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An Examination of LMX: Accounting for Leadership Style, Performance, and Subordinate Gratitude

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**An Examination of LMX: Accounting for Leadership Style, Performance,
and Subordinate Gratitude**

by

Adam M. Smith

A Thesis

Submitted to the Graduate Faculty of

St. Cloud State University

in Partial Fulfillment of the Requirements

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Abstract

The current study used a controlled laboratory setting to examine how leadership style, gratitude (trait & state), and performance (high & low) affect how subordinates perceive Leader-Member-Exchange (LMX) quality, and additionally how these variables interact when predicting performance congruence. Participants were formed into groups led by a trained research assistant acting as the group leader. Following this, they were asked to work on a group task, complete a short writing assignment, and complete a sequence of surveys. Results found that both leadership style and trait gratitude were both significantly related to LMX ratings. However, state gratitude, performance, and all hypothesized interactions were found to be non-significant. Additional analyses suggest that LMX fully mediates the relationships between trait gratitude, leadership style, and performance congruence. Research conclusions and future directions are discussed.

Keywords: LMX, leadership, gratitude, performance, groups, subordinates

“My mission in life is not merely to survive, but to thrive; and to do so with some passion,
some compassion, some humor, and some style.”

-Maya Angelou

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Chapter 1: Introduction

Leaders within the working environment can have a profound effect on those that work under them, and their influence can enhance or impede the effectiveness of individuals and work-groups alike. Prior research that has examined Leader-Member Exchange Theory (LMX) sought to describe the interactions that occur between a leader and subordinates on the job and is derived from Social Exchange Theory, positing that leaders express differential treatment towards those that work for them (Graen & Uhl-Bien, 1995). This differential treatment causes subordinates to assimilate into either the in-group or out-group, depending on social exchanges with the supervisor. LMX is treated as a continuum that assesses the quality of the leader-member relationship from low to high.

Research has shown that this differential treatment can result in both positive and negative outcomes depending on the quality of exchanges (Henderson, Liden, Glibkowski, & Chaudry, 2009). Henderson et al. (2009) hypothesized a model describing negative relationships between LMX and subordinate turnover, and positive relationships with job satisfaction, performance, and organizational commitment behaviors. Additionally, several meta-analyses have shown significant positive relationships between LMX and outcomes such as OCBs ($\rho = .39$), job performance ratings ($\rho = .30$), objective performance ($d = .19$), organizational commitment ($\rho = .47$), overall job satisfaction ($\rho = .49$), role clarity ($d = .73$), and member competence ($d = .53$), as well as negative relationships with turnover intentions ($\rho = -.39$), role conflict ($\rho = -.33$), and role ambiguity ($\rho = -.42$) (Dulebohn, Bommer, Liden, Brouer, & Ferris, 2012; Gerstner & Day, 1997) (Tables 3 & 4).

Results also describe relationships between LMX and a variety of antecedents that influence relationship quality, including transformational leadership ($\rho = .73$), subordinate agreeableness ($\rho = .19$), positive affectivity ($\rho = .31$), and a negative relationship with leader assertiveness tactics ($\rho = -.12$) (Dulebohn et al., 2012). These relationships frame the importance for examining the connection between LMX and work-based antecedents and outcomes. The relationships presented are not exhaustive of the current literature. For a more comprehensive examination, reference Dulebohn et al. (2012), Gerstner and Day (1997), Henderson et al. (2009) and Ilies, Nahrgang, and Morgeson (2007).

The differential treatment expressed by leaders during leader-member exchanges can directly affect members in terms of equality perceptions. Members who perceive high variability in leader differentiation behavior experience lower job satisfaction and wellbeing, suggesting that the process of LMX as well as its outcomes have direct and indirect effects on subordinates (Hooper & Martin, 2008). Negative results can occur if subordinates perceive differential treatment by a supervisor throughout the work group. This also spurs the idea that LMX is not entirely a private interaction, but also entails open social occurrences that are apparent to the entire work group underneath a leader.

The purpose of the current study is to examine the effects of leadership style, leader performance, and gratitude on subordinate perceptions of LMX quality. Specifically, leadership style should be related to LMX quality, and this relationship may be moderated by dispositional and/or state gratitude, which will be defined shortly. Gratitude may also be directly related to LMX quality. Additionally, subordinates may align their performance closer to their leaders' when they experience high LMX quality. This study is meant to

provide both academic and business individuals with information on how leader behavior can have a profound effect on the perceptions of subordinates, and also how subordinate characteristics and actions further influence their perceptions of their leader.

Past researchers have argued that LMX is a unidimensional construct, consisting of a universal measure of the quality of leader-member relationships (Graen & Uhl-Bien, 1995; Liden & Maslyn, 1998; Scandura & Graen, 1984). This type of measurement would consider LMX quality to consist of one single facet. While others have suggested LMX is better explained through multidimensional examination, capturing the aspects of contribution, loyalty, affect, and trust (Dienesch & Liden, 1986). Both sides debate the strengths and weaknesses of each, but neither has emerged as a universally accepted method, and this dichotomous argument has led to an ongoing transformation of LMX theory throughout the past 40 years (Schriesheim, Castro, & Cogliser, 1999).

Another area highly critiqued within the theory regards the level of analysis of LMX relationships. The most common method of measurement captures the “vertical dyad linkage” (VDL), assessing the exchanges that occur and affect both the leader and subordinate (Dansereau, Graen, & Haga, 1975; Schriesheim et al., 1999). Ideally, research that assumes this dyadic theory of LMX must account for the appropriate level of analysis when hypothesizing and analyzing research conducted on LMX relationships (Gooty, Serban, Thomas, Gavin, & Yammarino, 2012). Essentially, researchers must explain specifically why they chose a particular measure and level of analysis and demonstrate how these align with the purpose of the research. Perceptions of both the leader and subordinate should both be

measured; however, this becomes difficult to assess when working in controlled environments such as laboratory studies.

The relationship that forms and develops LMX quality is an ongoing process that begins the moment a leader is placed over subordinates and continues until the work unit has separated. While most LMX research focuses on established leader-member relationships, it is also important to examine newly formed ones as well. A study by Kangas (2013) determined that there are four key elements that are crucial for the development of new leaders within a group, which include (a) subordinate expectations about leaders, (b) informal communication, (c) leader decision-making, and (d) work-related incidents. The initial meeting between leader and subordinate is crucial within LMX theory and the relationship is immediately influenced by initial interactions between the two (Dienesch & Liden, 1986; Kangas, 2013), suggesting that LMX begins the very moment leader and member are introduced.

Differential treatment from leaders can be manifested in many different ways, which has been accounted for by analyzing subdimensions within the theory of LMX, including leaders and members expressing sensitivity, trust, obligation, attention, and acceptance (Schriesheim et al., 1999). However, it is possible that broader leader behaviors determine whether members become part of the in-group or out-group. One broad leader behavior that could be considered would be that of leadership style. According to the theory of situational leadership, it is possible for leaders to change their style or approach to leadership depending on a variety of situations (Silverthorne & Wang, 2001). One example would be the type of feedback provided from the work environment, such as the behavior of subordinates in response to leadership tactics (DeRue & Wellman, 2009). Based on these findings, different

leadership styles may possibly be used on in-group and out-group subordinates, which in turn either increases or decreases LMX quality.

Autocratic vs Democratic Leadership

According to Luthar (1996), democratic and autocratic leadership styles are two of the most frequently employed forms of leadership in the workplace, and they also strongly affect subordinates within a work group. An example of democratic leadership would be where the leader includes the subordinate in the decision making process and allows them to provide input towards the final decision. On the other hand, autocratic leadership involves the leader making the final decision regardless of subordinate input, and the leader makes executive decisions without communication with the subordinate.

Other researchers have chosen to study this dichotomy due to their natural occurrence in work-groups and applicability to a large number of workplace settings (Gastil, 1994). Luthar (1996) found that subordinates rated democratic managers significantly higher on both performance and leadership abilities than autocratic managers. This effect may not always hold true depending on circumstances. Moderating variables such as gender, group size, work type, and social climates are just a few that influence how autocratic or democratic is perceived within the work unit (Foels, Driskell, Mullen, & Salas, 2000; Gastil, 1994). While there may be instances in the workplace where autocratic leadership is preferred over democratic, people in general tend to prefer leaders that include their subordinates in the work process and factor subordinate input into the decision-making process (Gastil, 1994; Luthar, 1996).

From an interpersonal standpoint, democratic leadership more often leads to healthy relationships between leaders and subordinates (Gastil, 1994). Based on these findings, it would be probable that democratic leadership would create quality exchanges between leader and subordinates since subordinate input appears to be valued and incorporated in the decision-making process. Autocratic leadership may produce the opposite effect, reducing the quality of leader-member exchanges. According to DeRue and Wellman (2009), leaders may change styles when working with different subordinates, suggesting that not all subordinates experience the same type of leadership within the same work unit.

Hypothesis 1: Democratic leadership will lead to higher subordinate ratings of LMX than Autocratic leadership.

Leader Performance

As stated previously, past research has found a relationship between LMX quality and subordinate performance (Dulebohn et al., 2012; Gerstner & Day, 1997). The current study takes place in an experimental setting where subordinate performance is highly influenced by the actions of the supervisor, where misguidance will be intentionally used—therefore, objective performance is not as important as relative subordinate agreement with the performance or behavior of the supervisor. Not every leader gives correct information or solves problems in the proper manner, and this will intentionally be the case during the experiment.

It would be naïve to assume that all leaders have the correct answer when attempting to accomplish a task or come up with a solution. The current study intends to determine if LMX quality affects whether subordinates accept a leader's choices, even when feedback

questions the performance or competence of the leader. Reasoning behind this comes from the idea that high LMX quality leads to subordinate commitment in the work unit (Le Blanc & González-Romá, 2012). When a subordinate experiences high commitment to their work unit, they are more likely to perform well, but this does not mean that they will support their leader if performance quality has been questioned.

Smith and Greenier (2014) analyzed the effects of leadership style and group size on LMX quality. Findings indicated that subordinates who experienced high LMX were more likely to agree with a leader's performance on a given task when feedback was not provided, $\eta^2 = .17$. Based on these findings, the current study intends to examine whether this is also true when high LMX is present but subordinates are aware of the leader's low performance. It is not clear whether subordinates will still agree with their leader's decisions after they are aware of his or her poor performance.

Hypothesis 2 deals with whether subordinates will perform in congruence with their leader under different circumstances. In theory, subordinates may decide to abandon a leader's proposed solution to a task if they are given an opportunity to do so, resulting in low congruence between the leader and subordinate's performance. If a leader performs poorly, the subordinate may change their task performance or continue with the leader's current solution, depending on the quality of their relationship. While there is no current research literature to support this, it is possible that LMX quality may have an interaction effect on the outcome between leader performance and performance congruence.

Hypothesis 2a: Subordinates will have higher performance congruence under high leader performance than under low leader performance

Hypothesis 2b: Subordinates who experience low leader performance will have higher performance congruence only when LMX quality is high (see Figure 1).

Hypothesis 3: Subordinates who experience low leader performance will rate LMX lower than those under high leader performance.

Gratitude

Social exchanges between leaders and subordinates on the job are the core of LMX theory, but how do subordinates' reactions to leadership affect their perceptions of LMX quality? Subordinate reactions and behavior to a leader help shape the LMX relationship (Schriesheim et al., 1999). One way subordinates can respond in exchanges with leaders is expressing gratitude toward leader efforts. While the effects of gratitude have not been specifically examined within LMX research, it has been mentioned as an inherent component of leader-member social exchanges (Blau, 1964; Graen & Uhl-Bien, 1995; Greguras, & Ford, 2006). Gratitude is part of the positive psychology movement and is considered a positive emotional expression (Fredrickson, 2001). While there are conflicting views on how gratitude is operationalized, gratitude can be thought of as either dispositional or state-based (Wood, Froh, & Geraghty, 2010). State-based describes gratitude that is based on specific circumstances and changes based on situational variables, whereas dispositional gratitude is a broader operationalization that is more stable throughout circumstances. Both types of gratitude will be accounted for in the present study.

Gratitude has been shown to be a useful coping mechanism in stressful situations (Folkman & Moskowitz, 2000). In relation to research focused on the workplace, gratitude has few sources evaluating its effects on work settings (Waters, 2012). Findings have included

relationships between gratitude and corporate social responsibility (Andersson, Giacalone, & Jurkiewicz, 2007), job satisfaction (Lanham, Rye, Rinsky, & Weill, 2012), and an inverse relationship between trait gratitude and workplace burnout (Chan, 2010; Lanham et al., 2012). Because of these positive benefits, gratitude may play an important role in explaining LMX relationships.

Hypothesis 4a: In general, subordinates with higher dispositional gratitude will have higher ratings of LMX

Hypothesis 4b: When under Autocratic leadership, subordinates who express state gratitude will rate higher LMX than those who do not (see Figure 2).

Hypothesis 4c: When under poor performance leadership, subordinates who express state gratitude will rate higher LMX than those who do not (see Figure 3).

Chapter 2: Method

Participants

Participants were recruited from a public university in the Midwest and were given extra-credit opportunity for their participation. The sample was comprised of 9% males and 91% females with a total sample size of 54. The average age of participants was 21.

Participants were recruited from psychology and business courses within the university.

Procedure

Participants were scheduled to participate in a study examining how people complete tasks that involve group problem-solving skills. Each session included 1-5 participants working with a trained supervisor. To the subordinates' knowledge, the supervisor had never seen the current task that was presented to the group. Participants were given an informed consent paper to read and sign. The researcher then introduced the leader to the subordinates and then instructed them to complete the Lost at Sea worksheet under the direction of the leader. This task presents an emergency situation where individuals must select items from a wrecked ship that are of most importance. They were then left alone and the leader told the subordinates to read the instructions to the assignment. After this, the leader suggested that the subordinates work together to come up with their collective top five items. The leader then pretended to work on the task alone.

After subordinates and leader made their ratings, the leader continued with either autocratic or democratic leadership styles. Under democratic leadership, the leader asked for the top five items, ask for the subordinates' reasoning and thought process, rejected three of the items, and then provide reasoning for why they should choose different options. Under

autocratic leadership, the leader asked for the top five items, reject three of them, and stated which three will be used instead. Other than this, all subordinates were treated equally by the leader in order to avoid confounding behavior.

In terms of leader performance, the group leader replaced the three rejected items according to the experimental conditions. For high performance, the leader rejected the three lowest answers from the team and replaced them with the highest possible answers, increasing the performance of the team. Under low performance, the leader rejected the three highest answers from the team and replaced them with the lowest possible answers, therefore lowering the performance of the team.

Once this interaction occurred, the leader brought the task results back to the researcher who then returned alone to provide feedback to the groups without the leader being present. The high performance leadership group was given positive feedback and was told that the groups' performance was higher than most other scores. The low performance leadership group was given negative feedback and was told that their scores were lower than most other groups.

The researcher then handed out the trait gratitude measure, a writing assignment (state gratitude), LMX measure, and a demographic survey. The writing assignment and gratitude measure were alternated to control for order effects; however, the LMX measure was always administered after the writing assignment. This guaranteed that subordinates experienced state gratitude before rating their LMX perceptions. Finally, the participants were given a demographic questionnaire and were debriefed about the actual purpose of the experiment.

Leader Training

It was important that the leader demonstrated equal treatment toward each research participant outside of behavior specified by the experiment. In order to increase the consistency of the leaders' behavior, he rehearsed and memorized scripts to use when interacting with the subordinates. These were practiced in front of the researcher to ensure that neutral affect is expressed when using autocratic and democratic leadership styles. This training was meant to reduce the leader using positive affective behavior when leading democratically or using negative affective behavior when leading autocratically.

In addition to this, the experiment was pilot tested on two different groups of graduate students within the psychology department. Each group acted as participants and completed the study to gauge the time a session would take to complete and to give the researcher the opportunity to observe the leader behavior. The graduate students then gave feedback about the experience and gave suggestions for improving the session. From these suggestions a few changes were made to improve the quality of the sessions, including adding a 15 minute timer to keep the group focused and on task.

Measures

LMX. For the purposes of this study, the most suitable measure was the LMX-7 (Graen & Uhl-Bien, 1995). It consisted of seven items that ask a leader and/or member to rate their perceptions of each other. Each item was rated on a Likert scale of 1-5, with 5 always being the most favorable answer. All scores were then summed to create an aggregate score that results in that individual's total LMX score. This measure can be evaluated in terms of group ratings, dyad ratings (aggregate of both the leader and subordinate), and individual

ratings. Since the current study only intended to capture the subordinate ratings, the measure was suitable for this purpose. The LMX-7 measure is located in Appendix A.

In terms of dimensionality, Graen and Uhl-Bien (1995) state that LMX-7 captures the 3 dimensions of respect, trust, and obligation. However, these dimensions are highly correlated, with a reported Cronbach's Alpha of .80, suggesting high internal consistency for all seven items. For this reason, Graen and Uhl-Bien characterize LMX-7 as a unidimensional measure. This is also relevant to the nature of this study, since the leader-member relationship is novel, and has not had time to exchange social interactions that develop complex relationships captured by multidimensional measures (Liden & Maslyn, 1998).

Trait/dispositional gratitude. In order to assess each participant's dispositional gratitude, the unidimensional measure "Gratitude Questionnaire" (GQ-6) was used (McCullough, Emmons, & Tsang, 2002). The six items that make up the measure have strong loadings on one factor and assess unique variance within the gratefulness construct, with a reported alpha of .82. Discriminant validity was also demonstrated between gratitude and the constructs of life satisfaction, subjective happiness, optimism, and hope. In addition, the measure was cross-validated with the Big-Five measure of personality. While gratitude seems to be related to other affective constructs, GQ-6 has been shown to explain a significant amount of unique variance within the construct of gratitude. The GQ-6 instrument can be found in Appendix B.

State gratitude. In order to manipulate the expression of gratitude, participants were instructed to write for 3 minutes about either their daily routine, or write about things they were grateful for regarding their leader during the experiment. By writing about expressing

gratitude towards the leader, this served as the “state gratitude.” While it is not a measure of gratitude, it is meant to cause participants to experience a heightened sense of gratitude for a brief period. The control writing assignment is not meant to affect the participant in any, but simply make them experience the same experimental sequence as the others. These writing prompts can be found in Appendix F.

Lost at Sea task (LAS). In order to present a task for the leader and groups to work on, the Lost at Sea task was used. This task requires individuals to work together to rank the importance of what items would be most useful in an emergency situation (Nemiroff & Pasmore, 2001). A scenario is presented in which a boat is sinking somewhere in the South Pacific Ocean and there are a total of 15 items that must be ranked by importance. Survivors of the boat incident include the group, leader, and a few crew members from the ship. The task was developed in conjunction with a group of survivalists who decided the answer to the task in terms of realistic survival techniques.

The LAS was slightly modified for the current study. Instead of ranking all 15 items, the group was instructed to pick the top five items that would be most important for their survival. This was done to give the participants enough time to complete the task and also allowed the leader to have clear choice to either reject or accept. Performance scores could be easily measured using the answer key provided by the creators of the task. Both the task sheet and answering key are provided in Appendix C and D.

Congruence. After groups worked together to complete the LAS task, their group leader determined the answers that would be presented to the researcher. After this occurred, each individual participant had the opportunity to indicate their top five choice on the LAS

task. The congruence measure was calculated by measuring the absolute difference between the leaders score on the task and the individuals score. If a congruence score is high, it means there is a greater distance between the two scores, indicating low congruence. Conversely, low difference scores indicate a smaller distance between scores, indicating high performance congruence.

Demographics. Each participant received a demographic questionnaire asking each to report their gender, age, and school classification. Also, to make sure other variables were not influencing the results of the study, participants were asked whether they recognized the leader or researcher, and whether they like to work alone, in groups, or do not have a preference. The demographic survey can be found in Appendix E.

Analyses

For hypotheses 1, 2a, and 3, simple regressions were run to determine if there are mean differences between the variables in each. All categorical variables were dummy coded and then entered into the regression. For hypothesis 4a, a simple regression was used to determine the relationship between gratitude and LMX. Regarding hypotheses 2b, 4b, and 4c, multiple regressions was used. Each main effect was entered in the first step, with the dummy coded interaction term entered on the second.

Chapter 3: Results

Demographics/Controls

The original statistical methods proposed in this paper intended to control for a variety of factors when running regression analyses. However, due to the small sample size in the current study, this was no longer appropriate. The variables of group size and gender included unequal distributions across conditions, meaning they would result in inappropriate conclusions if entered in analyses. To further explain, not all conditions were experienced by males or by certain group sizes, causing a large amount of missing representation in each respective group.

Additionally, age was not correlated with any variables within the dataset, including LMX ($r = .11, p = .422$), trait gratitude ($r = .12, p = .390$), or congruence ($r = .04, p = .792$). Likewise, school classification and preference for working in groups were not found to be significantly related to any variables. No participants indicated that they recognized the leader. For these reasons, no demographic variables were used as controls in the proceeding analyses.

Measures

Given that the LMX-7 measure used in this experiment was intended for examining more mature relationships, Cronbach's alpha was obtained to determine if this measure maintained internal consistency in the laboratory setting. A scale analysis reported an acceptable alpha coefficient, $\alpha = .86$. Corrected item-total correlations ranged from .26 to .73, with 5 items at or above .65.

An additional scale analysis was run on the Gratitude Questionnaire-6 to determine its internal consistency, also resulting in a slightly lower than acceptable alpha coefficient, $\alpha = .63$. Corrected item-total correlations ranged from .26 to .48, with 5 items above .37. It should be noted that after reviewing individuals' responses, it appears that participants did not read the questions carefully and misinterpreted the reversed scored item 6 "Long amounts of time can go by before I feel grateful to something or someone." Many individuals rated a high score on this along with the positively worded items, suggesting they did not read it carefully. Indicating a high score on this item translates to a low score of gratitude. When this item is removed from the measure, the alpha coefficient increases to .68. However, this item was retained for all analyses. A correlation between all experimental variables is provided in Table 1.

Hypothesis 1

A simple regression was run to determine if leadership style has an effect on LMX ratings. Results revealed that those who experienced the democratic condition ($M = 22.15$, $SD = 4.29$) were significantly different from those under autocratic leadership ($M = 17.15$, $SD = 6.01$), such that democratic leadership leads to higher LMX ratings, $\beta = -.44$, $t(52) = -3.52$, $p = .001$. Leadership style accounted for 19% of the variance in LMX ratings, $R^2 = .19$, $F(1,52) = 12.39$, $p = .001$, indicating strong support for hypothesis 1.

Hypothesis 2a

A simple regression was used to examine the relationship between performance feedback and congruence between leader and subordinate answers. The results indicated a

non-significant effect for performance feedback between the high ($M = 11.32$, $SD = 8.86$) and low ($M = 10.62$, $SD = 8.14$) conditions, $\beta = -.04$, $t(52) = -.30$, $p = .762$.

Hypothesis 2b

A hierarchical regression was run to determine the moderation effect of LMX ratings on performance feedback when predicting leader-subordinate congruence. In the first step, congruence was regressed on performance feedback, indicating a non-significant result, $R^2 = .002$, $F(1,52) = .09$, $p = .762$. The moderating variable, LMX ratings, was entered on the second step, resulting in a significant amount of variance explained, $R^2\Delta = .60$, $F\Delta(1,51) = 76.02$, $p = .000$. In the third step, the interaction term was entered into the regression, which did not explain a significant amount of variance beyond the previous steps, $R^2\Delta = .01$, $F\Delta(1,50) = 1.05$, $p = .310$. The interaction term was also non-significant when present with feedback and LMX predictors, $\beta = -.37$, $t(50) = -1.03$, $p = .310$. Hypothesis 2b was not supported.

Hypothesis 3

LMX ratings were regressed on performance feedback using a simple regression to test the relationship between the two. Results indicated a non-significant relationship, $R^2 = .002$, $F(1,52) = .10$, $p = .749$. Giving feedback on high versus low performance did not significantly affect subsequent LMX quality ratings, providing no support for hypothesis 3.

Hypothesis 4a

A simple regression was used to determine the relationship between LMX ratings and trait gratitude. The analysis reported a significant relationship, $\beta = .30$, $t(52) = 2.24$, $p = .029$.

Trait gratitude explained approximately 9% of the variance in LMX ratings, $R^2 = .09$, $F(1,52) = 5.02$, $p = .029$. These results provide support for hypothesis 4a.

Hypothesis 4b

A hierarchical multiple regression was used to determine the moderation effect of state gratitude on leadership style when predicting LMX quality. In the first step, LMX was regressed on leader style, indicating a significant result, $R^2 = .44$, $F(1,52) = 12.39$, $p = .001$. State gratitude was then entered on the second step, resulting in a non-significant amount of variance explained above and beyond leadership style, $R^2\Delta = .01$, $F\Delta(1,51) = .90$, $p = .349$. In the third step, the interaction term was entered into the regression, which did not explain a significant amount of variance beyond the previous steps, $R^2\Delta = .004$, $F\Delta(1,50) = .27$, $p = .607$. The interaction term was also non-significant when present with leader style and state gratitude predictors, $\beta = .11$, $t(50) = .52$, $p = .607$. Hypothesis 4b was not supported.

Hypothesis 4c

Similar to hypothesis 4b, a hierarchical multiple regression was used to determine the moderation effect of state gratitude on performance feedback when predicting LMX quality. In the first step, LMX was regressed on performance feedback, indicating a non-significant result, $R^2 = .002$, $F(1,52) = .10$, $p = .749$. State gratitude was then entered on the second step, resulting in a non-significant amount of variance explained, $R^2\Delta = .02$, $F\Delta(1,51) = .40$, $p = .671$. In the third step, the interaction term was entered into the regression, which did not explain a significant amount of variance beyond the previous steps, $R^2\Delta = .02$, $F\Delta(1,50) = .28$, $p = .842$. The interaction term was also non-significant when present with performance

feedback and state gratitude predictors, $\beta = -.05$, $t(50) = .52$, $p = .839$. Therefore hypothesis 4c was not supported.

Additional Analyses

Due to the large amount of non-significant findings, additional analyses were run to determine relationships that may exist outside of the hypothesized results. Namely, the relationship between LMX and performance congruence, since a high correlation between the two was evident when testing hypothesis 2b.

A simple regression was run to assess the relationship between performance congruence and LMX quality, where congruence was regressed onto LMX quality, resulting in a significant relationship, $R^2 = .60$, $F(1,52) = 75.97$, $p = .000$. Due to this strong correlation between the two, a subsequent hierarchical multiple regression was run to determine if LMX quality predicts variance above and beyond state gratitude, trait gratitude, performance feedback, and leadership style when regressed on congruence scores.

Both state and trait gratitude measures were entered into the first step, resulting in non-significant effect, $R^2 = .01$, $F(1,51) = 1.17$, $p = .317$. Performance feedback was then entered in the second step, also resulting in a non-significant effect, $R^2\Delta = .01$, $F\Delta(1,50) = .49$, $p = .488$. In the third step, leadership style was entered, indicating a significant change, $R^2\Delta = .19$, $F\Delta(1,49) = 12.27$, $p = .001$. In this step, regression coefficients for trait gratitude ($\beta = -.262$, $t(49) = -2.04$, $p = .047$) and leadership style ($\beta = .437$, $t(49) = 3.51$, $p = .001$) were both significant. For the final step, LMX ratings were entered into the regression, indicating a significant change, $R^2\Delta = .37$, $F\Delta(1,48) = 44.76$, $p = .000$. LMX ratings' regression coefficient was found to be significant, $\beta = -.73$, $t(48) = -6.69$, $p = .000$. However, both trait

gratitude ($\beta = -.09, p = .932$) and leadership style ($\beta = .94, p = .353$) regression coefficients became non-significant when LMX ratings were entered (Table 2). This may indicate a full mediation of LMX between both trait gratitude and leadership style and performance congruence.

Chapter 4: Discussion

Non-significant findings from the current study should be interpreted carefully due to the low sample size and insufficient power to detect effects from regression analyses.

Conversely, relationships that were found to be significant given these conditions attests to their strong effects. Of the a priori hypotheses, two relationships were found to be significant.

Support for hypothesis 1 was found, indicating a significant relationship between leadership style and LMX ratings. In line with the proposed theory, subordinates often prefer democratic leadership and perceive it to be more favorable than autocratic (Luthar, 1996). In the current study, individuals were more likely to have higher LMX quality when subjected to the democratic treatment condition. This experience of increased communication and information exchange seems to foster subordinates' perceptions of having a quality relationship with the leader when they are included in the decision-making process. Additionally, it is possible that this leadership style could potentially influence whether subordinates become part of the in-group as the leader-member relationship develops over time, resulting from subordinates perceiving high LMX quality. Supervisors who engage in positive leadership exchanges with subordinates may be more likely to receive reciprocal exchanges from subordinates.

These results could help influence how leaders in the workplace can alter their leadership style in order to increase positive perceptions from their subordinates. Making executive decisions without subordinate input and failure to communicate and elicit information from employees while working on projects may reduce a leader's chances of developing high quality LMX relationships.

Consistent with hypothesis 4a, trait gratitude was also significantly related to LMX ratings. Higher scores on gratitude were associated with higher LMX ratings, indicating that the more grateful you are in general, the more likely you will perceive a quality relationship between yourself and your leader. The relatively moderate correlation ($r = .30$) indicates that gratitude does play a significant role in how individuals perceive the LMX relationship. Given that gratitude has been mentioned within the LMX literature, but never examined empirically in this context, this suggests further investigation is needed in order to explain the relationship. Grateful individuals may be able recognize the efforts of the leader and perceive interactions more positively, even under differing leadership styles.

In regards to the performance manipulation, regardless of condition, participants changed their answers approximately the same amount. A reason for this could be that they simply wanted to return to their original answers or change answers to match their group members instead of the leader. Another reason for this could be participants being resistant to change. According to Ford, Ford, and D'Amelio (2008), workers are more likely to resist change when they do not have developed relationships with leaders and when decisions do not make sense to individuals. Both of these may be evident in the present study and may explain why the majority of individuals decided to change their answers, regardless of condition.

None of the hypothesized interaction effects were significant. However, given the strong main effects between leadership style, gratitude, and LMX, and the additional relationship between LMX and congruence, additional analyses were run to develop alternative explanations. Upon further investigation a potential mediation was observed, such

that LMX ratings fully mediated the relationships between trait gratitude and leadership style with performance congruence. This was evident since both gratitude and leadership style's significant beta weights (when predicting performance congruence) became non-significant when LMX was entered into the regression (see Figure 4). This mediation is further supported since both trait gratitude and leadership style are significantly related to LMX ratings individually. This mediation effect may explain why hypothesized interactions were not significant. To further test this mediation, a Structural Educational Modeling (SEM) path analysis would be useful in observing these variables in a comprehensive model. To see regression steps, see Table 1.

Limitations and Future Research Directions

There are several limitations to this study that should be noted. The first, and arguably most important was the low sample size ($N = 54$). The target sample size of 120 was not possible due to a low number of students signing up for the study. Several avenues were pursued to increase participants, including the use of a research participant tracking system and manual recruitment by word of mouth and email from both psychology and business classes within the university. Of the participants that did sign up, only 73% actually participated, while 27% did not show up for their assigned timeslots.

The preferred method of analysis within LMX is that of the dyadic relationship between leader and subordinate. However, this study only measured the perceptions of the subordinates. This was not used as the level of analyses since the leader was a trained confederate, behaving in prescribed ways to affect the subordinates under him. For this reason, dyadic measurement would not have been appropriate. To date, there have been no

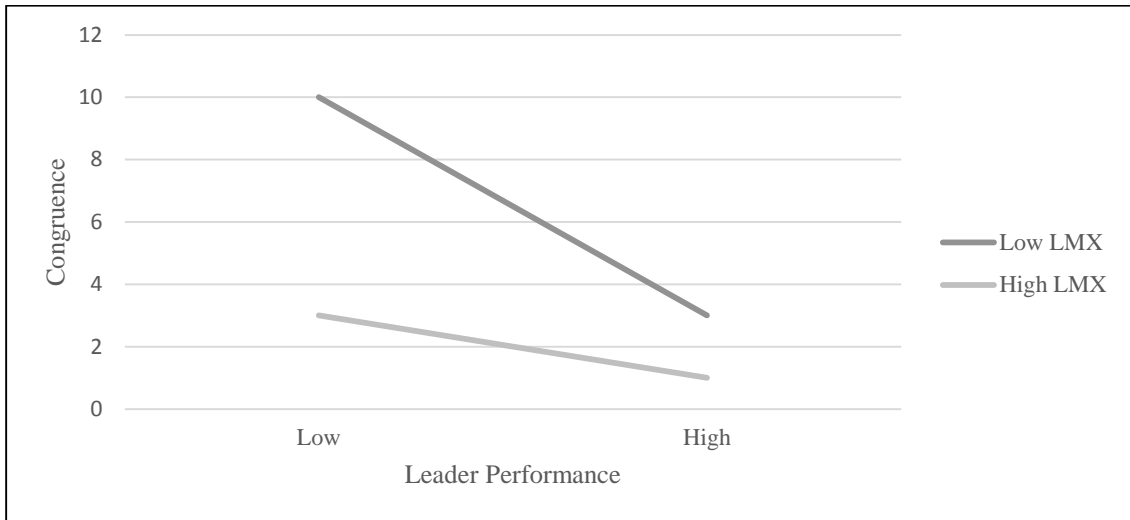
experimental studies that have used dyadic measurement, this would be a useful topic for future research if the methodology allows for it.

Another limitation involves the use of a male leader and also having a male researcher running the experimental sessions. These findings could possibly be influenced when using a leader that is female, as this may affect how subordinates respond to leadership style and develop LMX relationships. The sample also consisted of primarily females, which limits the generalizability of these findings. Future studies would benefit in evaluating how LMX relationships form and develop depending on the gender of leaders and subordinates.

For the manipulation of state gratitude, individuals were required to write for 3 minutes about aspects of their group leader they were grateful for, while the control group wrote about their morning routine. This measure did not produce significant results with any of the study variables. One reason for this is that the participants did not take the writing assignment seriously or did not truly feel grateful to the group leader. Another explanation may be that gratitude takes time to manifest, which in this case it may not have had enough time to affect the subordinates' perceptions of the leader. Future studies could determine the effects of state gratitude on more mature relationships within an applied setting.

For future directions, a stronger manipulation of state gratitude may be to allow the group to openly discuss their gratefulness about the leader and then express this gratitude verbally to him after the discussion. This may increase participants' actual feelings of gratitude rather than simply listing a few comments on paper, and direct communication may force participants to take it more seriously.

In summary, based on the findings of this study we can suggest that leadership style and trait gratitude each have significant relationships with LMX, even in newly formed groups. This is highly relevant for evaluating newly formed teams and explaining how the LMX process begins and is affected during initial social interactions within the workplace. Additionally, LMX was shown to be predictive of performance congruence and might also fully mediate the relationships between trait gratitude, leadership style, and congruence. While the current sample size does not allow for it, using SEM analysis would help to better explain these relationships within an integrated model. Further research should attempt to expand experimental methodology within the field to increase the control of variables related to LMX.



Note: Lower scores indicate higher performance congruence

Figure 1: Hypothesis 2b

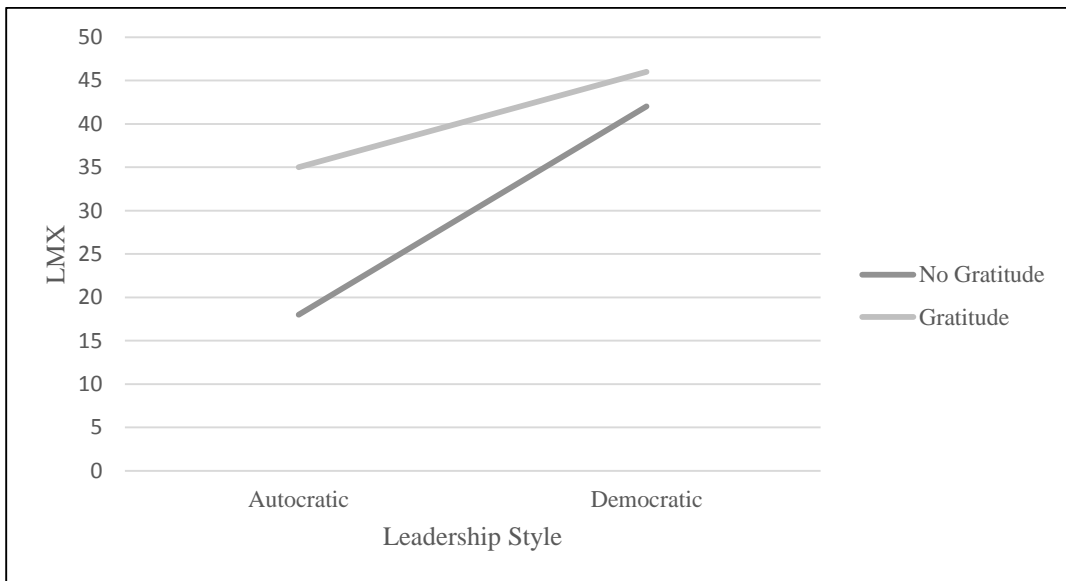


Figure 2: Hypothesis 4b

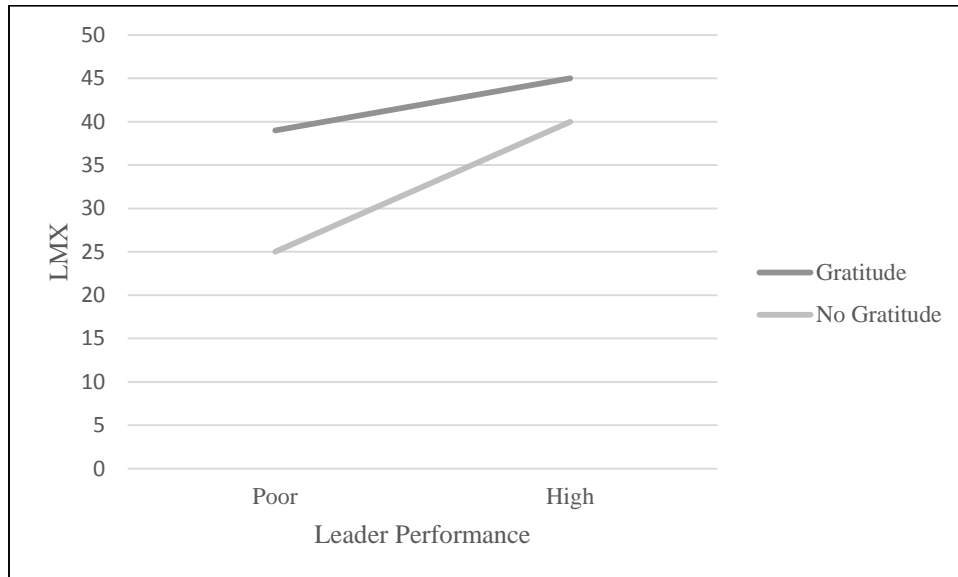
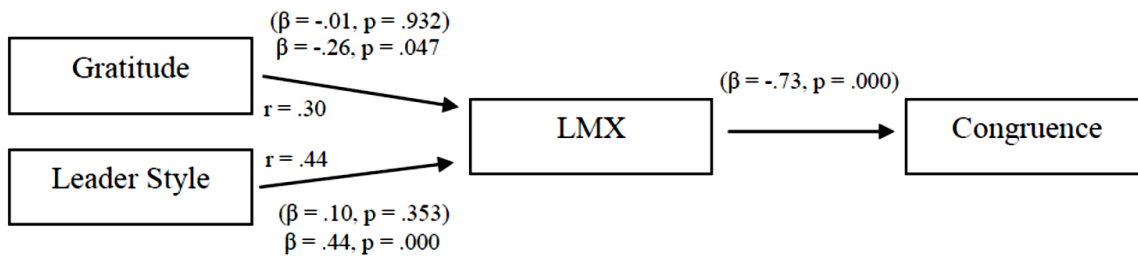


Figure 3: Hypothesis 4c



Note: Beta-weight and significance values represent effect of gratitude and style on congruence. Values in parenthesis indicate beta-weight and significance after LMX was entered into the regression. Pearson correlations (r) indicate simple regression relationships between individual predictors and LMX.

Figure 4: Full Mediation Model

Table 1: Correlations between Research Variables

Variables	Mean	SD	1	2	3	4	5
1. Leader Style	-	-					
2. Performance	-	-	.00				
3. State Gratitude	-	-	.00	-.04			
4. Trait Gratitude	6.15	.56	.07	-.24	-.04		
5. LMX	19.65	5.75	-.44**	-.05	.12	.30*	
6. Congruence	10.98	8.45	.42**	-.04	-.05	-.20	-.77**

Note: * $p < .05$, ** $p < .01$. Lower scores on Congruence are associated with higher agreement between subordinate and leader. Leader Style, Performance condition, and State Gratitude were all dichotomous categorical variables, therefore means and standard deviations were not appropriate.

Table 2: Additional Analysis

Predictor	Congruence		
	β	R^2	ΔR^2
Step 1		0.044	
Trait Gratitude	-0.205		
State Gratitude	-0.055		
Step 2		0.053	0.009
Trait Gratitude	-0.229		
State Gratitude	-0.06		
Performance	-0.099		
Step 3		0.243**	.010**
Trait Gratitude	-0.262*		
State Gratitude	-0.061		
Performance	-0.107		
Leadership Style	.437**		
Step 4		.608**	.365**
Trait Gratitude	-0.009		
State Gratitude	0.037		
Performance	-0.075		
Leadership Style	0.097		
LMX	-0.733**		

Note: N=54; * $p < .05$, ** $p < .001$

Table 3: Meta-Analyses Findings on Consequences of LMX

Variable	<i>k</i>	<i>N</i>	<i>r</i>	ρ/d	<i>SD</i>	<i>Q</i>
Overall OCB	27	7,541	.34	.39	.16	200.11***
Job Performance	108	25,322	.30	.34	.19	892.84***
Objective Performance	8	982	.10	.19	-	-
Organizational Commitment	58	14,208	.41	.47	.15	345.19***
Overall Job Satisfaction	88	22,520	.42	.49	.16	679.31***
Role Clarity	14	4,105	.26	.73*	-	-
Member Competence	15	3,880	.26	.53*	-	-
Turnover Intentions	8	1,074	-.28	-.58*	-	-
Role Conflict	14	5,480	-.27	-.33	.09	39.10***
Role Ambiguity	18	5,813	-.34	-.42	.11	61.88***

Note: *** $p < .001$.

Table 4: Meta-Analyses Findings on Antecedents of LMX

Variable	<i>k</i>	<i>N</i>	<i>r</i>	ρ/d	<i>SD</i>	<i>Q</i>
Transformational Leadership	20	5,451	.66	.73	.19	447.81***
Leader Extraversion	4	859	.16	.18	.14	16.06**
Positive Affectivity	12	2,482	.28	.31	.12	35.48***
Leader Assertiveness Tactics	8	1,638	-.10	-.12	.19	40.65***

Note: ** $p < .01$, *** $p < .001$.

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Appendix A: LMX 7 Measure

1. Do you know where you stand with your leader...do you usually know how satisfied your leader is with what you do?

Rarely Occasionally Sometimes Fairly Often Very Often

2. How well does your leader understand your problems and needs?

Not a bit A little A fair amount Quite a bit A great deal

3. How well does your leader understand your potential?

Not at all A little Moderately Mostly Fully

4. Regardless of how much formal authority he has built into his position, what are the chances that your leader would use his power to help you solve problems in your work?

None Small Moderate High Very high

5. Again, regardless of how much formal authority your leader has, what are the chances that he would “bail you out,” at his expense?

None Small Moderate High Very high

6. I have enough confidence in my leader that I would defend and justify his decision if he were not present to do so.

Strongly Disagree Disagree Neutral Agree Strongly Agree

7. How would you characterize your working relationship with your leader?

Extremely Ineffective Worse than average Average Better than average Extremely effective

Note: Adapted from Graen & Uhl-Bien, 1995.

Appendix B: The Gratitude Questionnaire–6 (GQ-6)

Using the scale below as a guide, write a number beside each statement to indicate how much you agree with it.

1 = strongly disagree

2 = disagree

3 = slightly disagree

4 = neutral

5 = slightly agree

6 = agree

7 = strongly agree

___ 1. I have so much in life to be thankful for.

___ 2. If I had to list everything that I felt grateful for, it would be a very long list.

___ 3. When I look at the world, I don't see much to be grateful for. (R)

___ 4. I am grateful to a wide variety of people.

___ 5. As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history.

___ 6. Long amounts of time can go by before I feel grateful to something or someone. (R)

Note: Adapted from McCullough, Emmons, & Tsang, 2002.

Appendix C: Lost At Sea Worksheet

Instructions:

You are adrift on a private yacht in the South Pacific. As a consequence of a fire of unknown origin, much of the yacht and its contents have been destroyed. The yacht is now slowly sinking. Your location is unclear because of the destruction of critical navigational equipment and because you and the crew were distracted trying to bring the fire under control. Your best estimate is that you are approximately one thousand miles south-southwest of the nearest land.

Below is a list of fifteen items that are intact and undamaged after the fire. In addition to these articles, you have a serviceable, rubber life raft with oars large enough to carry yourself, the crew, and all the items listed below. The total contents of all survivors' pockets are a package of cigarettes, several books of matches, and five one-dollar bills.

Your task is to identify the top 5 items in terms of their importance to your survival.

<i>Individual Rank</i>	<i>Item</i>	<i>Group Rank</i>	<i>Expert Rank</i>
_____	Sextant	_____	_____
_____	Shaving Mirror	_____	_____
_____	5 Gal can of Water	_____	_____
_____	Mosquito netting	_____	_____
_____	One case of US Army C rations	_____	_____
_____	Maps of the Pacific Ocean	_____	_____
_____	Seat cushion (floatation device)	_____	_____
_____	2 gal can of oil-gas mixture	_____	_____
_____	Small transistor radio	_____	_____
_____	Shark repellent	_____	_____
_____	20 square feet of opaque plastic	_____	_____
_____	1 qt of 160-proof Puerto Rican rum	_____	_____
_____	15 feet of nylon rope	_____	_____
_____	Two boxes of chocolate bars	_____	_____
_____	Fishing kit	_____	_____

Note: Adapted from Nemiroff & Pasmore, 2001.

Appendix D: Lost at Sea Answers

1. Shaving mirror = 15 points
 - a. Critical for signaling air-rescue.
2. Two-gallon can of oil-gas mixture = 14 points
 - a. Critical for signaling—the oil-gas mixture will float on the water and could be ignited with a dollar bill and a match (obviously, outside the raft).
3. Five-Gallon can of water = 13 points
 - a. Necessary to replenish loss from perspiring, etc.
4. One case of U.S. Army C rations = 12 points
 - a. Provide basic food intake.
5. Twenty square feet of opaque plastic = 11 points
 - a. Utilized to collect rain water, provide shelter from the elements.
6. Two boxes of chocolate bars = 10 points
 - a. A reserve food supply
7. Fishing kit = 9 points
 - a. Ranked lower than the chocolate bars because “one bird in the hand is worth two in the bush”. There is no assurance that you will catch any fish.
8. Fifteen feet of nylon rope = 8 points
 - a. May be used to lash equipment together to prevent it from falling overboard.
9. Floating seat cushion = 7 points
 - a. If someone fell overboard, it could function as a life preserver.
10. Shark repellent = 6 points
 - a. Obvious.
11. One quart of 160-proof Puerto Rican rum = 5 points
 - a. Contains 80 percent alcohol—enough to us a s potential anti-septic for any injuries incurred; of little value otherwise; will cause dehydration if ingested.
12. Small transistor radio = 4 points
 - a. Of little value because there is no transmitter (unfortunately, you are out of range of your favorite radio stations).
13. Maps of the Pacific Ocean = 3 points
 - a. Worthless without additional navigational equipment—it does not really matter where you are but where the rescuers are.
14. Mosquito netting 2 points
 - a. There are no mosquitos in the mid-Pacific ocean,
15. Sextant = 1 point
 - a. Without tables and a chronometer, relatively useless.

Note: Adapted from Nemiroff & Pasmore, 2001.

Appendix E: Demographic Questionnaire

1. What is your age? _____

2. What is your classification? (Circle one)

Freshman Sophomore Junior Senior

3. What is your gender?

Male Female

5. Did you know or recognize your task leader?

Yes No

If yes, how do you know them?

6. In general, do you prefer to work on assignments alone or as part of a group?

Alone Group No preference

