	100.0%	0	.0%	82	100.0%
CO2	82	100.0%	0	.0%	82	100.0%
CO3	82	100.0%	0	.0%	82	100.0%
CO4	82	100.0%	0	.0%	82	100.0%
CO5	82	100.0%	0	.0%	82	100.0%
CO6	82	100.0%	0	.0%	82	100.0%
CO7	82	100.0%	0	.0%	82	100.0%
CO8	82	100.0%	0	.0%	82	100.0%
CO9	82	100.0%	0	.0%	82	100.0%
CO10	82	100.0%	0	.0%	82	100.0%
CO11	82	100.0%	0	.0%	82	100.0%
CO12	82	100.0%	0	.0%	82	100.0%
CO13	82	100.0%	0	.0%	82	100.0%

10-2 : Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
LMX1	.228	82	.000	.869	82	.000
LMX2	.236	82	.000	.873	82	.000
LMX3	.234	82	.000	.875	82	.000
LMX4	.224	82	.000	.874	82	.000
LMX5	.212	82	.000	.892	82	.000
LMX6	.281	82	.000	.841	82	.000
LMX7	.247	82	.000	.823	82	.000
TO1	.301	82	.000	.763	82	.000
TO2	.262	82	.000	.835	82	.000
TO3	.278	82	.000	.760	82	.000
TO4	.343	82	.000	.730	82	.000
TO5	.301	82	.000	.760	82	.000
TO6	.287	82	.000	.790	82	.000
TO7	.262	82	.000	.785	82	.000
TO8	.288	82	.000	.790	82	.000
TO9	.350	82	.000	.721	82	.000
RO1	.309	82	.000	.746	82	.000
RO2	.250	82	.000	.798	82	.000
RO3	.246	82	.000	.815	82	.000
RO4	.347	82	.000	.718	82	.000
RO5	.283	82	.000	.765	82	.000
RO6	.274	82	.000	.779	82	.000
RO7	.246	82	.000	.802	82	.000
RO8	.314	82	.000	.756	82	.000
RO9	.283	82	.000	.765	82	.000

RO10	.260	82	.000	.856	82	.000
RO11	.258	82	.000	.816	82	.000
CO1	.275	82	.000	.803	82	.000
CO2	.287	82	.000	.790	82	.000
CO3	.263	82	.000	.810	82	.000
CO4	.217	82	.000	.802	82	.000
CO5	.262	82	.000	.798	82	.000
CO6	.230	82	.000	.810	82	.000
CO7	.231	82	.000	.830	82	.000
CO8	.238	82	.000	.816	82	.000
CO9	.233	82	.000	.847	82	.000
CO10	.219	82	.000	.864	82	.000
CO11	.220	82	.000	.809	82	.000
CO12	.236	82	.000	.856	82	.000
CO13	.251	82	.000	.861	82	.000

a. Lilliefors Significance Correction

11. Appendix 11: Normality Test (Total Scores)

47

11-1 : Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Tot_LMX	82	14	35	25.01	4.839	.179	.266	-.249	.526
Tot_TO	82	28	45	38.82	4.409	-.458	.266	-.826	.526
Tot_RO	82	30	55	46.65	5.629	-.455	.266	-.327	.526
Tot_CO	82	35	65	52.39	7.552	-.488	.266	-.706	.526
Valid N (listwise)	82								

11-2 : Case Processing Summary

7

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Tot_LMX	82	100.0%	0	.0%	82	100.0%
Tot_TO	82	100.0%	0	.0%	82	100.0%
Tot_RO	82	100.0%	0	.0%	82	100.0%
Tot_CO	82	100.0%	0	.0%	82	100.0%

11-3 : Descriptives

			Statistic	Std. Error
Tot_LMX	Mean		25.01	.534
	95% Confidence Interval for Mean	Lower Bound	23.95	
		Upper Bound	26.08	
	5% Trimmed Mean		24.99	
	Median		25.00	
	Variance		23.420	
	Std. Deviation		4.839	
	Minimum		14	
	Maximum		35	
	Range		21	
	Interquartile Range		6	
	Skewness		.179	.266
	Kurtosis		-.249	.526
Tot_TO	Mean		38.82	.487
	95% Confidence Interval for Mean	Lower Bound	37.85	
		Upper Bound	39.79	
	5% Trimmed Mean		38.96	
	Median		39.50	
	Variance		19.435	
	Std. Deviation		4.409	
	Minimum		28	
	Maximum		45	
	Range		17	
	Interquartile Range		8	
	Skewness		-.458	.266
	Kurtosis		-.826	.526
Tot_RO	Mean		46.65	.622
	95% Confidence Interval for Mean	Lower Bound	45.41	
		Upper Bound	47.88	
	5% Trimmed Mean		46.85	
	Median		48.00	
	Variance		31.688	
	Std. Deviation		5.629	
	Minimum		30	

	Maximum		55	
	Range		25	
	Interquartile Range		9	
	Skewness		-.455	.266
	Kurtosis		-.327	.526
Tot_CO	Mean		52.39	.834
	95% Confidence Interval for Mean	Lower Bound	50.73	
		Upper Bound	54.05	
	5% Trimmed Mean		52.64	
	Median		54.00	
	Variance		57.031	
	Std. Deviation		7.552	
	Minimum		35	
	Maximum		65	
	Range		30	
	Interquartile Range		13	
	Skewness		-.488	.266
	Kurtosis		-.706	.526

11-4 : Extreme Values

			Case Number	Value
Tot_LMX	Highest	1	9	35
		2	53	35
		3	75	35
		4	16	34
		5	54	34
	Lowest	1	1	14
		2	17	15
		3	64	17
		4	39	17
		5	28	17[a]
Tot_TO	Highest	1	9	45
		2	27	45
		3	49	45
		4	73	45
		5	74	45[b]
	Lowest	1	37	28
		2	29	30
		3	42	31

		4	28	31
		5	20	31[c]
Tot_RO	Highest	1	21	55
		2	73	55
		3	74	55
		4	76	55
		5	77	55[d]
	Lowest	1	37	30
		2	28	35
		3	20	36
		4	64	37
		5	29	37
Tot_CO	Highest	1	60	65
		2	11	64
		3	21	64
		4	53	63
		5	22	62[e]
	Lowest	1	64	35
		2	19	35
		3	20	37
		4	18	38
		5	29	40[f]

a. Only a partial list of cases with the value 17 are shown in the table of lower extremes.

b. Only a partial list of cases with the value 45 are shown in the table of upper extremes.

c. Only a partial list of cases with the value 31 are shown in the table of lower extremes.

d. Only a partial list of cases with the value 55 are shown in the table of upper extremes.

e. Only a partial list of cases with the value 62 are shown in the table of upper extremes.

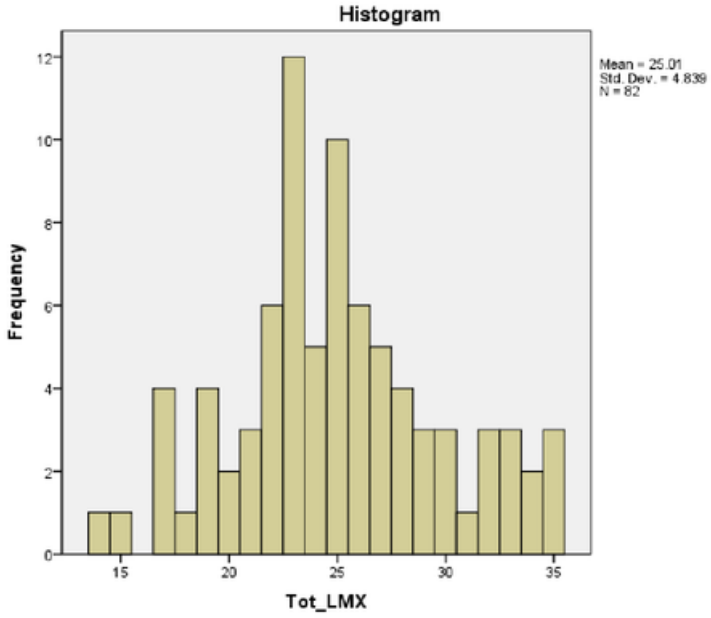
f. Only a partial list of cases with the value 40 are shown in the table of lower extremes.

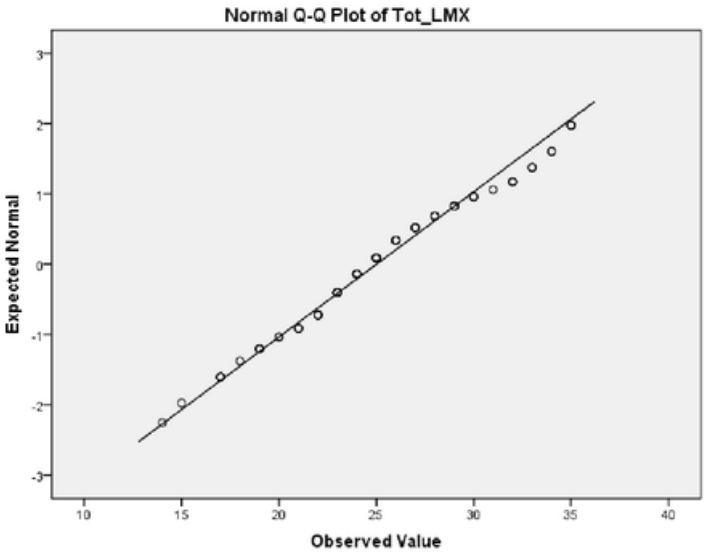
11-5 : Tests of Normality

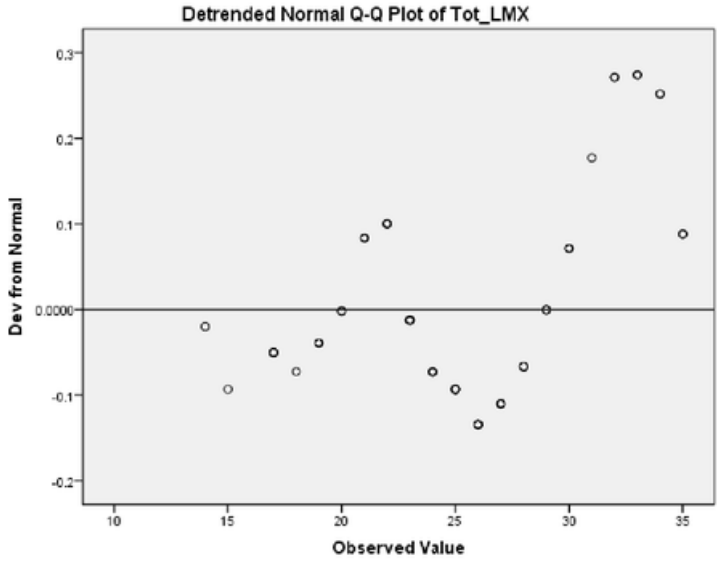
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Tot_LMX	.099	82	.047	.977	82	.142

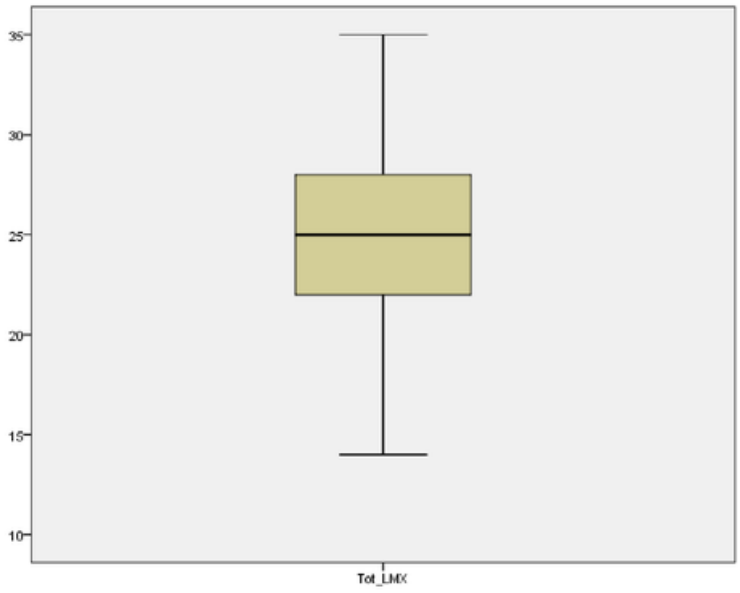
Tot_TO	.131	82	.001	.941	82	.001
Tot_RO	.110	82	.015	.962	82	.016
Tot_CO	.123	82	.004	.953	82	.004

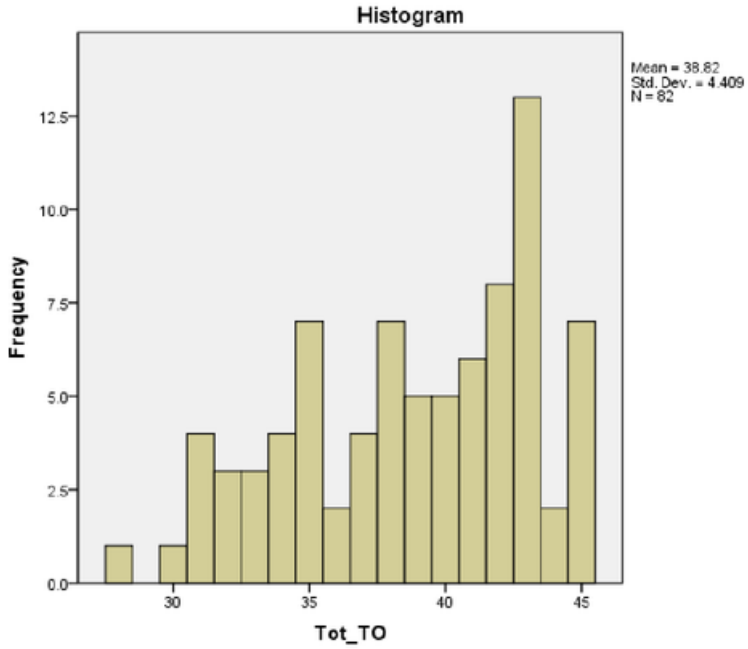
a. Lilliefors Significance Correction

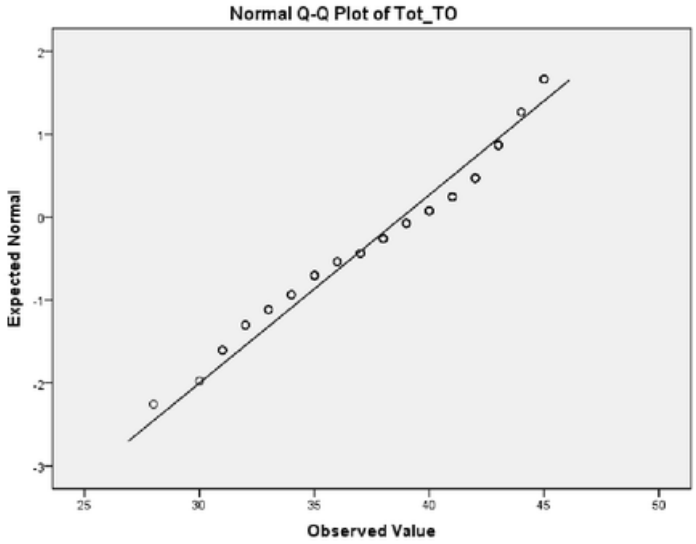


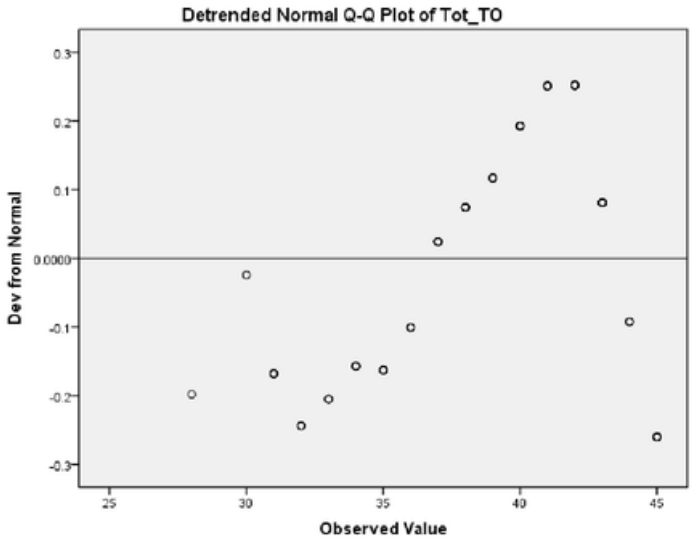



Detrended Normal Q-Q Plot of Tot_LMX
Dev from Normal
0.3
0.2
0.1
0.0000
-0.1
-0.2
10
15
20
25
30
35
Observed Value


35
30
25
20
15
10
Tot_LMX


Histogram
Mean = 38.82
Std. Dev. = 4.409
N = 82
Frequency
Tot_TO


Normal Q-Q Plot of Tot_TO
Expected Normal
Observed Value


Detrended Normal Q-Q Plot of Tot_TO
Dev from Normal
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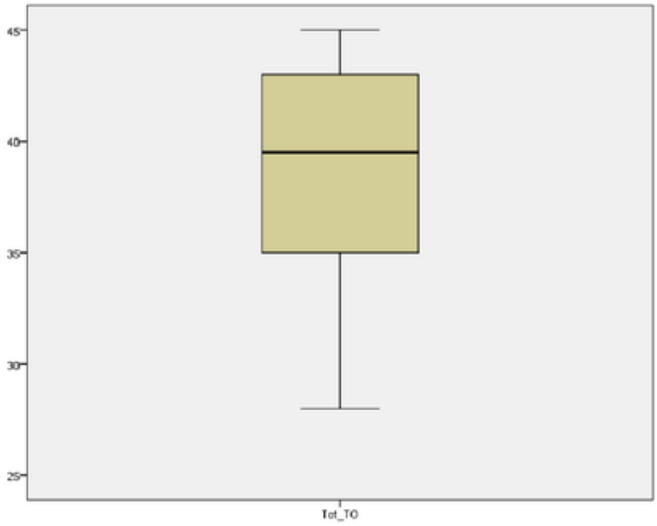
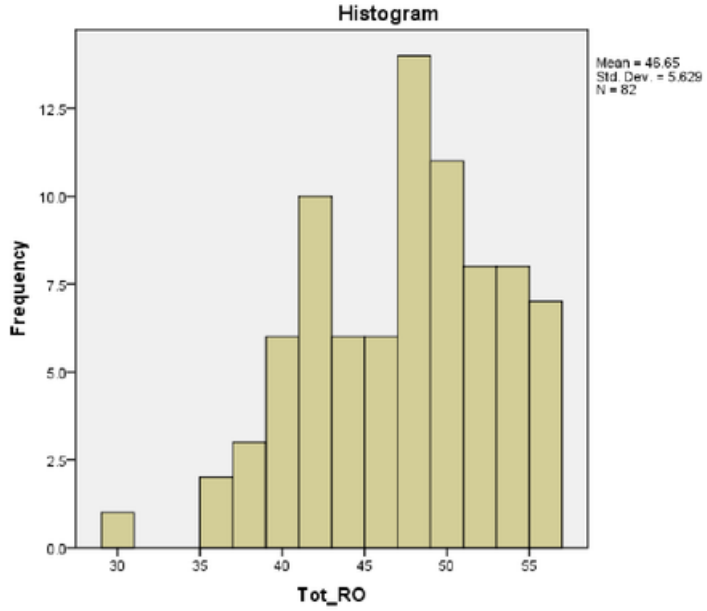
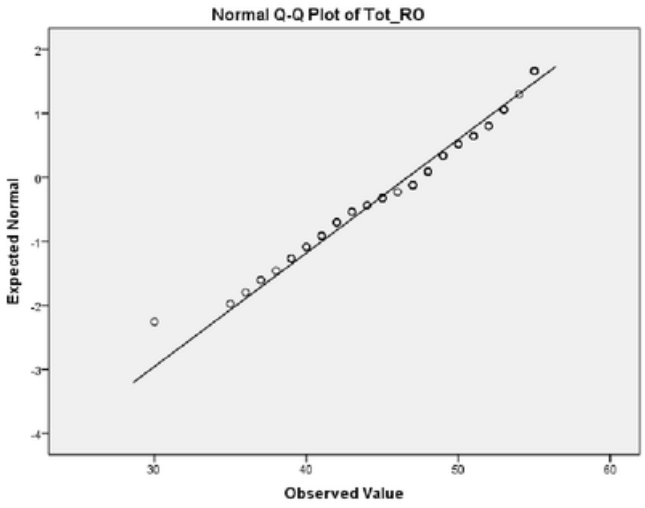
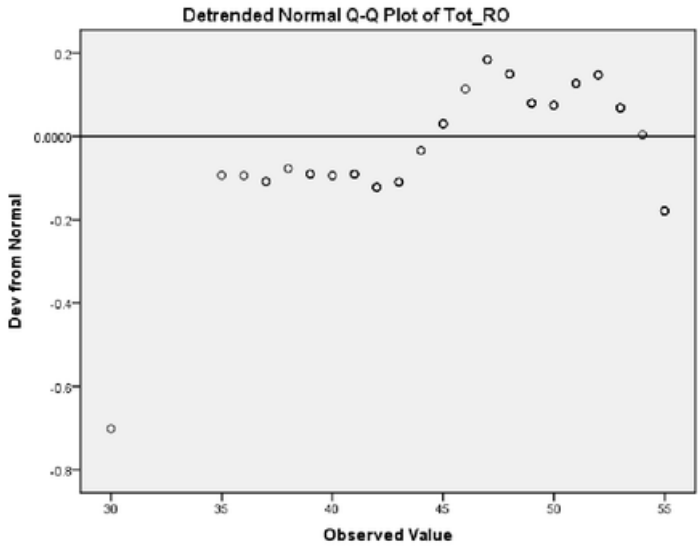
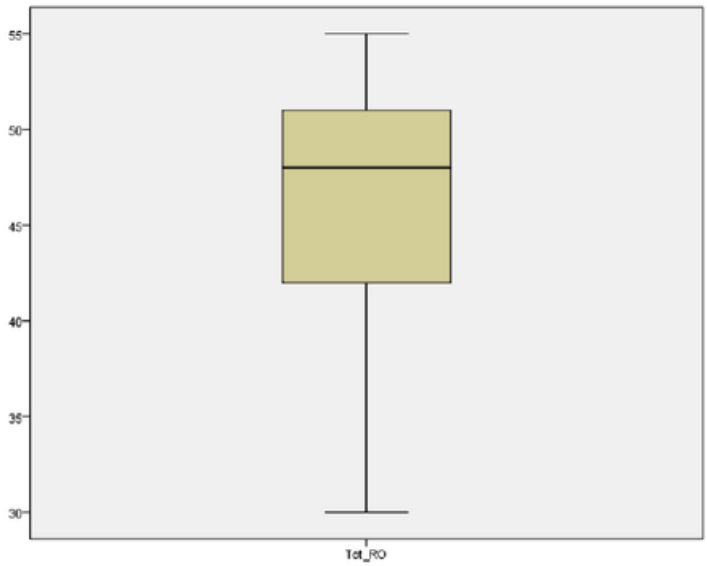
0.2
0.1
0.0000
-0.1
-0.2
-0.3
25
30
35
40
45
Observed Value

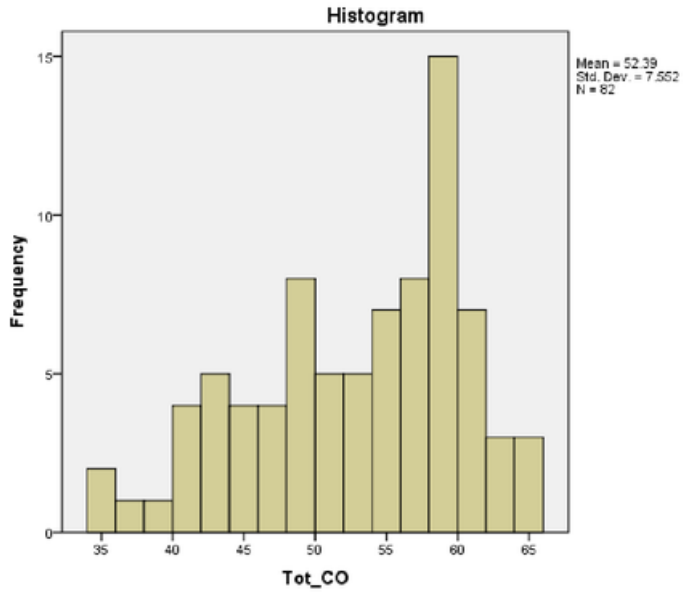

45
40
35
30
25
Tot_TO

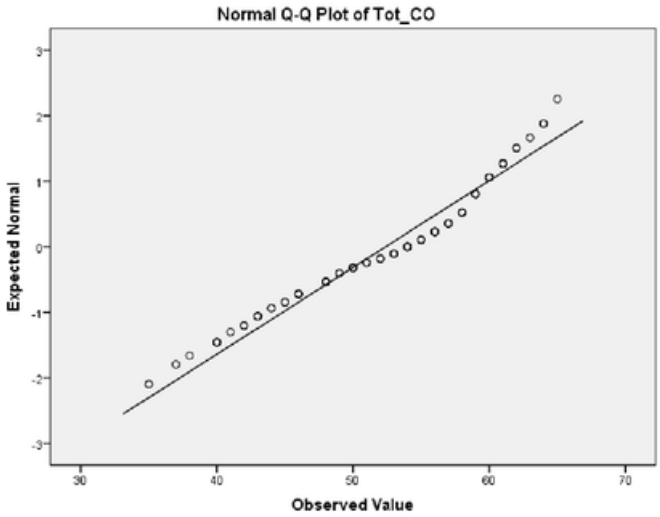

Histogram
Mean = 46.65
Std. Dev. = 5.629
N = 82
Frequency
Tot_RO

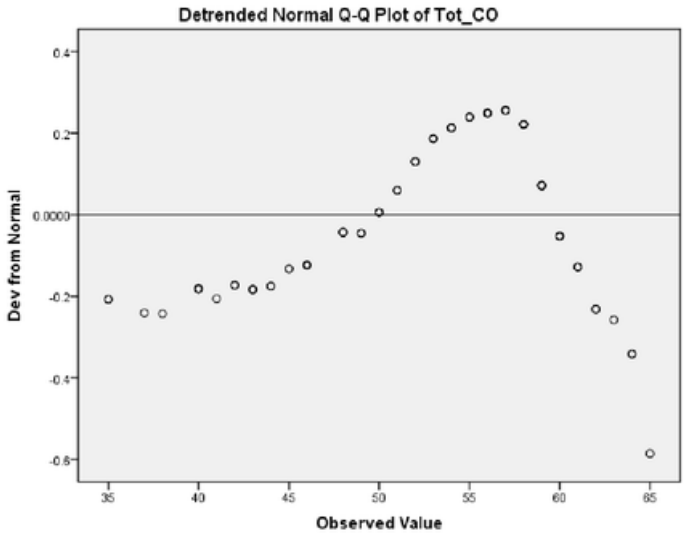

Normal Q-Q Plot of Tot_RO
Expected Normal
Observed Value

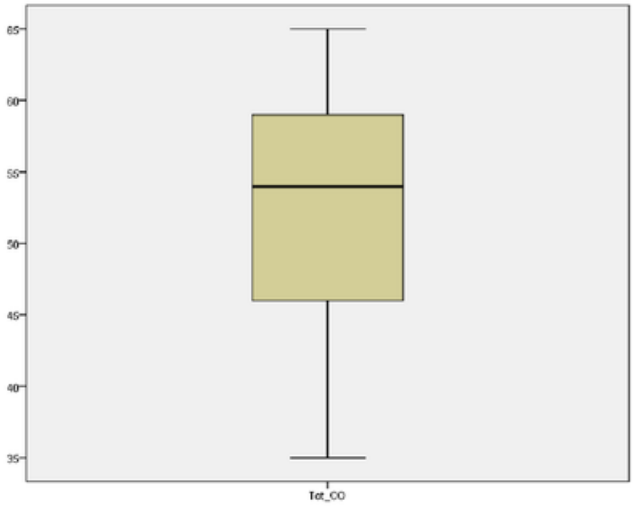

Detrended Normal Q-Q Plot of Tot_RO
Dev from Normal
0.2
0.0000
-0.2
-0.4
-0.6
-0.8
30
35
40
45
50
55
Observed Value


55
50
45
40
35
30
Tot_RO


Histogram
Mean = 52.39
Std. Dev. = 7.552
N = 82
Frequency
Tot_CO


Normal Q-Q Plot of Tot_CO
Expected Normal
Observed Value





12. Appendix 12: Reliability Test (Itemized Questionnaire on LMX)

12-1 : Case Processing Summary

		N	%
Cases	Valid	82	100.0
	Excluded[a]	0	.0

Total	82	100.0

a. Listwise deletion based on all variables in the procedure.

12 -2 : Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.906	.907	7

12-3 : Item Statistics

	Mean	Std. Deviation	N
LMX1	3.59	.831	82
LMX2	3.56	.944	82
LMX3	3.55	.932	82
LMX4	3.59	.874	82
LMX5	3.38	.898	82
LMX6	3.60	.814	82
LMX7	3.76	.746	82

12-4 : Inter-Item Correlation Matrix

	LMX1	LMX2	LMX3	LMX4	LMX5	LMX6	LMX7
LMX1	1.000	.662	.633	.542	.461	.462	.671
LMX2	.662	1.000	.656	.540	.519	.506	.617
LMX3	.633	.656	1.000	.738	.620	.490	.692
LMX4	.542	.540	.738	1.000	.643	.491	.619
LMX5	.461	.519	.620	.643	1.000	.565	.508
LMX6	.462	.506	.490	.491	.565	1.000	.568
LMX7	.671	.617	.692	.619	.508	.568	1.000

12-5 : Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.573	3.378	3.756	.378	1.112	.012	7

12-6 : Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
LMX1	21.43	17.779	.707	.564	.893
LMX2	21.45	16.917	.722	.561	.892
LMX3	21.46	16.474	.804	.689	.882
LMX4	21.43	17.260	.743	.615	.889
LMX5	21.63	17.494	.682	.525	.896
LMX6	21.41	18.394	.625	.440	.901

14

12-1 : Case Processing Summary

		N	%
Cases	Valid	82	100.0
	Excluded[a]	0	.0
	Total	82	100.0

LMX7	21.26	18.020	.764	.621	.888

8

12-7 : Scale Statistics

Mean	Variance	Std. Deviation	N of Items
25.01	23.420	4.839	7

13. Appendix 13: Reliability Test (Itemized Questionnaire on Task-Oriented)

15

13-1 : Case Processing Summary

		N	%
Cases	Valid	82	100.0
	Excluded[a]	0	.0
	Total	82	100.0

a. Listwise deletion based on all variables in the procedure.

13-2 : Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.861	.864	9

13-3 : Item Statistics

	Mean	Std. Deviation	N
TO1	4.35	.692	82
TO2	4.04	.793	82
TO3	4.34	.633	82
TO4	4.45	.669	82
TO5	4.37	.676	82
TO6	4.27	.786	82

TO7	4.27	.686	82
TO8	4.26	.798	82
TO9	4.48	.652	82

13-4 : Inter-Item Correlation Matrix

	TO1	TO2	TO3	TO4	TO5	TO6	TO7	TO8	TO9
TO1	1.000	.449	.510	.531	.512	.300	.396	.438	.471
TO2	.449	1.000	.590	.364	.435	.182	.345	.395	.205
TO3	.510	.590	1.000	.448	.512	.260	.270	.289	.260
TO4	.531	.364	.448	1.000	.667	.400	.352	.382	.464
TO5	.512	.435	.512	.667	1.000	.533	.371	.488	.468
TO6	.300	.182	.260	.400	.533	1.000	.552	.400	.326
TO7	.396	.345	.270	.352	.371	.552	1.000	.459	.346
TO8	.438	.395	.289	.382	.488	.400	.459	1.000	.498
TO9	.471	.205	.260	.464	.468	.326	.346	.498	1.000

13-5 : Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.313	4.037	4.476	.439	1.109	.017	9

13-6 : Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
TO1	34.46	15.437	.648	.468	.840
TO2	34.78	15.556	.520	.452	.854
TO3	34.48	16.178	.561	.472	.849
TO4	34.37	15.568	.647	.513	.841
TO5	34.45	15.140	.730	.613	.833
TO6	34.55	15.584	.521	.456	.854
TO7	34.55	15.905	.559	.425	.849
TO8	34.56	15.064	.603	.426	.845
TO9	34.34	16.178	.540	.390	.851

13-7 : Scale Statistics

Mean	Variance	Std. Deviation	N of Items
38.82	19.435	4.409	9

14. Appendix 14: Reliability Test (Itemized Questionnaire on Relations-Oriented)

14-1 : Case Processing Summary

		N	%
Cases	Valid	82	100.0
	Excluded[a]	0	.0
	Total	82	100.0

a. Listwise deletion based on all variables in the procedure.

14-2 : Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.894	.895	11

14-3 : Item Statistics

	Mean	Std. Deviation	N
RO1	4.39	.733	82
RO2	4.23	.708	82
RO3	4.17	.783	82
RO4	4.49	.614	82
RO5	4.34	.652	82
RO6	4.32	.701	82
RO7	4.23	.725	82
RO8	4.37	.712	82
RO9	4.34	.652	82
RO10	3.63	.896	82
RO11	4.13	.857	82

14-4 : Inter-Item Correlation Matrix

	RO1	RO2	RO3	RO4	RO5	RO6	RO7	RO8	RO9	RO10	RO11
RO1	1.000	.609	.507	.505	.415	.525	.339	.386	.209	.483	.407
RO2	.609	1.000	.618	.504	.442	.522	.399	.393	.308	.525	.518
RO3	.507	.618	1.000	.467	.465	.463	.408	.441	.417	.407	.444
RO4	.505	.504	.467	1.000	.504	.526	.409	.519	.350	.374	.437
RO5	.415	.442	.465	.504	1.000	.436	.405	.366	.361	.364	.469

RO6	.525	.522	.463	.526	.436	1.000	.340	.458	.274	.521	.483
RO7	.339	.399	.408	.409	.405	.340	1.000	.408	.483	.493	.466
RO8	.386	.393	.441	.519	.366	.458	.408	1.000	.632	.367	.263
RO9	.209	.308	.417	.350	.361	.274	.483	.632	1.000	.280	.337
RO10	.483	.525	.407	.374	.364	.521	.493	.367	.280	1.000	.627
RO11	.407	.518	.444	.437	.469	.483	.466	.263	.337	.627	1.000

27

14-5 : Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.241	3.634	4.488	.854	1.235	.051	11

4

14-6 : Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
RO1	42.26	26.440	.625	.487	.884
RO2	42.41	26.122	.700	.560	.880
RO3	42.48	25.833	.659	.489	.882
RO4	42.16	27.147	.651	.489	.883
RO5	42.30	27.202	.597	.390	.886
RO6	42.33	26.495	.652	.480	.883
RO7	42.41	26.740	.590	.413	.886
RO8	42.28	26.846	.588	.563	.886
RO9	42.30	27.770	.508	.511	.891
RO10	43.01	25.123	.642	.535	.884
RO11	42.51	25.413	.641	.532	.884

8

14-7 : Scale Statistics

Mean	Variance	Std. Deviation	N of Items
46.65	31.688	5.629	11

15. Appendix 15: Reliability Test (Every Survey Question on Change-Oriented)

27

15-1 : Case Processing Summary

		N	%
Cases	Valid	82	100.0
	Excluded[a]	0	.0

Total	82	100.0

a. Listwise deletion based on all variables in the procedure.

15-2 : Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.911	.911	13

15-3 : Item Statistics

	Mean	Std. Deviation	N
CO1	4.20	.867	82
CO2	4.27	.786	82
CO3	4.06	1.010	82
CO4	4.04	.793	82
CO5	4.21	.857	82
CO6	4.13	.828	82
CO7	4.06	.851	82
CO8	4.17	.767	82
CO9	3.83	.783	82
CO10	3.76	.883	82
CO11	3.98	.753	82
CO12	3.84	.808	82
CO13	3.85	.848	82

15-4 : Inter-Item Correlation Matrix

	CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO8	CO9	CO10	CO11	CO12	CO13
CO1	1.000	.592	.677	.546	.443	.445	.536	.488	.323	.386	.329	.027	.342
CO2	.592	1.000	.647	.578	.539	.475	.436	.578	.336	.398	.386	.223	.282
CO3	.677	.647	1.000	.722	.641	.566	.512	.544	.435	.487	.391	.193	.299
CO4	.546	.578	.722	1.000	.661	.632	.655	.518	.309	.525	.477	.086	.210
CO5	.443	.539	.641	.661	1.000	.709	.609	.660	.403	.443	.333	.155	.229
CO6	.445	.475	.566	.632	.709	1.000	.759	.703	.360	.552	.362	.069	.204
CO7	.536	.436	.512	.655	.609	.759	1.000	.589	.312	.480	.407	-.040	.166
CO8	.488	.578	.544	.518	.660	.703	.589	1.000	.522	.591	.371	.223	.324
CO9	.323	.336	.435	.309	.403	.360	.312	.522	1.000	.690	.475	.562	.539
CO10	.386	.398	.487	.525	.443	.552	.480	.591	.690	1.000	.529	.378	.496
CO11	.329	.386	.391	.477	.333	.362	.407	.371	.475	.529	1.000	.460	.323
CO12	.027	.223	.193	.086	.155	.069	-.040	.223	.562	.378	.460	1.000	.506

15-1 : Case Processing Summary

		N	%
Cases	Valid	82	100.0
	Excluded[a]	0	.0
	Total	82	100.0

CO13	.342	.282	.299	.210	.229	.204	.166	.324	.539	.496	.323	.506	1.000

15-5 : Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	4.030	3.756	4.268	.512	1.136	.028	13

15-6 : Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
CO1	48.20	48.801	.617	.606	.905
CO2	48.12	49.145	.659	.555	.903
CO3	48.33	45.878	.740	.708	.899
CO4	48.35	48.454	.720	.706	.901
CO5	48.18	47.954	.703	.657	.901
CO6	48.26	48.242	.705	.732	.901
CO7	48.33	48.594	.650	.689	.903
CO8	48.22	48.544	.739	.660	.900
CO9	48.56	49.509	.627	.645	.904
CO10	48.63	47.568	.713	.661	.900
CO11	48.41	50.344	.573	.477	.906
CO12	48.55	52.596	.322	.545	.916
CO13	48.54	50.795	.456	.440	.911

15-7 : Scale Statistics

Mean	Variance	Std. Deviation	N of Items
52.39	57.031	7.552	13

16. Appendix 16: Reliability Test (Total Scores)

16-1 : Case Processing Summary

	N	%

Cases	Valid	82	100.0
	Excluded[a]	0	.0
	Total	82	100.0

a. Listwise deletion based on all variables in the procedure.

16-2 : Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.829	.839	4

16-3 : Item Statistics

	Mean	Std. Deviation	N
Tot_LMX	25.01	4.839	82
Tot_TO	38.82	4.409	82
Tot_RO	46.65	5.629	82
Tot_CO	52.39	7.552	82

16-4 : Inter-Item Correlation Matrix

	Tot_LMX	Tot_TO	Tot_RO	Tot_CO
Tot_LMX	1.000	.387	.319	.348
Tot_TO	.387	1.000	.773	.789
Tot_RO	.319	.773	1.000	.780
Tot_CO	.348	.789	.780	1.000

16-5 : Summary Item Statistics

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Inter-Item Correlations	.566	.319	.789	.470	2.473	.051	4

16-6 : Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Tot_LMX	137.85	265.410	.376	.154	.889
Tot_TO	124.05	221.331	.819	.696	.740
Tot_RO	116.22	194.420	.778	.674	.729
Tot_CO	110.48	146.796	.789	.696	.738

16-7 : Scale Statistics

Mean	Variance	Std. Deviation	N of Items
162.87	348.192	18.660	4

17. Appendix 17: Correlations - Total Scores (LMX, Task-Oriented)

17-1 : Descriptive Statistics

	Mean	Std. Deviation	N
Tot_LMX (Binned)	1.40	.493	82
Tot_TO	38.82	4.409	82

17-2 : Correlations

		Tot_LMX (Binned)	Tot_TO
Tot_LMX (Binned)	Pearson Correlation	1	.267*
	Sig. (2-tailed)		.015
	N	82	82
Tot_TO	Pearson Correlation	.267*	1
	Sig. (2-tailed)	.015	
	N	82	82

*. Correlation is significant at the 0.05 level (2-tailed).

18. Appendix 18: Correlations – Total Scores (LMX, Relations-Oriented)

18-1 : Descriptive Statistics

	Mean	Std. Deviation	N
Tot_LMX (Binned)	1.40	.493	82
Tot_RO	46.65	5.629	82

18-2 : Correlations

		Tot_LMX (Binned)	Tot_RO
Tot_LMX (Binned)	Pearson Correlation	1	.163
	Sig. (2-tailed)		.143
	N	82	82

Tot_RO	Pearson Correlation	.163	1
	Sig. (2-tailed)	.143	
	N	82	82

19. Appendix 19: Correlations – Total Scores (LMX, Change-Oriented)

19-1 : Descriptive Statistics

	Mean	Std. Deviation	N
Tot_LMX (Binned)	1.40	.493	82
Tot_CO	52.39	7.552	82

19-2 : Correlations

		Tot_LMX (Binned)	Tot_CO
Tot_LMX (Binned)	Pearson Correlation	1	.262*
	Sig. (2-tailed)		.017
	N	82	82
Tot_CO	Pearson Correlation	.262*	1
	Sig. (2-tailed)	.017	
	N	82	82

*. Correlation is significant at the 0.05 level (2-tailed).

20. Appendix 20: Correlations between Two Groups – LMX High/Low, Total Scores (Task-Oriented, Relations-Oriented, Change-Oriented)

20-1 : Descriptive Statistics

Tot_LMX (Binned)		Mean	Std. Deviation	N
LOW	Tot_TO	37.86	4.830	49
	Tot_RO	45.90	5.906	49
	Tot_CO	50.78	7.822	49
HIGH	Tot_TO	40.24	3.269	33
	Tot_RO	47.76	5.075	33
	Tot_CO	54.79	6.532	33

20-2 : Correlations

Tot_LMX (Binned)	Tot_TO	Tot_RO	Tot_CO

LOW	Tot_TO	Pearson Correlation	1	.789**	.848**
		Sig. (2-tailed)		.000	.000
		N	49	49	49
	Tot_RO	Pearson Correlation	.789**	1	.777**
		Sig. (2-tailed)	.000		.000
		N	49	49	49
	Tot_CO	Pearson Correlation	.848**	.777**	1
		Sig. (2-tailed)	.000	.000	
		N	49	49	49
HIGH	Tot_TO	Pearson Correlation	1	.727**	.588**
		Sig. (2-tailed)		.000	.000
		N	33	33	33
	Tot_RO	Pearson Correlation	.727**	1	.770**
		Sig. (2-tailed)	.000		.000
		N	33	33	33
	Tot_CO	Pearson Correlation	.588**	.770**	1
		Sig. (2-tailed)	.000	.000	
		N	33	33	33

**. Correlation is significant at the 0.01 level (2-tailed).

21. Appendix 21: Correlations between Two Groups – Gender, Total Score of Leadership Styles

21-1 : Descriptive Statistics

Gender		Mean	Std. Deviation	N
FEMALE	Tot_TO	37.39	4.625	41
	Tot_RO	45.15	5.812	41
	Tot_CO	50.98	8.448	41
MALE	Tot_TO	40.24	3.713	41
	Tot_RO	48.15	5.077	41
	Tot_CO	53.80	6.325	41

21-2 : Correlations

Gender			Tot_TO	Tot_RO	Tot_CO
FEMALE	Tot_TO	Pearson Correlation	1	.803**	.886**
		Sig. (2-tailed)		.000	.000

		N	41	41	41
	Tot_RO	Pearson Correlation	.803**	1	.813**
		Sig. (2-tailed)	.000		.000
		N	41	41	41
	Tot_CO	Pearson Correlation	.886**	.813**	1
		Sig. (2-tailed)	.000	.000	
		N	41	41	41
MALE	Tot_TO	Pearson Correlation	1	.682**	.616**
		Sig. (2-tailed)		.000	.000
		N	41	41	41
	Tot_RO	Pearson Correlation	.682**	1	.713**
		Sig. (2-tailed)	.000		.000
		N	41	41	41
	Tot_CO	Pearson Correlation	.616**	.713**	1
		Sig. (2-tailed)	.000	.000	
		N	41	41	41

**. Correlation is significant at the 0.01 level (2-tailed).

22. Appendix 22: T-Test (Gender, Task-Oriented Total Score)

22-1 : Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Tot_TO	FEMALE	41	37.39	4.625	.722
	MALE	41	40.24	3.713	.580

22-2 : Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Tot_TO	Equal variances assumed	3.004	.087	-3.081	80	.003	-2.854	.926	-4.697	-1.010

20

22-1 : Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Tot_TO	FEMALE	41	37.39	4.625	.722

	Equal variances not assumed			-3.081	76.429	.003	-2.854	.926	-4.698	-1.009

23. Appendix 23: T-Test (Gender, Relations-Oriented Total Score)

20

23-1 : Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Tot_RO	FEMALE	41	45.15	5.812	.908
	MALE	41	48.15	5.077	.793

16

23-2 : Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Tot_RO	Equal variances assumed	.775	.381	-2.489	80	.015	-3.000	1.205	-5.398	-.602
	Equal variances not assumed			-2.489	78.582	.015	-3.000	1.205	-5.399	-.601

24. Appendix 24: T-Test (Gender, Change-Oriented Total Score)

20

24-1 : Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Tot_CO	FEMALE	41	50.98	8.448	1.319
	MALE	41	53.80	6.325	.988

24-2 : Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Tot_CO	Equal variances assumed	6.856	.011	-1.717	80	.090	-2.829	1.648	-6.109	.451
	Equal variances not assumed			-1.717	74.123	.090	-2.829	1.648	-6.113	.455

25. Appendix 25: T-Test (LMX High/Low, Task-Oriented Total Score)

25-1 : Group Statistics

	Tot_LMX (Binned)	N	Mean	Std. Deviation	Std. Error Mean
Tot_TO	LOW	49	37.86	4.830	.690
	HIGH	33	40.24	3.269	.569

25-2 : Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
								95% Confidence Interval of the Difference	
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper

Tot_TO	Equal variances assumed	9.902	.002	-2.478	80	.015	-2.385	.963	-4.301	-.469
	Equal variances not assumed			-2.667	79.992	.009	-2.385	.894	-4.165	-.605

26. Appendix 26: T-Test (LMX High/Low, Relations-Oriented Total Score)

26-1 : Group Statistics

	Tot_LMX (Binned)	N	Mean	Std. Deviation	Std. Error Mean
Tot_RO	LOW	49	45.90	5.906	.844
	HIGH	33	47.76	5.075	.883

26-2 : Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Tot_RO	Equal variances assumed	.570	.452	-1.478	80	.143	-1.860	1.258	-4.364	.645
	Equal variances not assumed			-1.522	75.262	.132	-1.860	1.222	-4.293	.574

27. Appendix 27: T-Test (LMX High/Low, Change-Oriented Total Score)

27-1 : Group Statistics

Tot_LMX (Binned)	N	Mean	Std. Deviation	Std. Error Mean

Tot_CO	LOW	49	50.78	7.822	1.117
	HIGH	33	54.79	6.532	1.137

27-2 : Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Tot_CO	Equal variances assumed	2.765	.100	-2.430	80	.017	-4.012	1.651	-7.299	-.726
	Equal variances not assumed			-2.517	76.242	.014	-4.012	1.594	-7.187	-.837

28. Appendix 28: Oneway ANOVA (Age Group, LMX Total Score)

28-1 : Descriptives

Tot_LMX

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
<= 28	34	25.06	4.045	.694	23.65	26.47	19	35
29 - 40	24	24.75	4.656	.950	22.78	26.72	14	33
41+	24	25.21	6.100	1.245	22.63	27.78	15	35
Total	82	25.01	4.839	.534	23.95	26.08	14	35

28-2 : Test of Homogeneity of Variances

Tot_LMX

Levene Statistic	df1	df2	Sig.
3.348	2	79	.040

28-3 : ANOVA

Tot_LMX

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.647	2	1.324	.055	.946
Within Groups	1894.341	79	23.979		
Total	1896.988	81			

28-4 : Robust Tests of Equality of Means

Tot_LMX

	Statistic[a]	df1	df2	Sig.
Welch	.051	2	45.673	.950
Brown-Forsythe	.052	2	60.860	.950

a. Asymptotically F distributed.

28-5 : Post Hoc Tests

Multiple Comparisons

Tot_LMX

Tukey HSD

(I) Age_2013 (Binned)	(J) Age_2013 (Binned)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
<= 28	29 - 40	.309	1.306	.970	-2.81	3.43
	41+	-.150	1.306	.993	-3.27	2.97
29 - 40	<= 28	-.309	1.306	.970	-3.43	2.81
	41+	-.458	1.414	.944	-3.83	2.92
41+	<= 28	.150	1.306	.993	-2.97	3.27
	29 - 40	.458	1.414	.944	-2.92	3.83

28-6 : Homogeneous Subsets

Tot_LMX

Tukey HSD[a,b]

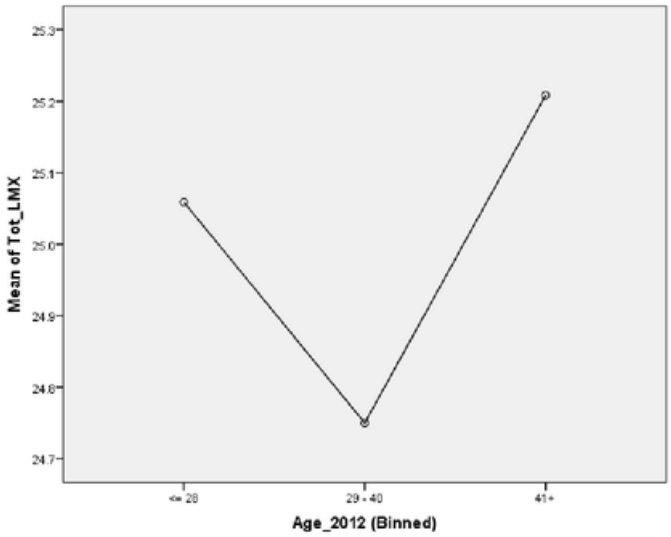
Age_2013 (Binned)	N	Subset for alpha = 0.05
		1
29 - 40	24	24.75
<= 28	34	25.06
41+	24	25.21
Sig.		.938

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 26.609.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

28-7 : Means Plots



29. Appendix 29: Oneway ANOVA (Age Group, Task Oriented Total Score)

29-1 : Descriptives

Tot_TO

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
<= 28	34	39.35	4.954	.850	37.62	41.08	28	45
29 - 40	24	39.00	3.788	.773	37.40	40.60	31	45
41+	24	37.88	4.184	.854	36.11	39.64	31	45
Total	82	38.82	4.409	.487	37.85	39.79	28	45

29-2 : Test of Homogeneity of Variances

Tot_TO

Levene Statistic	df1	df2	Sig.
2.278	2	79	.109

29-3 : ANOVA

Tot_TO

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	31.866	2	15.933	.816	.446
Within Groups	1542.390	79	19.524		
Total	1574.256	81			

29-4 : Robust Tests of Equality of Means

Tot_TO

	Statistic[a]	df1	df2	Sig.
Welch	.818	2	51.403	.447
Brown-Forsythe	.864	2	78.248	.426

a. Asymptotically F distributed.

29-5 : Post Hoc Tests

Multiple Comparisons

Tot_TO

Tukey HSD

(I) Age_2013 (Binned)	(J) Age_2013 (Binned)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
<= 28	29 - 40	.353	1.178	.952	-2.46	3.17
	41+	1.478	1.178	.425	-1.34	4.29
29 - 40	<= 28	-.353	1.178	.952	-3.17	2.46
	41+	1.125	1.276	.653	-1.92	4.17
41+	<= 28	-1.478	1.178	.425	-4.29	1.34
	29 - 40	-1.125	1.276	.653	-4.17	1.92

29-6 : Homogeneous Subsets

Tot_TO

Tukey HSD[a,b]

Age_2013 (Binned)	N	Subset for alpha = 0.05

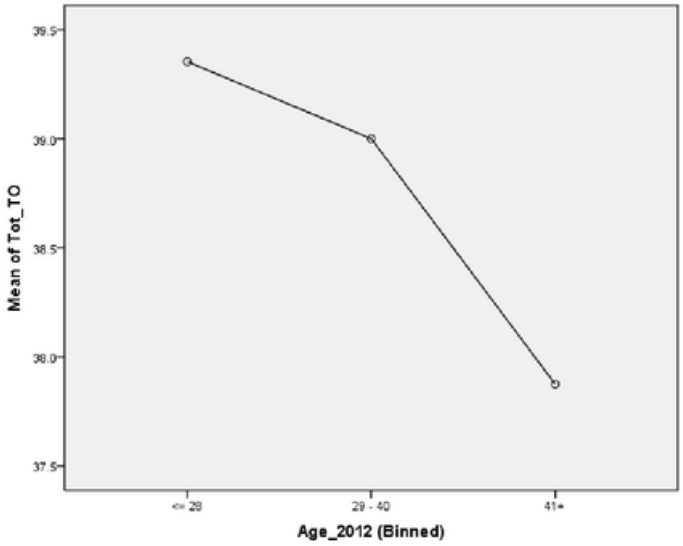
		1
41+	24	37.88
29 - 40	24	39.00
<= 28	34	39.35
Sig.		.445

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 26.609.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

29-7 : Means Plots



30. Appendix 30: Oneway ANOVA (Age Group, Relations-Oriented Total Score)

30-1 : Descriptives

Tot_RO

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
<= 28	34	47.06	6.267	1.075	44.87	49.25	30	55
29 - 40	24	47.00	5.461	1.115	44.69	49.31	35	55
41+	24	45.71	4.912	1.003	43.63	47.78	36	54
Total	82	46.65	5.629	.622	45.41	47.88	30	55

58

30-2 : Test of Homogeneity of Variances

Tot_RO

Levene Statistic	df1	df2	Sig.
.718	2	79	.491

30-3 : ANOVA

Tot_RO

19

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	29.903	2	14.952	.466	.629
Within Groups	2536.841	79	32.112		
Total	2566.744	81			

3

30-4 : Robust Tests of Equality of Means

Tot_RO

	Statistic[a]	df1	df2	Sig.
Welch	.539	2	51.202	.587
Brown-Forsythe	.489	2	77.860	.615

a. Asymptotically F distributed.

37

30-5 : Post Hoc Tests

Multiple Comparisons

Tot_RO

Tukey HSD

31

(I) Age_2013 (Binned)	(J) Age_2013 (Binned)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
<= 28	29 - 40	.059	1.511	.999	-3.55	3.67
	41+	1.350	1.511	.646	-2.26	4.96
29 - 40	<= 28	-.059	1.511	.999	-3.67	3.55
	41+	1.292	1.636	.710	-2.62	5.20
41+	<= 28	-1.350	1.511	.646	-4.96	2.26
	29 - 40	-1.292	1.636	.710	-5.20	2.62

30-6 : Homogeneous Subsets

Tot_RO

Tukey HSD[a,b]

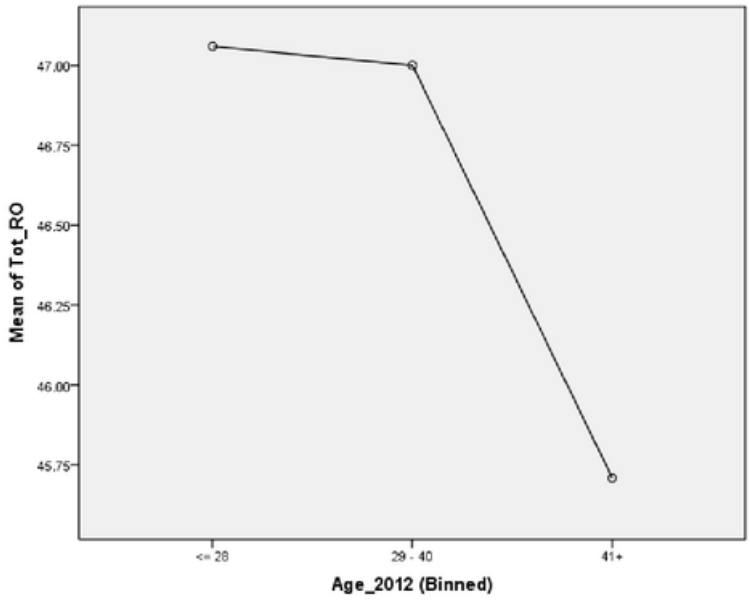
Age_2013 (Binned)	N	Subset for alpha = 0.05
		1
41+	24	45.71
29 - 40	24	47.00
<= 28	34	47.06
Sig.		.661

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 26.609.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

30-7 : Means Plots



31. Appendix 31: Oneway ANOVA (Age Group, Change-Oriented Total Score)

31-1 : Descriptives

Tot_CO

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
<= 28	34	53.79	7.539	1.293	51.16	56.42	35	64
29 - 40	24	52.83	6.793	1.387	49.96	55.70	38	65
41+	24	49.96	7.992	1.631	46.58	53.33	35	64
Total	82	52.39	7.552	.834	50.73	54.05	35	65

31-2 : Test of Homogeneity of Variances

Tot_CO

Levene Statistic	df1	df2	Sig.
.169	2	79	.845

31-3 : ANOVA

Tot_CO

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	213.662	2	106.831	1.916	.154
Within Groups	4405.850	79	55.770		
Total	4619.512	81			

31-4 : Robust Tests of Equality of Means

Tot_CO

	Statistic[a]	df1	df2	Sig.
Welch	1.720	2	49.631	.189
Brown-Forsythe	1.923	2	73.193	.153

a. Asymptotically F distributed.

31-5 : Post Hoc Tests

Multiple Comparisons

Tot_CO

Tukey HSD

(I) Age_2013 (Binned)	(J) Age_2013 (Binned)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
<= 28	29 - 40	.961	1.991	.880	-3.80	5.72
	41+	3.836	1.991	.138	-.92	8.59
29 - 40	<= 28	-.961	1.991	.880	-5.72	3.80

	41+	2.875	2.156	.381	-2.27	8.02
41+	<= 28	-3.836	1.991	.138	-8.59	.92
	29 - 40	-2.875	2.156	.381	-8.02	2.27

31-6 : Homogeneous Subsets

Tot_CO

Tukey HSD[a,b]

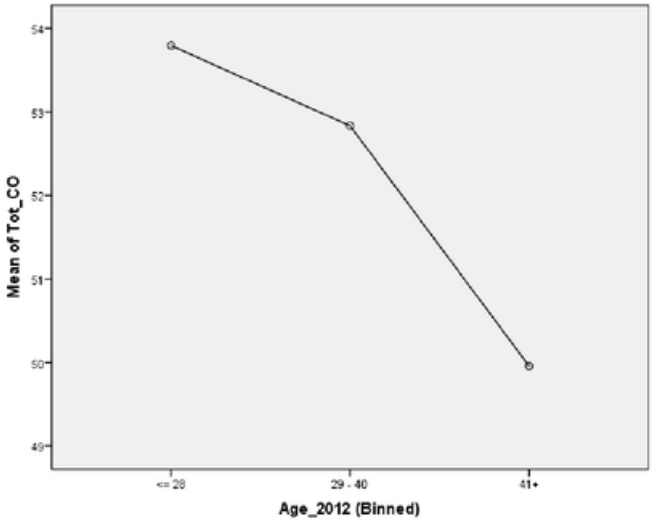
Age_2013 (Binned)	N	Subset for alpha = 0.05
		1
41+	24	49.96
29 - 40	24	52.83
<= 28	34	53.79
Sig.		.153

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 26.609.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

31-7 : Means Plots



32. Appendix 32: Univariate ANOVA (LMX High/Low, Task-Oriented Total Score)

11

32-1 : Between-Subjects Factors

		Value Label	N
Tot_LMX (Binned)	1	LOW	49
	2	HIGH	33

32-2 : Descriptive Statistics

Dependent Variable:Tot_TO

Tot_LMX (Binned)	Mean	Std. Deviation	N
LOW	37.86	4.830	49
HIGH	40.24	3.269	33
Total	38.82	4.409	82

3

32-3 : Levene's Test of Equality of Error Variances[a]

Dependent Variable:Tot_TO

F	df1	df2	Sig.
9.902	1	80	.002

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + LMX_Grp

1

32-4 : Tests of Between-Subjects Effects

Dependent Variable:Tot_TO

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	112.195[a]	1	112.195	6.139	.015	.071
Intercept	120280.000	1	120280.000	6581.396	.000	.988
LMX_Grp	112.195	1	112.195	6.139	.015	.071
Error	1462.061	80	18.276			
Total	125129.000	82				
Corrected Total	1574.256	81				

a. R Squared = .071 (Adjusted R Squared = .060)

33. Appendix 33: Univariate ANOVA (LMX High/Low, Relations-Oriented Total Score)

11

33-1 : Between-Subjects Factors

		Value Label	N
Tot_LMX (Binned)	1	LOW	49
	2	HIGH	33

33-2 : Descriptive Statistics

Dependent Variable:Tot_RO

Tot_LMX (Binned)	Mean	Std. Deviation	N
LOW	45.90	5.906	49
HIGH	47.76	5.075	33
Total	46.65	5.629	82

11

33-3 : Levene's Test of Equality of Error Variances[a]

Dependent Variable:Tot_RO

F	df1	df2	Sig.
.570	1	80	.452

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + LMX_Grp

18

33-4 : Tests of Between-Subjects Effects

Dependent Variable:Tot_RO

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	68.194[a]	1	68.194	2.183	.143	.027
Intercept	172966.925	1	172966.925	5538.153	.000	.986
LMX_Grp	68.194	1	68.194	2.183	.143	.027
Error	2498.550	80	31.232			
Total	180989.000	82				
Corrected Total	2566.744	81				

a. R Squared = .027 (Adjusted R Squared = .014)

34. Appendix 34: Univariate ANOVA (LMX High/Low, Change-Oriented Total Score)

11

34-1 : Between-Subjects Factors

		Value Label	N
Tot_LMX (Binned)	1	LOW	49
	2	HIGH	33

34-2 : Descriptive Statistics

Dependent Variable:Tot_CO

Tot_LMX (Binned)	Mean	Std. Deviation	N
LOW	50.78	7.822	49
HIGH	54.79	6.532	33
Total	52.39	7.552	82

3

34-3 : Levene's Test of Equality of Error Variances[a]

Dependent Variable:Tot_CO

F	df1	df2	Sig.
2.765	1	80	.100

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + LMX_Grp

1

34-4 : Tests of Between-Subjects Effects

Dependent Variable:Tot_CO

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	317.466[a]	1	317.466	5.904	.017	.069
Intercept	219746.930	1	219746.930	4086.371	.000	.981
LMX_Grp	317.466	1	317.466	5.904	.017	.069
Error	4302.046	80	53.776			
Total	229688.000	82				
Corrected Total	4619.512	81				

a. R Squared = .069 (Adjusted R Squared = .057)

35. Appendix 35: Univariate ANOVA (Gender, Age Group, Task-Oriented Total Score)

35-1 : Between-Subjects Factors

		Value Label	N
Gender	0	FEMALE	41
	1	MALE	41
Age_2013 (Binned)	1	<= 28	34
	2	29 - 40	24
	3	41+	24

35-2 : Descriptive Statistics

Dependent Variable:Tot_TO

Gender	Age_2013 (Binned)	Mean	Std. Deviation	N
FEMALE	<= 28	37.20	5.126	20
	29 - 40	37.63	3.962	8
	41+	37.54	4.521	13
	Total	37.39	4.625	41
MALE	<= 28	42.43	2.563	14
	29 - 40	39.69	3.628	16
	41+	38.27	3.927	11
	Total	40.24	3.713	41
Total	<= 28	39.35	4.954	34
	29 - 40	39.00	3.788	24
	41+	37.88	4.184	24
	Total	38.82	4.409	82

35-3 : Levene's Test of Equality of Error Variances[a]

Dependent Variable:Tot_TO

F	df1	df2	Sig.
2.656	5	76	.029

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Gender + Age_Group + Gender * Age_Group

35-4 : Tests of Between-Subjects Effects

Dependent Variable:Tot_TO

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	282.902[a]	5	56.580	3.330	.009	.180
Intercept	113628.515	1	113628.515	6687.376	.000	.989
Gender	135.091	1	135.091	7.951	.006	.095
Age_Group	52.352	2	26.176	1.541	.221	.039
Gender * Age_Group	76.175	2	38.087	2.242	.113	.056
Error	1291.354	76	16.991			
Total	125129.000	82				
Corrected Total	1574.256	81				

14

a. R Squared = .180 (Adjusted R Squared = .126)

35-5 : Post Hoc Tests

Age_2013 (Binned)

Multiple Comparisons

Tot_TO

Tukey HSD

31

(I) Age_2013 (Binned)	(J) Age_2013 (Binned)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
<= 28	29 - 40	.35	1.099	.945	-2.27	2.98
	41+	1.48	1.099	.375	-1.15	4.10
29 - 40	<= 28	-.35	1.099	.945	-2.98	2.27
	41+	1.13	1.190	.613	-1.72	3.97
41+	<= 28	-1.48	1.099	.375	-4.10	1.15
	29 - 40	-1.13	1.190	.613	-3.97	1.72

21

Based on observed means.

The error term is Mean Square(Error) = 16.991.

35-6 : Homogeneous Subsets

Tot_TO

Tukey HSD[a,b,c]

Age_2013 (Binned)	N	Subset 1
41+	24	37.88
29 - 40	24	39.00
<= 28	34	39.35
Sig.		.395

14

Means for groups in homogeneous subsets are displayed.

Based on observed means.

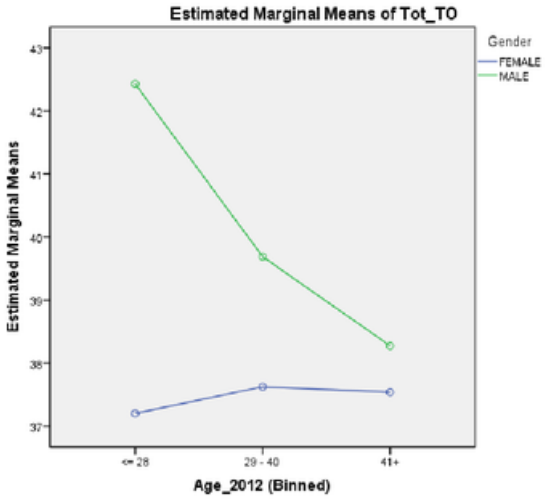
The error term is Mean Square(Error) = 16.991.

a. Uses Harmonic Mean Sample Size = 26.609.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

c. Alpha = .05.

35-7 : Profile Plots



36. Appendix 36: Chi-Square Test (LMX High/Low, Gender)

21

36-1 : Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Gender * Tot_LMX (Binned)	82	100.0%	0	.0%	82	100.0%

36-2 : Gender * Tot_LMX (Binned) Crosstabulation

			Tot_LMX (Binned)		
			LOW	HIGH	Total
Gender	FEMALE	Count	26	15	41
		% within Gender	63.4%	36.6%	100.0%
		% within Tot_LMX (Binned)	53.1%	45.5%	50.0%
		% of Total	31.7%	18.3%	50.0%
	MALE	Count	23	18	41
		% within Gender	56.1%	43.9%	100.0%
		% within Tot_LMX (Binned)	46.9%	54.5%	50.0%
		% of Total	28.0%	22.0%	50.0%
Total		Count	49	33	82
		% within Gender	59.8%	40.2%	100.0%
		% within Tot_LMX (Binned)	100.0%	100.0%	100.0%
		% of Total	59.8%	40.2%	100.0%

36-3 : Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.456[a]	1	.499		
Continuity Correction[b]	.203	1	.652		
Likelihood Ratio	.457	1	.499		
Fisher's Exact Test				.653	.326
Linear-by-Linear Association	.451	1	.502		
N of Valid Cases	82				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 16.50.

b. Computed only for a 2x2 table

36-4 : Symmetric Measures

		Value	Approx. Sig.
Nominal by Nominal	Phi	.075	.499
	Cramer's V	.075	.499
N of Valid Cases		82	

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