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THE MEDIATING ROLE OF LEADER-MEMBER EXCHANGE:
LEADER PERSONALITY AND INFORMATION SHARING

by

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B.A. Florida International University, 2016

A thesis submitted in fulfillment of the requirements
for the degree of Master of Science in Industrial/Organizational Psychology
in the Department of Psychology
in the College of Sciences
at the University of Central Florida
Orlando, Florida

Fall Term
2020

Major Professor: Steve Jex

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ABSTRACT

This study investigated the mechanisms that facilitate information sharing, specifically, how leader personality may affect leader-employee relationship quality and employee information sharing behavior. Those who share information with their leaders and coworkers contribute more to their team and improve performance on an individual, team, and organizational level (Wang & Noe, 2010). This research examines the relationships between leader personality, employee perceived leader-member exchange quality, and employee information sharing. Responses ($n = 81$) from undergraduate students who work at least 20 hours a week were used in study analyses. Surveys used to collect data for this study covered employee perception of supervisor personality, leader-member exchange, and information sharing with supervisors. Findings showed that more agreeable and extroverted supervisors are more likely to have employees who engage in information sharing. A finding unique to this study is the support for mediation via employee perceived LMX, where LMX partially explained the relationship between employee perceived supervisor personality and employee-supervisor information sharing.

ACKNOWLEDGMENTS

A thank you to Dr. Steve Jex, Dr. Hanyi Min, and Dr. Shawn Burke, for their support throughout my thesis. Their words of encouragement, reading recommendations, and endless patience made my growth as a researcher and I/O Psychology professional an experience I will cherish throughout my career.

I also want to thank the MSIO graduating cohort of 2020. Each person in this cohort was supportive throughout my studies and writing. In particular, Breianna "Brei" Engleson, Kira Leach, Isabella Caisedo, Laura Blank, Kinjal Chheda, and Mitchel Eid for being amazing colleagues throughout my coursework and research.

Thank you to Juseob Lee and Dr. Kristin Horan for helping me work through my analyses. I could not have done this research without their help.

Finally, I thank my family for listening to me talk on and on about my research and supporting me throughout my studies and life.

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CHAPTER ONE: INTRODUCTION

Employees must share information and transfer their expertise to others in the workplace to remain competitive (Jackson, Chuang, Harden, Jiang, & Joseph, 2006) and foster employee growth and development (Hinds, Patterson, & Pfeffer, 2001). Knowledge creation and exchange have grown to be the most valuable contribution an employee can offer, even outweighing productivity (Powell & Snellman, 2004). Further, information sharing is recognized as crucial to growth in an industry; organizations themselves build knowledge management systems to facilitate it (Nonaka, 2007). Information sharing benefits can be seen at the individual, team, and organizational levels (Ahmad & Karim, 2019). Employees perceive the team climate as more supportive and effective when information sharing is practiced (Flinchbaugh, Li, Luth, & Chadwick, 2016). Benefits of information sharing also include tangible business profits, such as reduced production costs and sales growth (Wang & Noe, 2010).

Five distinct research areas on information sharing have been identified as a framework of information sharing antecedents; these areas include organizational context, interpersonal and team characteristics, cultural characteristics, individual characteristics, and motivational factors (Wang & Noe, 2010). Organizational context, including management support and the reward structure of an organization, has emerged as a primary influence on information sharing between leaders and followers and team members (Wang & Noe, 2010). One facet of organizational context is the support an employee receives from management (Wang & Noe, 2010). Therefore, management practices and styles hold sway over the information sharing tendencies of employees. Not surprisingly, organizational support for information sharing is positively associated with employee willingness to share (Lin, 2007).

Information sharing behavior in the workplace is often explained by social exchange theory (Wang & Noe, 2010; Kahya & Şhain, 2018). Social exchange theory suggests that people will consider the costs and benefits of their behavior within their relationships and choose a course of action that minimizes costs and maximizes benefits for themselves (Gouldner, 1960; Homans, 1958; Thibault & Kelley, 1959). Those who are confident their contributions will be rewarded will likely share or provide resources with a counterpart in any relationship, even an employee-leader relationship. Employees and leaders understand that information is a resource to either hoard or share because it is a valuable commodity in the workplace. The hierarchical difference between leaders and their employees introduces a different kind of social exchange, referred to as Leader-Member Exchange (LMX). Due to the imbalance of power in a leader-employee relationship, the leader holds more influence in terms of the relationship's quality and equity. Leaders who are adept at fostering quality relationships with employees benefit more from their employees' knowledge base than those who do not support high-quality relationships (Dulebohn, Bommer, Liden, Brouer, & Ferris, 2011). The present research examines the effects of leader personality on the quality of the relationship between a leader and employee and the effects LMX has on employee information sharing behavior.

CHAPTER TWO: LITERATURE REVIEW

Leader personality traits influence team effectiveness and relationship success, an effect that is shown to be mediated by relationship quality (Kahya & Sahin, 2018; Bernerth, Armenakis, Feild, Giles, & Walker, 2007). Influential leaders tend to say they are more extroverted, more agreeable, more conscientious, and less neurotic (Barrick et al., 2001; Silverthorne, 2001). In general, leader traits like agreeableness and extraversion are associated with leaders who quickly develop positive relationships with their employees (Carney, Colvin, & Hall, 2007). LMX, being a metric of the quality of leader-employee relationships, plays a mediating role in the association between leader personality and organizational citizenship behaviors (OCB) (Kahya & Şhain, 2017). When an employee engages in OCBs, they actively engage in helping behaviors that are not necessarily part of their job description, including sharing resources. The present research posits that leader personality and LMX quality, will influence employee information sharing.

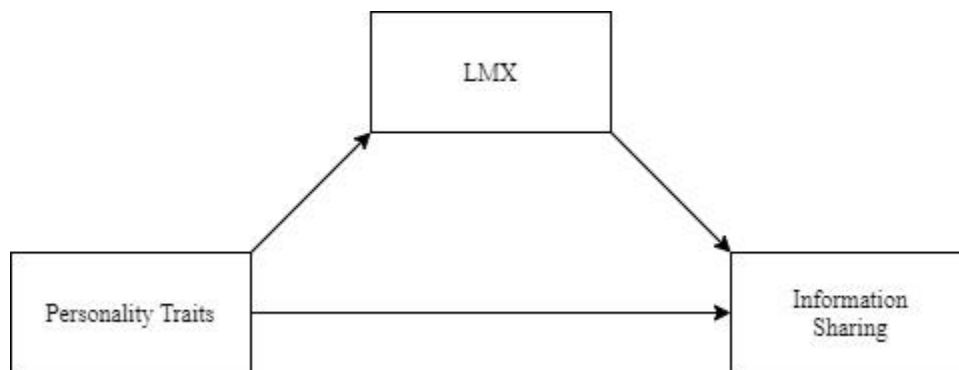


Figure 1. Theoretical Model

Note. This study's variables are measured as supervisor personality reported by employees, employee perceptions of LMX, and employee-supervisor information sharing.

Personality Traits and LMX

Individual personality differences can lead to variations in the effectiveness of a leader within an organization. High quality LMX is linked to leader personality traits such as agreeableness and extraversion (Bernerth, Armenakis, Field, Giles & Walker, 2007), such that extraversion and agreeableness are positively related to LMX quality (Sears & Hackett, 2011; Kahya & Şhain, 2017). Tov et al. (2014) found that extraversion and agreeableness are positively related to personal relationship satisfaction; this study's implications may apply to workplace relationships as well.

The personality trait extraversion, in particular, is associated with effective leadership (Judge et al., 2002). Extraversion is a trait that has been cited as a desirable leadership quality throughout leadership research (Judge et al., 2002; Hogan et al., 1994). Facets of most Big-Five extraversion scales include traits such as friendliness, gregariousness, and assertiveness. These traits are associated with leadership and are likely to benefit relationship building. Extraverts are more willing to engage in conversation with others, which would, in theory, facilitate the exchange of knowledge, insights, and expertise. Extraverted leaders may be perceived more favorably by their employees, contributing to higher quality leader-member exchange.

Agreeableness has shown less promise as a predictor of effective leadership (Judge et al., 2002), but it is crucial for relationship building and support. Agreeable individuals are described as having trust in others, are altruistic, and cooperate with ease. Although leaders must be assertive on occasion, an agreeable leader will likely build a trusting and comfortable relationship with their employees. In fact, teams that are altogether agreeable in nature are more willing to share information and do so more frequently (De Vries et al., 2006). Further, agreeable

and extroverted leaders are perceived to be reliable by employees relatively quickly (Carney et al., 2007). Therefore, an employee who perceives a leader as highly extraverted and agreeable will likely perceive high quality LMX and engage in leader-employee information sharing. Given that LMX quality is associated with leader extraversion and agreeableness (Bernerth, Armenakis, Field, Giles & Walker, 2007), the present study focuses on these two personality traits as they relate to LMX.

H1: Leaders that score highly on an extraversion measure will have higher employee ratings of LMX quality.

H2: Leaders that score highly on an agreeableness measure will have higher employee ratings of LMX quality

LMX and Information Sharing

Another component of information sharing behavior may be an employee's perception of the quality of their relationship with their leader. According to social exchange theory, there is a sense of obligation between two parties to reciprocate goodwill and favors (Blau, 1964; Gouldner, 1960). It is a continuous exchange between persons that will continue as long as one "pays back" another, the other feels compelled to pay back the former, and so on. Leader-member exchange (LMX) theory is a social exchange perspective on employee and leader interaction quality that subscribes to the idea that leaders who give information, projects, and respect to their employees will receive respect, effort, and improved performance from their employees in return (Graen & Uhl-Bien, 1995). The relationship between a leader and employee must be interpreted slightly differently, as the nature of the expectations and behaviors between

them differs from informal or personal relationships. Leaders and members within an organizational hierarchy relate to each other differently than those with no formal status difference. Leaders may assign projects to employees who perform exceptionally well. This behavior yields a strong and trusting bond between a leader and their employees. Therefore, leader-employee dyads with a high quality LMX will exchange more valuable assets, such as opportunities for employees to showcase skills, high quality performance, and strong professional relationships (Graen & Uhl-Bien, 1995).

The relationship between employees and leaders is crucial to the effectiveness of both the leader, employee, and the team in which they work. LMX is linked to interpersonal benefits between a leader and a team of employees (Kahya & Şhain, 2017). Leaders who have high-quality LMX with their employees are more trusted and more likely to receive information and support from their employees. As information itself is an essential contribution employees can offer their coworkers and supervisors, it is a resource to be shared among those who maintain a quality relationship with their coworkers. Therefore, this study proposes that employees who perceive high-quality LMX share more information than those who do not.

H3: Leaders who score highly on an LMX quality measure will have higher scores on an information sharing measure reported by their employees.

LMX as a Mediator

Finally, LMX is considered as a mediator of the relationship between leader personality traits and information sharing tendencies. If there is a positive correlation between LMX and information sharing, this will support the notion that the quality of a supervisor-employee

relationship is linked to supervisor-employee information sharing. In addition, LMX is examined and interpreted as a mediator of the relationship between leader personality and information sharing, such that leaders who are highly agreeable and extraverted will have higher quality LMX as perceived by their employees, as well as a higher degree of information sharing.

H4: Leader extraversion will be positively associated with information sharing.

H5: Leader agreeableness will be positively associated with information sharing.

H6: LMX will mediate the relationship between leader extraversion and information sharing, such that high LMX will explain the positive relationship between extraversion and information sharing.

H7: LMX will mediate the relationship between leader agreeableness and information sharing, such that high LMX will explain the positive relationship between agreeableness and information sharing.

CHAPTER THREE: METHODOLOGY

Participants and Procedure

Undergraduate university students who were employed at least 20 hours per week, as well as their supervisors, were invited to participate in this study. Data collection was conducted using the university-based Sona system, which provides students who participate in studies with extra credit in their courses. 134 responses were collected from undergraduates; however, 53 responses were excluded as these responses were less than 80% complete. Responses were collected from supervisors who were asked to complete surveys by their employees. 21 supervisors responded to invitations from their employees to complete the survey; however, only 15 supplied enough information to match their responses with their employees. Due to the lack of response from supervisors, this study's analyses focused on employee perception of supervisor personality, and preliminary analyses were conducted on dyads in which both the employee and supervisor completed more than 80% of their surveys.

Supervisor Measures

Leader Personality. Supervisors were asked to respond to a short form of the International Personality Item Pool (IPIP), the Mini-IPIP, which measures Big-Five lexical markers of personality (Donnellan et al., 2006). The mini-IPIP was developed and validated by Donnellan et al. (2006) using a 50-item pool of Goldberg's (1992) IPIP. A table with the reliability of the Mini-IPIP and convergent correlations to the 50-item IPIP scale is provided in Table 1. It should be noted that while the original 50-item scale uses emotional stability as one of the five

personality facets, Donnellan et al. (2006) uses a reverse coding of the emotional stability scale to represent neuroticism.

Table 1. Mini-IPIP Scale Reliability and Convergent Validity with Parent Scale

Big-Five Lexical Markers	Number of Items	<i>a</i>	<i>r</i>_{parent scale}	<i>r</i>_{parent scale, excluding identical items}
1. Extraversion	4	.77	.93	.78
2. Agreeableness	4	.70	.89	.67
3. Conscientiousness	4	.69	.90	.67
4. Intellect/Openness	4	.65	.85	.56
5. Neuroticism-Emotional Stability	4	.68	-.92 ^a	.76
Total/Mean	20	.70	.90	.69

N = 2,663. ^aThe Mini-IPIP scale for neuroticism was adapted from the 10-item IPIP scale for emotional stability. Neuroticism and emotional stability are on opposite ends of the same continuum. The former scale is a reverse coding of the latter; this explains why neuroticism's convergent correlation is negative.

*r*_{parent scale} refers to the convergent correlations between Mini-IPIP scales and 50-item IPIP pool scales.

*r*_{parent scale, excluding identical items}, refers to the convergent correlations between Mini-IPIP scales and 50-item IPIP pool scales, excluding identical items between the two scales. The values on this table are sourced from the scale authors Donnellan et al. (2006).

The Mini-IPIP has a mean Cronbach's alpha of .70 across Big-Five facets, making it an acceptable scale for research studies. This 20-item scale was used to minimize survey fatigue in both employee and supervisor respondents, as alternative scales exceeded an acceptable survey length when combined with other scales in this study. Participants rated items on a five-point Likert scale (1=Disagree, 3=Neutral, and 5=Agree). Examples of the included items are: "[I]

Make people feel at ease" and "[I] Feel at ease with people." Supervisors responded to the Mini-IPIP in reference to themselves. The Mini-IPIP scale items are shown in Appendix A.

Leader-Member Exchange. Supervisor perception of LMX quality was measured using the LMX 7 questionnaire, developed by Graen and Uhl-Bien (1995). The LMX-7 is comprised of seven Likert scale items, including "How well does your employee understand your job problems and needs?" and "How would you characterize your working relationship with your employee?". A meta-analytic review examined the reliability of the LMX-7 scale and found that the mean sample-weighted Cronbach's alpha of this scale is .89 (Gerstner & Day, 1997). More recent Cronbach's alpha estimates ranged from .76 - .91 (Furnes et al., 2015). This scale is provided in Appendix B.

Demographic questionnaire. A demographic questionnaire was included in determining if similarities or differences within dyads influence LMX or information sharing tendencies. Demographic items included participant age, gender, race, and ethnicity. In addition, participants were asked the average number of hours per week they work, worker industry, the length of time they have known the employee, and how long they have worked with their employee. Of particular interest was the length of the working relationship between the supervisor and employee, as LMX quality may be affected by the amount of time the dyads have worked together. The demographic questionnaire is provided in Appendix D.

Employee Measures

Leader Personality. Employees were asked to respond to the same measure of personality as supervisors, the Mini-IPIP, but instead were asked to report their perceptions of their

supervisor's personality. As stated above, the scale has a Cronbach's alpha of .70, contains 20 items, and measures Big-Five lexical markers of personality. The scale is provided in Appendix A.

Leader-Member Exchange. Employees were asked to respond to the LMX-7, identical to the supervisor LMX measure, revised to assess employee perceptions of LMX in reference to their supervisor. This scale is provided in appendix B.

Information Sharing. Employee-supervisor information sharing and employee-coworker information sharing was assessed using a scale developed by O'Reilly & Roberts (1977). The scale contains five items and measures the extent to which an employee feels that there is open communication between themselves and another person. The measure includes items such as "It is easy to talk openly to my supervisor." and "It is easy to ask advice from my supervisor." The scale was altered to reference the participants' perception of information sharing with coworkers. The O'Reilly & Roberts (1977) measure has a Cronbach's alpha of .86, and is provided in Appendix C.

Data Analysis

H1 through H5 act as hypotheses in this study as well as prerequisites for mediation analyses. Built on the support from hypotheses 1 - 5, H6 and H7 assess LMX as a mediator in two hypothesized models (H6 & H7) and three exploratory models, each including one Big-Five personality trait as a predictor and employee-supervisor information sharing as an outcome.

Three methods of establishing mediation were used to determine the magnitude and significance of links between variables and evaluate mediation models. Path analysis using

simple and multiple regression yielded standardized coefficients between variables. Direct and indirect paths between predictors and a single outcome (information sharing) were compared to determine the presence and strength of mediation (Baron & Kenny, 1986). Mediation modeling was applied using Hayes (2014) PROCESS macro in SPSS. Model 4 of the macro was used to test for simple mediation, pictured in Figure 1. As shown in the model, LMX was used as a mediator from each personality trait (agreeableness – H7, conscientiousness, extraversion – H6, openness, and neuroticism) to information sharing between a supervisor and employee. The third method of quantifying the effects of mediation is an R^2 equation that isolates the effect of mediation in each model and is noted as R^2_{Med} (Fairchild et al. 2009). R^2_{Med} was used because is an easily comprehensible metric for understanding the degree of variation explained by mediation, and mediation alone, within each model.

CHAPTER FOUR: RESULTS

Descriptive Statistics and Scale Reliabilities

The following analyses were done using employee responses. Employee responses were used in place of supervisor self-report of personality due to a comparatively low supervisor response rate ($N_{\text{supervisor}} = 15$). Although the exclusion of supervisor responses from analyses was unfortunate, employee perceptions of each variable in this study are shown to be promising measures in the context of the proposed mediation models.

Demographics in Table 2 show that study participants were 68% female and 33% male, and on average, 22 years old. The majority of employees (53%) had been working with their supervisors for less than one year at the time of their participation in the study. Respondents also indicated hotel/food service (33%), retail (19%), or health care/social assistance (9%) as their industry. Scale descriptives are shown in Table 3. Zero-order correlations for each variable are shown in Table 4.

Agreement between employee perception of supervisor personality and supervisor self-report of personality was examined; correlations can be seen in Table 8. Surprisingly low correlations for each personality facet demonstrated that employees and supervisors have vastly differing perspectives on supervisor workplace personality. This disagreement may be explained by supervisors exhibiting small portions of their whole personality or exaggerating certain facets to project a socially desirable demeanor. Another explanation could be employees having a skewed perception of their supervisor's personality due to a difference in workplace status.

Table 2. Employee Demographics

Gender	
Female	68%
Male	33%
Age	
Mean (Years)	22
SD (Years)	5.5
Racial Background	
White	56%
Black or African American	18%
Asian	5%
Other	8%
More than 1 race	13%
Prefer not to answer	1%
Ethnicity	
Hispanic or Latino	36%
Not Hispanic or Latino	60%
Prefer not to answer	4%
Employee Working Hours / Week	
Less than 10 hours per week	1%
10 or more hours per week	9%
20 or more hours per week	43%
30 or more hours per week	33%
40 or more hours per week	15%
Industry	
Hotel and Food Services	33%
Retail	19%
Health Care and Social Assistance	9%
Primary/Secondary (K-12) Education	5%
Construction	4%
Arts, Entertainment, and Recreation	4%
Government and Public Administration	4%
Other	24%

$N_{\text{employee}} = 81$

Table 3. Descriptive Statistics and Internal Consistencies

Variable	Mean	SD	Observed Range	Possible Range	Alpha
Personality (Mini-IPIP)					
Agreeableness	3.76	0.92	1 - 5	1 - 5	0.82
Conscientiousness	4.04	0.90	1.25 - 5	1 - 5	0.83
Extraversion	3.49	0.83	1.25 - 5	1 - 5	0.70
Openness	3.50	0.81	1.5 - 5	1 - 5	0.72
Neuroticism	2.73	0.68	1 - 4.67	1 - 5	0.33
Neuroticism ^a	2.54	0.90	1 - 4.67	1 - 5	0.64
Leader Member Exchange	27.15	5.14	13 - 35	7 - 35	0.84
Information Sharing with Supervisor	5.73	1.33	1.6 - 7	1 - 7	0.95
Information Sharing with Coworkers	5.66	1.38	1 - 7	1 - 7	0.95

$N_{\text{employee}} = 81$. ^aNeuroticism scale excluding one or four items due to a lack of internal consistency. Internal consistency was improved and more consistent with the alpha of previous studies using this measure.

Cronbach's alpha was calculated for each measure using employee responses. Internal consistencies across most measures were congruent with previously found alphas reported in the method section of this paper, with the exception of the Mini-IPIP neuroticism scale ($\alpha = .33$). One of four items on the neuroticism scale, "My supervisor is seldom blue," was removed to improve the scale's internal consistency, as analyses indicated that it was the culprit of the scale's irregularly low alpha. The new, three-item scale ($\alpha = .64$) is noted as neuroticism^a in all tables. All analyses were conducted using both scales to examine any effect excluding the item may have had on hypothesis testing or mediation. Results for both the complete and adjusted scale can be seen with the same notation (neuroticism^a) throughout tables.

Table 4. Intercorrelations Among Variables

Variable	1	2	3	4	5	6	7	8
1. Agreeableness	-							
2. Conscientiousness	.49**	-						
3. Extraversion	.56**	.18	-					
4. Openness	.59**	.53**	.52**	-				
5. Neuroticism	-.40**	-.35**	-.03	-.29**	-			
6. LMX	.56**	.56**	.46**	.49**	-.28*	-		
7. Information Sharing (Supervisor)	.56**	.51**	.43**	.57**	-.29**	.80**	-	
8. Information Sharing (Coworker)	.30**	.16	.30**	.16	-.04	.25*	.31**	-

N_{employee} = 81.

p ≤ .05*

p ≤ .01**

Significant intercorrelations between employee perceptions of supervisor personality traits were found, the highest of which was between agreeableness and openness, agreeableness and extraversion, and openness and extraversion. Surprisingly, the correlation between employee-supervisor and employee-coworker information sharing was minor, but significant $r(81) = .31, p < .001$, indicating that supervisors may hold some sway over coworker behavior, climate, or relationships.

Path and Regression Analysis: Hypothesis 1 - 5

Hypothesis 1 and 2 proposed that leader extraversion and agreeableness would be positively associated with LMX. A significant main effect was found for leader extraversion and agreeableness on LMX, such that leaders who were rated as highly extraverted $\beta = .46$, $t(81) = 4.56$, $p < .001$ and agreeable $\beta = .55$, $t(81) = 5.92$, $p < .001$ by their employees were more likely to have greater LMX. Employee perception of leader extraversion explained 21% of the variance in employee perception of LMX, $R^2 = .21$, $F(1, 79) = 20.77$, $p < .000$; while employee perception of leader agreeableness explained 31% of the variance of employee perception of LMX, $R^2_{XM} = .31$, $F(1, 79) = 35.09$, $p < .000$. Therefore, hypothesis 1 and 2 were supported. Figure 2 illustrates the first path in the proposed simple mediation model, path a, representing the standardized coefficients for the relationship between employee perception of supervisor personality and the proposed mediator, LMX.

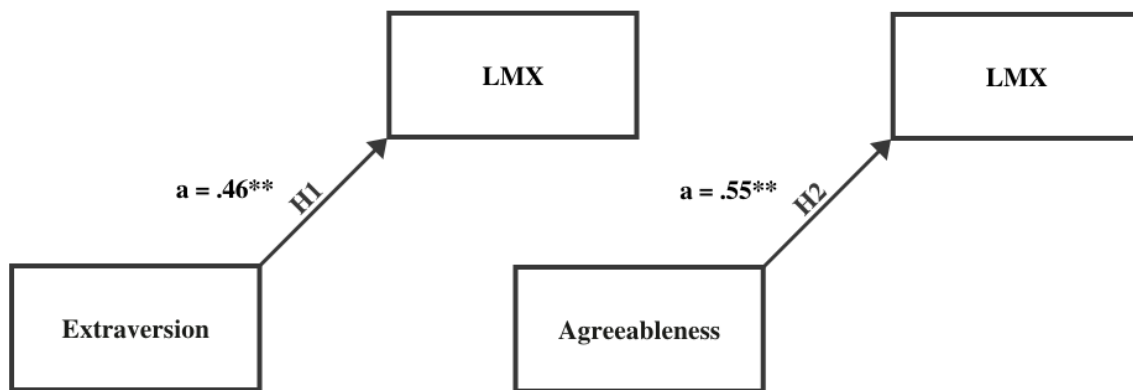


Figure 2. Hypothesis 1 & 2 Regression Analysis Results

Note. Regression analysis results, H1: main effects of employee perception of supervisor extraversion on LMX, H2: main effects of employee perception of supervisor agreeableness on LMX.

Hypothesis 3 proposed that employees who perceive higher quality LMX would report greater levels of information sharing. A significant main effect was found for LMX on

information sharing between supervisors and employees ($\beta = .80$, $t(81) = 11.96$, $p < .001$). Results from this analysis suggested that employee perception of LMX quality with their supervisor explained 64% of the variance in employee-supervisor information sharing, $R^2 = .64$, $F(1, 79) = 143.05$, $p < .000$. Therefore, hypothesis 3 was supported.

Hypothesis 4 and 5 proposed that leader extraversion and agreeableness will be positively associated with information sharing between supervisors and employees. Results indicated that extraversion ($\beta = .43$, $t(81) = 4.24$, $p < .000$) and agreeableness ($\beta = .56$, $t(81) = 5.99$, $p < .000$) were significant positive predictors of information sharing. Employee perceptions of supervisor extraversion explained 19% of the variance of employee-supervisor information sharing, $R^2 = .19$, $F(1, 79) = 17.94$, $p < .000$, supporting hypothesis 4. Further, employee perceptions of supervisor agreeableness explained 31% of the variance of employee supervisor information sharing, $R^2 = .31$, $F(1, 79) = 35.91$, $p < .000$, supporting hypothesis 5.

Mediation: Explanation of Analyses

Before detailing the mediation model results, it is important to note that the language used in mediation analysis implies causality. However, leader personality traits are not to be understood as a predictor in the sense that they are causally linked to the mediator and outcome variables, as this study is cross-sectional. Rather, the personality traits are a predictor in the context of mediation.

The last two hypotheses propose that LMX explains the connection between employee perception of leader personality and employee-supervisor information sharing, acting as a mediator between the two. Each of the findings detailed above is necessary for establishing

support for mediation, as the support for each hypothesis doubles as a prerequisite for testing a mediation model. A visual representation of the mediation model to be tested and its paths are shown in Figure 3.

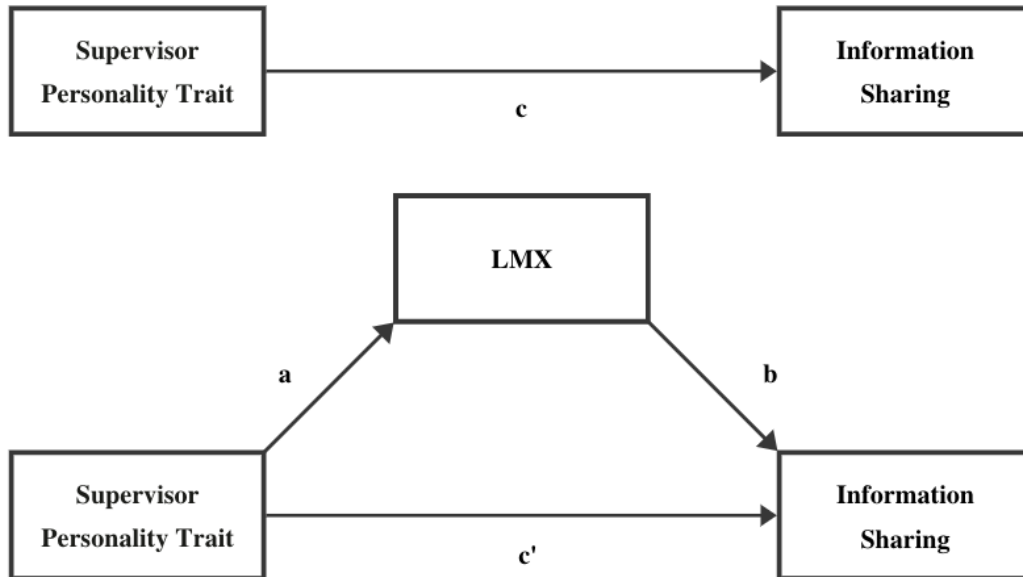


Figure 3. Statistical Mediation Model with Path Notation

Note. All supervisor personality traits in mediation testing results were reported by employees.

The first condition (H4 & H5) is to test for a relationship that may be mediated, which was found – both supervisor extraversion and agreeableness are positively related to information sharing, noted as path *c* in Figure 3. Second, there must be support for a significant relationship between the predictor variable and the mediator (H1 & H2), which was also met – supervisor extraversion and agreeableness were positively related to LMX, noted as path *a* in Figure 3. Third, the mediator must also be shown to have a significant and separate effect on the outcome. In this step, leader personality is essentially used as a control variable in regression to parse out the effect of the mediator (LMX) on the outcome (employee-supervisor information sharing), noted as path *b* in Figure 3. The fourth and final condition is to examine the effects of the

predictor on the outcome variable while controlling for the mediator, noted as path c' in Figure 3. To calculate this, two multiple regression analyses were used to assess the effects leader extraversion and agreeableness (separately) have on employee-supervisor information sharing, using LMX as a covariate to partial out its effects on the outcome. Mediation is supported to varying degrees if the direct effect of supervisor personality, controlling for LMX (path c'), is insignificant, equal to zero, or less than path c.

Mediation Analyses: Hypothesis 6 and 7

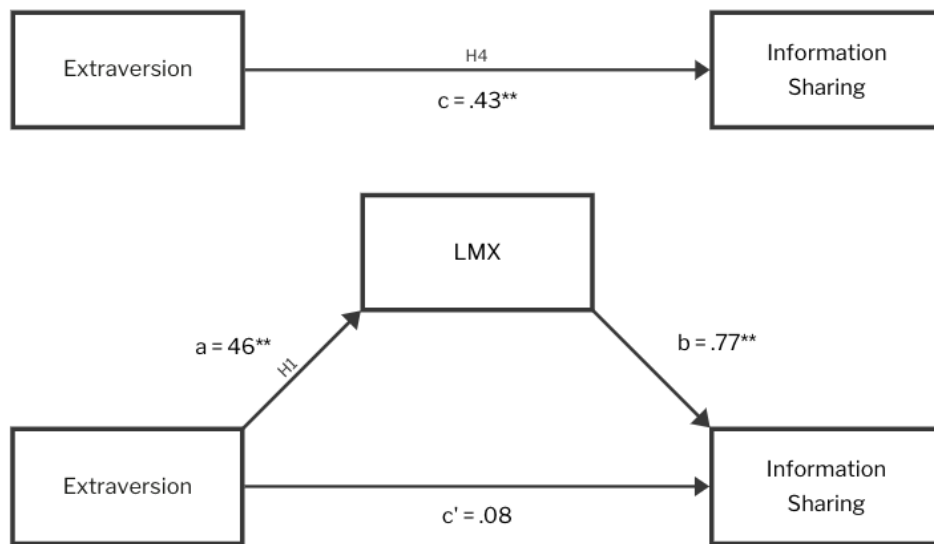


Figure 4. Hypothesis 6, Statistical Mediation Model

$N_{\text{employee}} = 81$, standardized coefficients are shown. Total indirect effect of H6, mediation model $\beta = .39$, CI [.24, .52].

Hypothesis 6 proposed that leader extraversion will positively influence information exchange between supervisors and employees through LMX. Employee perception of supervisor extraversion was no longer a significant predictor of employee-supervisor information sharing after controlling for the mediator, LMX ($\beta = .13$, $t(81) = 1.07$, $p = .287$), consistent with full

mediation. Standardized coefficients for each path in the mediation model, including employee perception of supervisor personality, can be seen in Figure 4. In addition to path analysis, percentile bootstrap estimation with 5,000 samples and a 95% confidence interval was used to calculate the total indirect effect of supervisor personality on information sharing (Hayes, 2014). The criteria for significant mediation using Hayes (2014) PROCESS macro lies in the bootstrapped confidence interval for the total indirect effect. If the confidence interval does not include zero, mediation is supported. The bootstrapped confidence interval for this model's total indirect effect (H6) did not include zero, further supporting LMX as a mediator in hypotheses 6. Results and path coefficients are shown in Table 5 and illustrated in Figure 4.

Table 5. Mediation Model Results: Employee-Supervisor Information Sharing

Path	X → Y (c)	X → M (a)	X and M → Y	X → M → Y	Meditation Support	
Information Sharing with Supervisor			X (c')	M (b)		
Agreeableness→LMX→Info Sharing	.56**	.55**	.16*	.71**	.39 [.24, .52]	Partial mediation supported
Conscientiousness→LMX→Info Sharing	.51**	.56**	.09	.75**	.42 [.26, .57]	Full mediation supported
Extraversion→LMX→Info Sharing	.43**	.46**	.08	.77**	.35 [.18, .51]	Full mediation supported
Openness→LMX→Info Sharing	.56**	.49**	.23**	.69**	.34 [.19, .47]	Partial mediation supported
Neuroticism→LMX→Info Sharing	-.29**	-.28*	-.07	.78**	-.22 [-.38, -.04]	Full mediation supported
Neuroticism ^a →LMX→Info Sharing	-.35**	-.28*	-.13	.76**	-.22 [-.36, -.15]	Full mediation supported

N_{employee} = 81.

Standardized coefficients are shown for paths from predictor to outcome (X → Y), predictor to mediator (X → M), predictor and mediator to outcome (X and M → Y), and indirect effects (X → M → Y).

Bootstrapped confidence intervals are shown in brackets.

H6 & H7 mediation analyses are indicated on this table in bold font.

Neuroticism^a subscale scale excludes one of four items from the neuroticism subscale.

Paths a, b, c, and c' are indicated in parentheses in table headers.

In (1), R^2_{Med} is the amount of variance explained by mediation, r^2_{MY} is the amount of variance in the outcome explained by the mediator, $R^2_{Y,MX}$ is the amount of variance in the outcome explained by both the predictor and mediator, and r^2_{XY} is the amount of variance in the outcome explained by the predictor (Fairchild et al., 2009). Both R^2 and r^2 , despite differing in notation, are obtained from R^2 in regression analysis; authors chose to represent simple regression (or raw correlation r^2) R^2 as r^2 to contrast with multiple regression R^2 (as in $R^2_{Y,MX}$).

$$R^2_{Med} = r^2_{MY} - (R^2_{Y,MX} - r^2_{XY}) \quad (1)$$

Using the equation above, mediation models were condensed to an easily comprehensible metric showing the “unique contribution that mediation has” on the model (Fairchild et al., 2009). The calculation for the effect of mediation in this model revealed that 18% of the variance in employee-supervisor information sharing is explained by mediation ($R^2_{Med}=.18$) while 65% of the variance of employee-supervisor information sharing explained by both supervisor extraversion and LMX ($R^2_{Total}=.65$). Essentially, 28% ($.18/.65$) of the variance explained in this model is the result of mediation via LMX.

Hypothesis 7 proposed that supervisor agreeableness will positively influence employee-supervisor information sharing through LMX. Leader agreeableness remained a significant predictor of information sharing when controlling for LMX ($\beta = .16$, $t(81) = 2.08$, $p < .05$), supporting a partial mediation model for this personality facet. The total indirect effect was tested in the same fashion as Hypothesis 6, using percentile bootstrap estimation with 5,000 samples and a 95% confidence interval. The total indirect effect calculated by the bootstrapped

mediation analysis was $\beta = .39$; the confidence interval did not include zero, further supporting partial mediation for hypothesis 7. Results are shown in Table 5 and illustrated in Figure 5.

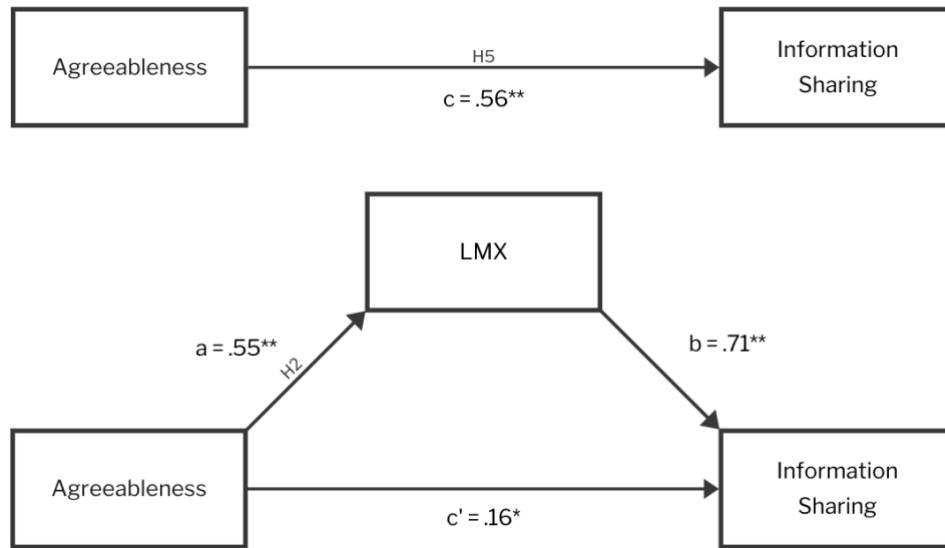


Figure 5. Hypothesis 7: Statistical Mediation Model

$N_{\text{employee}} = 81$, standardized coefficients are shown.

Approximately 66% of the variance in information sharing was accounted for by employee perception of supervisor agreeableness and LMX quality ($R^2_{Y, XM} = .66$). The effect of mediation through LMX accounted for 29% of the variance in employee-supervisor information sharing ($R^2_{\text{Med}} = .29$). Therefore, 44% ($.29/.66$) of the variance explained in this model is a product of mediation via LMX. Though only partial mediation is supported in this model (H7), the significant and large indirect effects ($R^2_{\text{Med}} = .29$, $\beta = .39$) of agreeableness on employee-supervisor information sharing indicates that employee perception of supervisor agreeableness mediated by LMX has more of an effect on employee-supervisor information sharing than supervisor extraversion.

Mediation Analyses: Exploratory Models

Interestingly, as Table 5 shows, analyses on all other supervisor personality traits supported partial or full mediation via LMX as well. Using the same criteria for mediation support as H6 and H7, full mediation was supported for conscientiousness ($\beta = .65$, CI = .28, .94), while partial mediation was supported for openness ($\beta = .58$, CI = .30, .84). Neuroticism had a direct negative effect on information sharing, while LMX had a significant positive effect on information sharing when controlling for neuroticism (path b). Figure 6 shows a clear picture of how each piece of this model contributes to the outcome. Path b is positive, while all other paths are negative, suggesting inconsistent mediation in this particular model.

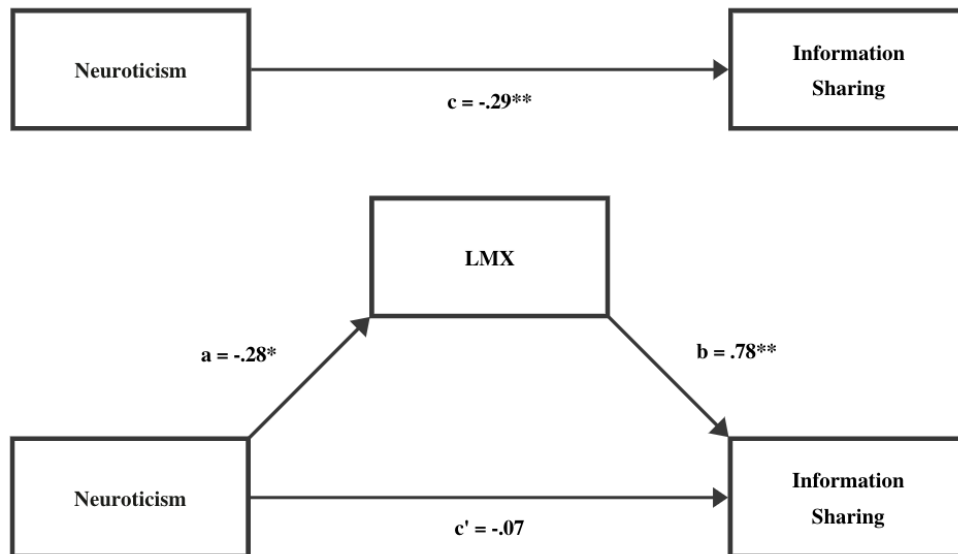


Figure 6. Statistical Mediation Model, Supervisor Neuroticism

However, as LMX has a positive relationship with information sharing, even in this model, LMX may act as a suppressor variable and attenuate the adverse effects of employee perceptions of supervisor neuroticism. Even still, this mediation model shows that the total effect of neuroticism on information sharing is negative, high quality LMX (at least in this data set) does not cancel

out the negative effects of neuroticism on information sharing, as the standardized direct effect of neuroticism on information sharing (path c, $\beta = -.29$) is still larger than the standardized indirect effect ($\beta = -.22$). R^2_{Med} for each model can be seen in Table 5.

Exploratory Research Question: Employee-Coworker Information Sharing

Exploratory analyses were done to find if supervisor personality or LMX had any effect on coworker information sharing using simple and mediation analysis. Two leader personality traits were found to predict information sharing between employees and coworkers significantly. Supervisor agreeableness significantly predicted coworker information sharing ($B = .43$, $SE = .155$, $t(81) = 2.79$, $p < .01$), as did supervisor extraversion ($B = .46$, $SE = .17$, $t(81) = 2.76$, $p < .01$). LMX did not significantly affect coworker information sharing; therefore, mediation via LMX is not supported. Path analysis and mediation results are shown in Table 6.

Table 6. Mediation Model Results, Coworker Information Sharing

Path	X → Y (c)	X → M (a)	X and M → Y	X → M → Y	Mediation Support	
Information Sharing with Coworkers			X (c')	M (b)		
Agreeableness → LMX → Info Sharing	.43**	3.10**	.35*	.03	.08 [-.16, .34]	Mediation not supported
Conscientiousness → LMX → Info Sharing	.24	3.20**	.06	.05	.18 [-.05, .47]	Mediation not supported
Extraversion → LMX → Info Sharing	.46**	2.72**	.37	.03	.09 [-.11, .23]	Mediation not supported
Openness → LMX → Info Sharing	.27	3.12**	.11	.05	.16 [-.07, .40]	Mediation not supported
Neuroticism → LMX → Info Sharing	-0.07	-2.13*	.06	.06*	-.13 [-.35, .02]	Mediation not supported
Neuroticism ^a → LMX → Info Sharing	-.12	-1.62*	-.02	.06*	-.10 [-.25, .02]	Mediation not supported

Note. Unstandardized effect sizes are shown for paths from predictor to outcome (X → Y), predictor to mediator (X → M), predictor and mediator to outcome (X and M → Y), and indirect effects (X → M → Y). a Neuroticism excluding one of four items in the scale, removed to improve internal consistency of the scale, mediation results did not change. Paths a, b, c, and c' are indicated in parentheses in table headers.

CHAPTER FIVE: DISCUSSION

Summary of Findings

This study's primary research question was, do leaders who are agreeable and extraverted lead to employee information sharing, and if so, is the relationship at least partially explained by leader-member exchange (LMX)? In search of potential antecedents to information sharing in the workplace and as an answer to gaps in information sharing research identified by Wang & Noe (2010), this study investigated the relationships among leader personality, LMX, and information sharing between supervisors and employees.

Hypotheses of this research proposed that the leader agreeableness and extraversion, being outwardly facing and salient traits to employees, would predict information sharing through the mediating effects of LMX. Through employee (N=81) perceptions of each variable in the proposed models, the data demonstrated support for each of the hypotheses mentioned above. Furthermore, and surprisingly, data suggests that LMX also fully mediates the relationship between leadership conscientiousness and employee-supervisor information sharing. In addition, support for LMX as a partial mediator between leadership openness and information sharing. Inconsistent mediation was found for LMX when the indirect effect of neuroticism on information sharing was examined, such that LMX improved information sharing, but not enough to counteract the adverse effects of employee perceived leader neuroticism.

Although the neuroticism scale demonstrated negative correlations with both employee-supervisor and employee-coworker information sharing, reverse coding the scale as a measure of emotional stability, as the authors of the neuroticism scale mention, would make the mediation

model consistent and positive. This would positively effect information sharing and support full mediation in the Neuroticism-LMX-Information Sharing mediation model. Table 7 lists a concise summary of the effects of mediation for each model of employee perception of leader personality-LMX-employee/supervisor information sharing.

Table 7. R^2_{Med} Results for Mediation Analyses

	r^2_{MY}	-	$(R^2_{Y.MX}$	-	$r^2_{XY})$	=	R^2_{med}
Agreeableness→LMX→Info Sharing	0.64		0.66		0.31		29%
Conscientiousness→LMX→Info Sharing	0.64		0.65		0.26		25%
Extraversion→LMX→Info Sharing	0.64		0.65		0.19		18%
Openness→LMX→Info Sharing	0.64		0.68		0.32		28%
Neuroticism→LMX→Info Sharing	0.64		0.65		0.08		8%
Neuroticism ^a →LMX→Info Sharing	0.64		0.66		0.12		11%

Calculated using Fairchild et al. (2009) equation for estimating variation explained by mediation effects.

This study has found that employee perception of leader personality doesn't stop at the interpersonal relationship between employee and supervisor (LMX) but affects coworker information sharing as well. However, support for increased coworker information sharing was only found with the personality traits agreeableness and extraversion. This finding is most likely because extroverted and agreeable leaders may be more adept at facilitating communication between groups of people as well as one-on-one. No mediating effects through LMX were found on coworker information sharing, likely because LMX is a measure of leadership and employee

relationships rather than overall work group relationships, such as group cohesion or group interconnectedness.

This study contributes to information sharing and LMX research because of its unique use of employee perceptions of leader personality. A literature search revealed no studies collecting employee perception of leader personality. However, many studies are using dyadic data comparing self-report leader personality to employee-reports of abusive supervision, team creativity, LMX quality, employee engagement, voice behavior, and so on, none of them examined self-other report agreement on personality. Interestingly enough, venturing outside of industrial-organizational psychology research yields a wealth of studies examining self-other reports of personality.

For example, a meta-analytic review of self-other agreement in personality reports by Kim et al. (2020) showed that self and various types of other reports were quite similar. The meta-analysis separated other reports by relation to the target personality but focusing in on the standardized mean differences between self-colleague reports, as colleagues are likely coworkers, of personality facets ranged from $-.18$ to $.13$. This suggests that differences between self and other reports may not vary as drastically as one may think.

Implications

Given that supervisor support is needed to facilitate information sharing (Wang & Noe, 2010), it is crucial to find which leadership traits and interpersonal relationships between employees and leaders lead to information sharing. This research focused on individual characteristics of leaders (personality) as well as motivational factors (LMX) that contribute to

information sharing and found that both related to information sharing to varying degrees. Previous research has examined the effect of leader personality on LMX (Bernerth et al., 2007) and found that leader conscientiousness and agreeableness contributed to positive employee perceptions of LMX. However, no studies have used LMX as a mediator to explain the relationship between leader personality and information exchange. This research contributes to information sharing literature and further explains the effects of leader characteristics, specifically personality, on LMX. In general, leaders who are perceived as more conscientious, open, agreeable, and extroverted are more likely to have positive employee perceptions of LMX and, therefore, more information sharing with an employee. In comparison, leaders that are perceived as more neurotic are likely to have negative perceptions of LMX and therefore share less information with an employee.

Supervisor self report and supervisor employee report of personality agreement was not significant, with the only significant correlation being extraversion. Although these results are far from encouraging as a reliable measure of employee report of leader personality, the sample size is too small to draw any definitive conclusions. A full correlation table is shown in Table 8.

Table 8. Supervisor Self Report-Employee Report Agreement, Personality Facets

Self Report - Employee Report	r	p
Agreeableness	0.48	0.07
Conscientiousness	0.24	0.39
Extraversion	0.68	0.01
Openness	-0.05	0.87
Neuroticism	0.10	0.73

N=15

Although leader self reports of personality were not obtained, the connections employee perception of supervisor personality to LMX quality and information sharing were strongly supported. While the employee report measure of leader personality may not reliably estimate leader self reports of personality, employees' perceptions of leader personality may measure an altogether different but still predictive and valid construct. Employee reports of leader personality have the potential to be used as a developmental tool for leadership training programs in conjunction with leadership techniques to target high quality LMX development to foster a more self aware and perceptive leader.

Limitations

This study's limitations include a lack of dyadic data, as supervisors did not participate to a large enough degree to determine relationships between self-report and employee-report personality traits. Thus, all analyses used only employee reports of supervisor personality rather than supervisors' self-reports of personality. Pearson correlations were run supervisor self-

reports of personality and employee-reports of supervisor personality to ascertain agreement between them regarding supervisor personality, resulting in relatively low correlations. Recommendations for future research include collecting dyadic data to compare self and other reports of supervisor personality. Additionally, further data collection is recommended to increase the power of effects found for mediation models presented in data analysis. A priori estimates of acceptable sample size using the application G*Power for a power of .8 (Faul et al. 2007) suggested that only 68 participants were needed to support a rejection of null hypotheses, which was satisfied in this study ($N = 81$). Further, due to the cross-sectional study design, determining any causal relationships between variables was not possible.

Conclusion

Given the benefits of information sharing and the importance of knowledge dissemination to organizations, the present study's first goal is to understand the relationship between select leader personality traits and information sharing. The second goal is to examine the relationship between leader personality traits and perceived leader-member exchange (LMX) quality, such that leaders who are more conscientious, open, agreeable, and extraverted are more likely to have positive employee perceptions of LMX and therefore more information sharing with an employee. In comparison, leaders who are perceived as more neurotic are more likely to have negative perceptions of LMX and therefore share less information with an employee. This study extends the body of research on information sharing and examines which leadership personality traits influence group members' tendency to participate in information sharing.

APPENDIX A
PERSONALITY SCALE

Respondents that are leaders/supervisors will be asked to answer the following items on a five-point Linkert scale (1=Disagree, 3=Neutral, and 5=Agree) in reference to themselves.

Respondents who are employees will be asked to answer the items on the same scale regarding their supervisors who will receive the questionnaire.

1. Am the life of the party.
2. Talk to a lot of different people at parties.
3. Don't talk a lot. (R)
4. Keep in the background. (R)
5. Sympathize with others' feelings.
6. Feel others' emotions.
7. Am not really interested in others. (R)
8. Am not interested in other people's problems. (R)
9. Get chores done right away.
10. Like order.
11. Often forget to put things back in their proper place. (R)
12. Make a mess of things. (R)
13. Have frequent mood swings.
14. Get upset easily.
15. Am relaxed most of the time. (R)
16. Seldom feel blue. (R)
17. Have a vivid imagination.

18. Have difficulty understanding abstract ideas. (R)

19. Am not interested in abstract ideas. (R)

20. Do not have a good imagination.

APPENDIX B
LEADER-MEMBER EXCHANGE SCALE

Leader-Member Exchange, LMX 7

1. Do you know where you stand with your leader/employee, 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/employee understand your job problems and needs?
(Not a bit, A little, A fair amount, Quite a bit, A great deal)
3. How well does your leader/employee recognize your potential?
(Not at all, A little, Moderately, Mostly, Fully)
4. Regardless of how much formal authority your leader/employee has built into his or her position, what are the chances that your leader/employee would use his or her power to help you solve problems in your work?
(None, Small, Moderate, High, Very high)
5. Again, regardless of the amount of formal authority your leader/employee has, what are the chances that he or she would "bail you out" at his or her expense?
(None, Small, Moderate, High, Very high)
6. I have enough confidence in my leader/employee that I would defend and justify his or her decision if he or she were not present to do so.
(Strongly disagree, Disagree, Neutral, Agree, Strongly agree)
7. How would you characterize your working relationship with your leader/employee?
(Extremely ineffective, Worse than average, Average, Better than average, Extremely effective)

APPENDIX C
INFORMATION SHARING SCALE

Agree = 7, Disagree = 0

1. It is easy to talk openly to all members of this group.
2. Communication in this group is very open.
3. I find it enjoyable to talk to other members of this group.
4. When people talk to each other in this group, there is a great deal of understanding.
5. It is easy to ask advice from any member of this group.

Information sharing with leader

Agree = 7, Disagree = 0

1. It is easy to talk openly to my supervisor.
2. Communication between my supervisor and I is very open.
3. I find it enjoyable to talk to my supervisor.
4. When my supervisor and I talk to each other, there is a great deal of understanding.
5. It is easy to ask advice from my supervisor.

APPENDIX D
DEMOGRAPHIC QUESTIONS

1. Please describe your job title:
 - [open response]
2. How many hours do you work in an average week (not including your coursework)?
 - Less than 10 hours per week
 - 10 or more hours per week
 - 20 or more hours per week
 - 30 or more hours per week
 - 40 or more hours per week
 - 50 or more hours per week
 - 60 or more hours per week
 - 70 or more hours per week
 - 80 or more hours per week
3. Please indicate how many credit hours you are taking in the current semester [students only].
 - [numerical response]
4. How long have you known the supervisor/employee who is also participating in this survey?
 - Less than 3 months
 - Less than 6 months
 - Less than one year
 - More than 1 year
 - More than 2 years
 - More than 3 years
 - More than 5 years

5. How long have you worked with the supervisor/employee who is also participating in this survey?

- Less than 3 months
- Less than 6 months
- Less than one year
- More than 1 year
- More than 2 years
- More than 3 years
- More than 5 years

6. How long have you and the supervisor/employee participating in this survey been working in the current position you hold at your job (how long had your supervisor/employee been your supervisor/under your supervision)?

- Less than 3 months
- Less than 6 months
- Less than one year
- More than 1 year
- More than 2 years
- More than 3 years
- More than 5 years

7. Please choose the best description of the industry you work in:

- Agriculture, Forestry, Fishing and Hunting
- Utilities

- Computer and Electronics Manufacturing
- Wholesale
- Transportation and Warehousing
- Software
- Broadcasting
- Other Information Industry
- Real Estate, Rental and Leasing
- Primary/Secondary (K-12) Education
- Health Care and Social Assistance
- Hotel and Food Services
- Legal Services
- Homemaker
- Religious
- Mining
- Construction
- Other Manufacturing
- Retail
- Publishing
- Telecommunications
- Information Services and Data Processing
- Finance and Insurance

- College, University, and Adult Education
- Other Education Industry
- Arts, Entertainment, and Recreation
- Government and Public Administration
- Scientific or Technical Services
- Military
- Other Industry

8. What is your gender?

- Male
- Female
- Other (specify)
- Prefer not to answer

9. What is your age?

10. How would you best describe your race?

- White
- Black or African American
- Asian
- American Indian or Alaska Native
- Native Hawaiian/Pacific Islander
- Other
- More than 1 race
- Prefer not to answer

11. What is your ethnicity?

- Hispanic or Latino
- Not Hispanic or Latino
- Prefer not to answer

APPENDIX E
IRB EXEMPTION DETERMINATION



UNIVERSITY OF CENTRAL FLORIDA

Institutional Review Board
FWA00000351
IRB00001138, IRB00012110
Office of Research
12201 Research Parkway
Orlando, FL 32826-3246

EXEMPTION DETERMINATION

May 28, 2020

Dear Hillary Chandler:

On 5/28/2020, the IRB determined the following submission to be human subjects research that is exempt from regulation:

Type of Review:	Initial Study, Category 2
Title:	The Mediating Role of Leader-Member Exchange: Leader Personality and Information Sharing
Investigator:	Hillary Chandler
IRB ID:	STUDY00001785
Funding:	None
Grant ID:	None
Documents Reviewed:	<ul style="list-style-type: none"> • HRP-251_FacultyAdvisorApproval, Category: Faculty Research Approval; • Employee_Survey-Flyer, Category: Recruitment Materials; • Employee-Supervisor_Communication-Employee.docx, Category: Survey / Questionnaire; • Employee-Supervisor_Communication-Supervisor.docx, Category: Survey / Questionnaire; • HRP-254_ESC-Employee, Category: Consent Form; • HRP-254_ESC-Supervisor, Category: Consent Form; • RequestForExemption-ESC, Category: IRB Protocol; • Supervisor_Survey-Request, Category: Recruitment Materials;

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made, and there are questions about whether these changes affect the exempt status of the human research, please submit a modification request to the IRB. Guidance on submitting Modifications and Administrative Check-in are detailed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system. When you have completed your research, please submit a Study Closure request so that IRB records will be accurate.

If you have any questions, please contact the UCF IRB at 407-823-2901 or irb@ucf.edu. Please include your project title and IRB number in all correspondence with this office.

Sincerely,

A handwritten signature in black ink, appearing to read 'Racine Jacques'.

Racine Jacques, Ph.D.
Designated Reviewer

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