The Joint Effects of Personality and Workplace Social Exchange Relationships
in Predicting Task Performance and Citizenship Performance

Dishan Kamdar
Department of Management
Indian School of Business
ISB Campus, Gachibowli,
Hyderabad 500 032,
India
Tel: 91-40-2318 7129
Fax 91-40-2300 7038
Email: Dishan_Kamdar@isb.edu

Linn Van Dyne
The Eli Broad Graduate School of Management.
Michigan State University
N424 North Business Complex
East Lansing, MI 48824-1122
Tel: (517) 432-3512.
Fax:
Email: vandyne@msu.edu

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Abstract

This field study examines the joint effects of social exchange relationships at work (LMX: leader-member exchange and TMX: team-member exchange) and employee personality (conscientiousness and agreeableness) in predicting task performance and citizenship performance. Consistent with Trait Activation Theory, matched data on 230 employees, their coworkers and their supervisors demonstrated interactions where high quality social exchange relationships weakened the positive relationships between personality and performance. Results demonstrate the benefits of consonant predictions where predictors and outcomes are matched based on specific targets. We discuss theoretical and practical implications.
Existing research has demonstrated the importance of personality characteristics and social exchange relationships as predictors of task and citizenship performance (Barrick & Mount, 1991; Eisenberger, Fasolo, & Davis-LaMastro, 1990; Judge & Ilies, 2002; LePine & Van Dyne, 2001; Settoon, Bennett, & Liden, 1996). To date, however, consideration of personality characteristics and social exchange relationships as predictors of employee performance has been addressed in two predominantly separate literatures. Additionally, while teams are increasingly important in organizations (Ilgen, 1999) and the construct of team member exchange was introduced over fifteen years ago (Seers, 1989), we are aware of no research that simultaneously examines leader member exchange (LMX) and team member exchange (TMX) relationships as predictors of employee task and citizenship performance.

Emphasizing the benefits of integrative research that simultaneously considers personality and social exchange predictors of performance, this field study has two primary purposes. First, we develop and test theoretical arguments that two personality characteristics (conscientiousness and agreeableness) and two social exchange relationships (LMX and TMX) interact to predict task performance and helping behavior of professionals working in teams. More specifically, based on Trait Activation Theory (Tett & Burnett, 2003), we propose and demonstrate interactions where high quality social exchange relationships weaken the positive effects of personality on performance. Second, drawing on Ajzen’s (1988) principle of compatibility, we argue that LMX has special relevance to behaviors targeted at the supervisor and TMX has special relevance to behaviors targeted at coworkers. Thus, we extend past research that has demonstrated differential effects of LMX and Perceived Organizational Support (POS: Masterson, Lewis, Goldman, & Taylor, 2000: Settoon et al., 1996) by considering interactive effects of personality and LMX in predicting outcomes targeted at the supervisor as
well as interactive effects of personality and TMX in predicting outcomes targeted at peers.

We first define task and citizenship performance. We then consider personality and quality of exchange relationships as predictors of task and citizenship performance. Finally, we integrate work on personality and exchange relationships, arguing that quality of exchange relationships moderates the effects of personality on task and citizenship performance.

**Task Performance and Citizenship Performance**

Performance is a complex, multi-dimensional construct (Campbell, 1999). As such, fine-grained conceptualizations can provide a better understanding of relationships between specific predictors and specific aspects of performance (Hogan & Holland, 2003; Johnson, 2001; Podsakoff, MacKenzie, Paine, & Bachrach, 2000; Rotundo & Sackett, 2002). Since our research focused on engineering professionals working in teams, we focused on two types of performance critical to working in groups (Borman & Motowidlo, 1993, 1997; Coleman & Borman, 2000; Organ, 1997; Van Scotter & Motowidlo, 1996): task performance and citizenship performance.

Task performance is typically defined as behavior that (a) transforms raw materials into goods and services produced by the organization or (b) serves and maintains the technical core by replenishing supplies, distributing products, planning, coordination, and supervising directed at efficient functioning of the organization (Motowidlo, Borman, & Schmit, 1997). While clearly important, task performance is only part of the picture when people work in teams. Equally important is citizenship performance, defined as behavior that maintains or improves the social and psychological context within which core tasks are performed (Borman & Motowidlo, 1993).

Scholars have identified various forms of citizenship, but most commonly have focused on a form of citizenship known as helping behavior (LePine, Erez, & Johnson, 2002; Organ, 1988; Van Dyne, Cummings, & McLean Parks, 1995; Williams & Anderson, 1991). Although
initial research on citizenship emphasized helping in general (Smith, Organ, & Near, 1983), more recent research has focused on particular targets of citizenship. This includes specific citizenship behaviors targeted toward individuals versus the organization (McNeely & Meglino, 1994; Williams & Anderson, 1991), the union compared to other union members (Aryee & Chay, 2001), and the person versus the task (Lee, 2002; Settoon & Mossholder, 2002). More specifically, Anderson and Williams (1996) and Bowler and Brass (2005) focused on interpersonally-oriented helping. Continuing this trend, we examine citizenship performance directed at supervisors and coworkers. In the interests of parsimony, we refer to these two types of citizenship performance simply as helping supervisors and helping coworkers.

We chose our focus on helping directed at supervisors and coworkers for two reasons. First, both supervisors and coworkers are important interaction partners for those who work in groups. Second, Ajzen’s (1988) principle of compatibility argues that matching predictors and outcomes in terms of context, action, time, or target leads to stronger relationships (c.f. Fisher, 1980; Harrison, Newman, & Roth, 2006). Drawing on this principle, we propose that LMX has special relevance to behaviors targeted at the supervisor and TMX has special relevance to behaviors targeted at coworkers. Focusing on these two targets of helping allows us to test the hypothesis that the quality of an employee’s relationship with the supervisor should be a better predictor of behavior directed at the supervisor, while the quality of an employee’s relationship with peers should be a better predictor of behaviors directed at coworkers. Before outlining the effects of leader-member and team-member exchange, we first consider two major dimensions of personality as predictors of task performance and helping behavior. Thus, we aim to integrate research that has typically examined these relationships in separate studies.

**Personality, Task Performance, and Helping**
A great deal of research has examined relationships between personality and task performance (Judge & Ilies, 2002), with recent emphasis on the Five-Factor Model (FFM) of personality as a parsimonious organizing framework (Barrick & Mount, 1991; Hogan, Hogan, & Roberts, 1996; Mount, Barrick, & Stewart, 1998). Building on this foundation, at least two studies demonstrate especially strong relationships between personality and behavior when specific aspects of personality are linked with theoretically relevant outcomes (Colbert, Mount, Harter, Witt, & Barrick, 2004; Tett, Jackson, & Rothstein, 1991). In the current research, we focus on the role of conscientiousness and agreeableness, two aspects of the FFM that have been consistently linked to OCB in past research (Ilies, Scott, & Judge, 2006) and should be especially relevant to the task performance and citizenship behavior of professionals working in teams.

Personality can be conceptualized in different ways. Genotypic traits, such as emotions and cognitions, cannot be observed and must be inferred. In contrast, phenotypic traits can be directly observed. According to Johnson (1997), self-ratings of genotypic traits is potentially more valid than other-ratings because people may directly experience their own inner traits whereas observers must infer them from verbal reports and non verbal behaviors. In contrast, observer ratings of phenotypic traits, often referred to as reputation, are almost always more valid than self-ratings (Johnson, 1997). Consistent with this perspective, Hogan (2003) categorized self-report of personality as an indicator of identity and observer-report of personality as an indicator of reputation. According to Hogan, Hogan, and Roberts (1996), reputation, which is ratings by knowledgeable others, is the best way to conceptualize personality (c.f., Barrick et al., 2001).

Consistent with this, Mount, Barrick, and Strauss (1994) reported strong results using supervisors, coworkers, and customers as observers of personality in predicting job performance.
Building on this, Barrick and colleagues (2001) cautioned researchers about the potential dangers of using self-report of personality and recommended future research using observer ratings of personality. Likewise, Organ Podsakoff and MacKenzie (2006) recommended that future research use observer ratings of personality to avoid possible self presentation bias. In response to these issues, we adopted a phenotypic approach to personality and conceptualized conscientiousness and agreeableness based on the observer perspective.

**Conscientiousness and Task Performance.** Those who are high in conscientiousness are dependable, careful, thorough, responsible, organized, achievement-oriented, and planful (Mount & Barrick, 1995). Thus, it is not surprising that conscientiousness is the most consistent personality predictor of job performance (Barrick & Mount, 1991). As Barrick, Mount, and Judge (2001) suggest, it is hard to imagine a job where being careless, irresponsible, lazy, impulsive, and low in achievement striving (low conscientiousness) would have positive implications for performance. Several meta-analyses demonstrate consistent relationships between conscientiousness and task performance (typically .20 - .31) across various occupational groups (Barrick & Mount, 1991; Hough, Eaton, Dunnette, Kamp, & McCloy, 1990; Hurtz & Donovan, 2000; Salgado, 1997; Tett et al., 1991). Thus, we hypothesized

*H1a: Conscientiousness will be positively related to task performance.*

**Conscientiousness and Helping Behavior.** Commenting on prior conscientiousness-performance research, Hurtz and Donovan (2000) noted the need for research on personality and different types of performance. Thus, we also consider conscientiousness as a predictor of two forms of citizenship performance: helping supervisors and helping coworkers. Existing research demonstrates a positive relationship between conscientiousness and citizenship performance (Hattrup, O’Connell, & Wingate, 1998; LePine & Van Dyne, 2001; Van Scotter &
More directly relevant, past research has shown that conscientiousness predicts higher levels of altruism (Kovovsky & Organ, 1996) and volunteering for extra work (Motowidlo & Van Scotter, 1994).

While informative, many citizenship performance studies do not specify the target of citizenship (cf., Lee & Allen, 2002; McNeely & Meglino, 1994), and scales meant to assess citizenship often include items that benefit supervisors and/or coworkers (Anderson & Williams, 1996; Settoon et al., 1996; Smith et al., 1983; Williams & Anderson, 1991). Although this research has been insightful, more precise specification of the target of citizenship would enhance our understanding of citizenship behavior because different psychological mechanisms may motivate behavior directed toward different exchange partners. Thus, we explicitly differentiate helping supervisors and helping coworkers. Although we make parallel predictions regarding the relationship between these two types of helping and personality, we subsequently argue that the two forms of helping will show different relationships with the quality of leader-member and team-member exchange relationships.

Since supervisors assign, coordinate, and monitor employee work behaviors, they are an obvious target of helping for those with high conscientiousness. Consistent with this, Organ (1988) and Podsakoff et al. (2000) emphasized helping citizenship as behavior that allows managers to devote more time to planning, scheduling, and problem solving. Indeed, most measures of citizenship behavior include items with obvious positive benefits to supervisors, such as volunteering to orient new employees, offering to take on additional assignments, or helping others who have heavy workloads (e.g., Settoon et al., 1996; Smith et al., 1983). Thus,

\[ H1b: \text{Conscientiousness will be positively related to helping supervisors.} \]

We also expect a positive relationship between conscientiousness and helping coworkers.
because our study focuses on professionals working in teams. When work is interdependent, as in teams, coworkers are an obvious target of helping for those with high conscientiousness. Consistent with this, Organ (1988) and Podsakoff and colleagues (2000) argued that helping enhances coordination and coworker productivity. Several empirical studies provide indirect support for the prediction that conscientiousness should predict helping coworkers (Hough, 1992; Johnson, 2001). For example, past studies have shown that conscientiousness predicts cooperative behavior directed specifically at other group members in a team setting (LePine & Van Dyne, 2001) as well as helping and cooperation with other coworkers (Motowidlo & Van Scotter, 1994; Van Scotter & Motowidlo, 1996). Accordingly, we predicted

\[ H1c: \text{Conscientiousness will be positively related to helping coworkers.} \]

**Agreeableness and Task Performance.** Those who are high in agreeableness are good-natured, flexible, cooperative, caring, courteous, trusting, and tolerant (Mount & Barrick, 1995). To date, theory and research on agreeableness and task performance have been inconsistent. Although Barrick and Mount (1991) proposed that agreeableness would predict task performance for jobs involving frequent interaction or cooperation with others (such as management or sales), results of several meta-analyses have demonstrated that agreeableness was not an important predictor of job performance, even in those jobs containing a large social component (e.g., sales or management). Consistent with this, Borman, White, and Dorsey (1995) reported that likeability had little effect on task performance; LePine and Van Dyne (2001) showed no relationship between agreeableness and task performance on a laboratory task where performance was operationalized as decision making accuracy; and at least three meta-analyses have failed to show a consistent relationship between agreeableness and task performance (Hough et al., 1990; Hurtz & Donovan, 2002; Salgado, 1997). Commenting on these findings,
Johnson (2003) noted that agreeableness may predict task performance in some jobs but not in others. In sum, based on these past null relationships and Barrick and Mount’s (1991) suggestion that agreeableness has less relevance to performance of engineers compared to those in sales or management, we did not posit a relationship between agreeableness and task performance in our sample of engineers.

**Agreeableness and Helping.** Although we did not predict a relationship between agreeableness and task performance, we expected that agreeableness would predict helping behavior. According to Barrick, Stewart, Neubert, and Mount (1998), agreeableness may be one of the best personality predictors of helping behavior. Those who are generally cooperative, flexible, caring, and tolerant are dispositionally predisposed to be helpful.

In work settings, supervisors are a natural target and beneficiary of this helping. This is because supervisors are proximal and salient to employees. Supervisors influence hiring, performance review, and promotion outcomes. They also assign and monitor work and provide evaluative and developmental feedback. For these reasons, employees who are dispositionally cooperative should naturally target helping at the supervisor. Consistent with this, Johnson (2001) demonstrated that employees high in agreeableness were cooperative and followed rules and procedures. These are behaviors with positive benefits for supervisors because it relieves them of more routine aspects of the job (Podsakoff et al., 2000). Thus, we predicted

*H2a: Agreeableness will be positively related to helping supervisors.*

We also suggest that agreeableness will predict helping coworkers. When employees work in teams, those who are dispositionally cooperative will be aware of opportunities to help others and they will target citizenship behaviors at their coworkers. In support of this, Hough (1992) and Borman and Motowidlo (1993) demonstrated significant relationships between
agreeableness and teamwork, while Johnson (2001) and LePine and Van Dyne (2001) demonstrated positive relationships between agreeableness and cooperative behavior directed at other group members (see also Hurtz & Donovan, 2000; Van Scotter & Motowidlo, 1996). Thus,

\[ H2b: \text{Agreeableness will be positively related to helping coworkers.} \]

Social Exchange Relationships: Leader-Member vs. Team-Member Exchange

Social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960) describe social exchange as an open-ended stream of transactions, with both exchange partners making contributions and receiving benefits. These exchanges are open-ended because the form and timing of contributions is discretionary (Bateman & Organ, 1983; Konovsky & Pugh, 1994; Organ, 1988). Social exchange contrasts with economic exchange which specifies exchanges on a quid pro quo basis. Two of the most important exchange relationships in organizations are LMX (leader-member exchange between employee and supervisor) and TMX (team-member exchange between employee and coworkers).

As noted earlier, we have chosen to focus on the roles of LMX and TMX in the same study to enhance understanding of relationships between specific predictors and specific aspects of performance. Ajzen (1988) introduced the principle of compatibility and theorized that correspondence between the target of an attitude and a related behavior enhances attitude-behavior relationships. Other scholars have made similar points about strength of relationships between constructs that are matched in specificity (Fisher, 1980) or between constructs conceptualized at similar levels of abstraction (Harrison et al., 2006). Drawing on work of these scholars, we propose that attitudes about supervisor relationships (LMX) will be a better predictor than TMX of behaviors targeted at the supervisor; while attitudes about coworker relationships (TMX) will be a better predictor than LMX of behaviors targeted at coworkers.
**LMX and Task Performance.** The quality of the exchange relationship between an employee and supervisor is referred to as LMX or leader-member exchange (Liden, Sparrowe, & Wayne, 1997). LMX theory proposes that leaders have differential relationships with specific subordinates (Dansereau, Graen, & Haga, 1975) and the quality of LMX relationships influences attitudes and behaviors at work. High quality LMX relationships are personal, intangible, and open-ended. Low quality LMX relationships are relatively impersonal economic exchanges.

When employees have high quality LMX relationships, they value this personal relationship and they reciprocate by responding positively to demanding work expectations. When work is complex and situations are dynamic, the personal commitment characteristic of high quality LMX relationships should enhance task performance. Research demonstrates that those with high quality LMX relationships feel the need to reciprocate and show they value the relationship they have with the supervisor (Scandura & Schriesheim, 1994; Seers & Graen, 1994; Wayne, Shore, & Liden, 1997). Since task performance is the traditional and primary focus of work exchange relationships, we propose a positive relationship between LMX and task performance. Consistent with this, Gerstner and Day’s (1997) meta-analysis and other studies (e.g., Bauer, Erdogan, Liden, & Wayne, 2006; Klein & Kim, 1998; Liden, Wayne, & Stilwell, 1993) have demonstrated positive relationships between LMX and task performance. Thus,

\[ H3a: \text{LMX will be positively related to task performance}. \]

**LMX and Helping Supervisors.** When employees have high quality exchange relationships with the supervisor, they reciprocate the special treatment based on the norm of reciprocity (Liden & Graen, 1980; Settoon et al., 1996; Wayne & Green, 1993). The most natural and salient target is the other partner in the exchange relationship (Gouldner, 1960). Thus, we predict those with high LMX reciprocate by going beyond specific job expectations and
engaging in behaviors that help the supervisor (Liden et al., 1997; Wayne et al., 1997).

**H3b: LMX will be positively related to helping supervisors.**

**TMX and Helping Coworkers.** Team member exchange is the quality of exchange relationships among coworkers in the work group (Seers, 1989). High quality TMX relationships, like high quality LMX, represent social exchange characterized by flexibility, discretion, and open-ended relationships. To date, there has been little research on TMX and performance (see Liden, Wayne, & Sparrowe, 2000 for an exception). This is an important gap in the literature because teams are ubiquitous in organizations and these proximal coworker relationships can have powerful implications for employee attitudes and behaviors at work (Ilgen, 1999). Specifically, we predict those with high quality TMX will reciprocate toward coworkers to show they value these social exchange relationships. In interdependent work groups, helping coworkers is an obvious and natural form of reciprocity.

Although we are not aware of research that explicitly demonstrates a relationship between TMX and helping coworkers, three studies provide indirect support for this prediction. Settoon and Mossholder’s (2002) field data from two organizations showed positive relationships between coworker support and citizenship behavior directed at peers. Bowler and Brass (2005) demonstrated that strength of friendship between coworkers positively predicted interpersonal citizenship behaviors, and Bommer, Miles, and Grover (2003) demonstrated that the overall level of citizenship in a group, an indicator of the quality of peer relationships, predicted individual citizenship. Given that the norm of reciprocity guides behavior toward relationship partners (Gouldner, 1960), we expect that the quality of coworker exchange relationships (TMX) will have special relevance to helping coworkers. Thus, we predicted

**H4: TMX will be positively related to helping coworkers.**
Joint Effects of Personality and Social Exchange

Having considered the above main effects, we now focus on interactions between personality and social exchange relationships in predicting task performance and helping. According to Trait Activation Theory (Tett & Burnett, 2003), perceptions of the situation moderate the effect of personality on job performance. More specifically, Tett and Burnett proposed that powerful reward contingencies in specific situations can wash-out the effects of personality. Consistent with this, Colbert and colleagues (2004) demonstrated that conscientiousness predicted deviant work behavior only when the situation was perceived negatively. In a similar vein, Hochwater, Witt, Treadway, and Ferris (2005) demonstrated that individual differences in social skills predicted job performance only when employees reported a low degree of perceived organizational support. Applying Trait Activation Theory to the current context, we propose that personality will predict task performance and helping only when social exchange relationships are poor quality. Our reasoning is that high quality social exchange relationships trigger the reciprocity norm (Gouldner, 1960) which is a powerful reward contingency that constrains the expression of personality.

We first consider conscientiousness. We have argued that conscientiousness should predict task performance, as well as helping coworkers and supervisors. In theory, conscientiousness should lead to better performance because people high in conscientiousness are motivated to work hard and do a good job. By comparison, people low in conscientiousness do not have these inherent motivations. This does not mean that those with low conscientiousness never do a good job. It simply means that these employees may need other incentives to motivate them for high productivity. One likely candidate is a strong or high quality exchange relationship. Thus, employees low in conscientiousness may still be high in job
performance and helping based on their desire to reciprocate favorable treatment by superiors or coworkers. This reasoning suggests that employees high in conscientiousness should be relatively unaffected by the quality of their exchange relationships, while those low in conscientiousness will show higher task performance and helping when the quality of their relationships is high.

A similar argument can be made for agreeableness and helping. In theory, highly agreeable employees should be motivated to engage in behaviors that help their superiors and coworkers based on concern for the other’s well-being. Moreover, because tolerance and empathy are core elements of agreeableness, those high in agreeableness should be better able than those low in agreeableness to tolerate negative interpersonal treatment. For example, highly agreeable employees may be more inclined to overlook small annoyances and/or recognize that others occasionally may have a bad day. As a result, highly agreeable employees should be less influenced by the quality of their social exchange relationships. In comparison, those who are low in agreeableness do not have these natural inclinations and most likely need other incentives to motivate helping, such as the sense that relationship partners are trustworthy. This line of reasoning suggests that the helping of highly agreeable employees will be relatively insensitive to the quality of their exchange relationships, while those who are low in agreeableness will respond to positive exchange relationships by helping their exchange partners.

Taken together, this line of reasoning led us to propose the following interaction hypotheses, each of which suggests that personality will have a stronger effect when the quality of the social exchange relationship is low. Throughout the hypotheses, in keeping with our earlier arguments, we assume that LMX will have relevance only for behaviors directed at the supervisor (task performance and supervisor helping), while TMX will have relevance only for
behaviors directed at co-workers. The interaction hypotheses are listed in order of the earlier main effect predictions.

*H5: LMX will moderate the relationship between conscientiousness and task performance such that the relationship will be stronger when LMX is low.*

*H6: LMX will moderate the relationship between personality (H6a: conscientiousness; H6b agreeableness) and helping supervisors such that the relationship will be stronger when LMX is low.*

*H7: TMX will moderate the relationship between personality (H7a: conscientiousness; H7b agreeableness) and helping coworkers such that the relationship will be stronger when TMX is low.*

**Method**

We examined these research questions with matched field data from 230 engineers, their supervisors (n=30), and their peers (n=90) from one division of a multi-national conglomerate (85% response rate). The employee sample was 96% male and 100% full-time; all participants had a minimum of six months tenure in their current work group. On average, employees were age 32 (range: 23-45) with 5.5 years organizational tenure. Ninety-one percent had at least a bachelor’s degree, and the remaining 9% were high school graduates. Supervisors were 100% male and 100% full-time. On average, supervisors were age 40 (range: 34-46), with 11 years tenure, 17 years of full-time work experience, and 98% had at least a bachelor’s degree.

As part of a larger study on work attitudes and behavior, employees completed surveys in group meetings held at company facilities. Participants were assured individual responses would
remain confidential and they could withdraw at any time. Employee questionnaires included LMX, TMX, age, sex, education, and organizational tenure.

While employees were completing their surveys, supervisors completed questionnaires on employee task performance and helping supervisor citizenship performance in a separate room. In each group, we also randomly selected one coworker with at least six months tenure in the group to rate other group members on helping coworkers citizenship performance. Finally, we randomly selected two other coworkers with at least six months tenure in the group to rate agreeableness and conscientiousness of others in the group. These three randomly selected coworkers did not complete the self-report questionnaire and are not included in the 230 engineers who are focal study participants. We used peers to assess personality and coworker citizenship performance because their proximal relationships should allow them to make inferences about dispositional characteristics and typical helping within the work group. Overall, we collected data from 30 groups (8-16 members, average size = 10.6 employees).

Measures

We used previously published and validated measures in this study.

Supervisors rated employee task performance with six items (e.g., quantity, quality, relationships, dependability, and initiative; $\alpha=.85$) from Van Dyne and LePine (1998). Response options ranged from 1 – Very much does not meet performance expectations to 7 – Very much exceeds performance expectations. For all the other measures, response options ranged from 1 – strongly disagree to 7 – strongly agree. Supervisors also rated employee helping supervisors with Van Dyne and LePine’s (1998) 7-item scale (e.g., This particular employee helps me with my work responsibilities; $\alpha=.88$).

Peers rated helping coworkers with Van Dyne and LePine’s (1998) 7-item scale (e.g.,
This particular employee helps others in the group with their work; $\alpha = .91$).

**Coworker Ratings of Employee Personality.** Following recommendations of Barrick and colleagues (2001; cf. Mount, Barrick, & Strauss 1994; Organ, Podsakoff, & MacKenzie, 2006), we used coworker assessment of personality rather than self-report to reduce potential social desirability, faking, and impression management bias. We measured *conscientiousness* (e.g., This coworker performs all tasks assigned to him/her conscientiously) and *agreeableness* (e.g., This coworker would rather cooperate with others than compete with them) with 12 items each (NEO PI-R: Costa & McCrae, 1992). Since two coworkers rated employee personality, we assessed inter-rater reliability (Shrout & Fleiss, 1979) using ICC (1,1) to determine whether it was appropriate to create an average rating for each pair of coworker. This form of intraclass correlation provides a point estimate of the agreement between ratings made by two or more judges (James, 1982; c.f. Morrison & Phelps, 1999). Results were .36 ($p<.001$) for conscientiousness and .36 ($p<.001$) for agreeableness. In addition, correlations between rater scores for agreeableness ($r = .37$, $p<.001$) and conscientiousness ($r = .38$, $p<.001$) were moderately strong. We therefore averaged peer ratings for measures of conscientiousness ($\alpha = .92$) and agreeableness ($\alpha = .93$).

Since supervisors and coworkers rated task performance and citizenship for multiple employees (average number of ratings= 7.6, min=5, max=13), we checked for the possible presence of group-level effects (Bliese, 2000). A one-way analysis-of-variance showed no differences in mean helping supervisor or task performance assessments across supervisors. In addition, ICC(1) scores, which index the amount of variance explained by supervisor-level effects, did not exceed .08. Finally, ICC(2) scores for supervisor-rated outcomes which index the extent to which rating of one employee is substitutable for rating of another, were also low (<
.44) and did not reach the .70 benchmark for aggregation (Klein et al., 2000). These findings provide robust support for the independence of supervisor assessments. We conducted similar analyses for coworker ratings of helping coworkers. A one-way analysis-of-variance showed no differences in mean helping coworker assessments across coworkers. Results (ICC(1)=.04; ICC(2) =.27) indicate the independence of coworker assessments. In addition, no mean Rwg values exceeded .70 (James, Demaree, & Wolf, 1984). We thus analyzed data at the individual level, as planned.

*LMX.* We assessed LMX with Liden and Maslyn’s (1998) 12-item scale (e.g., I like my supervisor very much as a person, My supervisor would defend me to others in the organization if I made an honest mistake, My supervisor does work for me that goes beyond what is specified in his/her job description, and I admire my supervisor's work related skills; $\alpha = .91$).

*TMX.* We assessed TMX with Seer’s (1989) 10-item scale (e.g., I am flexible about switching jobs with others in my work group, Other group members recognize my potential, Other group members understand my problems, I am willing to finish work assigned to others, Others are willing to finish work assigned to me; $\alpha = .89$).

*Control Variables.* We controlled for age, sex, (0=female, 1=male), education (0=high school, 1=college degree, 2=graduate degree), and organization tenure (years) to avoid potential confounding effects on our dependent variables (Van Dyne & LePine, 1998).

**Analyses**

We assessed discriminant validity of our constructs with confirmatory factor analysis (CFA). Given the large number of items (67) relative to sample size (230), we followed procedures described by Mathieu and Farr (1991) and created three to four composite indicators for each construct to improve the size-to-estimator ratio (e.g., Landis, Beal, & Tesluk, 2000).
Our hypothesized 7-factor model (task performance, helping supervisors, helping coworkers, LMX, TMX, conscientiousness, and agreeableness) had excellent fit to the observed covariance matrix ($\chi^2 = 348.19$, df = 224; $\chi^2/df = 1.55$; CFI = .96; TLI = .96; RMSEA = .05), with significant standardized factor loadings (.35-.92, $p< .001$).

We compared the fit of this 7-factor model to a series of conceptually reasonable competing models. Table 1 summarizes these results and shows that Model 1 (7 factors) had the best fit. Model 1 was a significantly better fit than Model 2 with a 1-factor approach ($\Delta \chi^2 = 1517.51$, $p<.001$). Model 1 was significantly better than Model 3 with 2-factors that contrasted employee-rated and supervisor-rated constructs ($\Delta \chi^2 = 1378.59$, $p<.001$). Model 1 (7-factors) was also significantly better than other plausible three, four, five, and six factor models (see Table 1 for details). We retained Model 1 because it reflected our hypothesized approach, fit the data well (RMSEA=.05), and was most parsimonious.

We assessed convergent and discriminant validity with average variance extracted (AVE) for each construct and whether the squared inter-construct correlations for pairs of constructs were greater than the average shared variance of each construct (Fornell & Larcker, 1981; Netemeyer, Johnson, & Burton, 1990). According to Fornell and Larcker, evidence for convergent validity is provided if AVE is greater than .50. Our AVE ranged from .59 to .85, providing strong support for convergent validity. In addition, all average shared variance figures (AVE) were greater than squared inter-construct correlations (.06 - .28). This provides rigorous support for discriminant validity of our constructs.

We analyzed hypotheses with hierarchical regression and entered controls in step 1, centered main effects for personality in step 2, and centered main effects for LMX and TMX in step 3. The VIF statistics (1.04-3.69) were below 10, suggesting no multicollinearity problems.
We entered interactions in step 4 (Cohen et al., 2003) and illustrated significant interactions with SPSS, using general linear models and marginal means.

**Results**

Table 2 presents the descriptive statistics, correlations, and reliability estimates. Table 3 summarizes the regression results.

Hypothesis 1 was supported. Conscientiousness positively predicted task performance ($H1a: \beta = 0.30, t(217) = 4.54, p < 0.001$), helping supervisors ($H1b: \beta = 0.19, t(217) = 2.89, p < 0.01$), and helping coworkers ($H1c: \beta = 0.20, t(217) = 3.39, p < 0.01$). Results also support $H2$, demonstrating a significant relationship between agreeableness and helping supervisors ($H2a: \beta = 0.28, t(216) = 4.35, p < 0.001$) and helping coworkers ($H2b: \beta = 0.47, t(217) = 8.05, p < 0.001$).

$H3$ was supported by the positive relationship between LMX and task performance ($H3a: \beta = 0.27, t(217) = 4.20, p < 0.001$) and between LMX and helping supervisors ($H3b: \beta = 0.27, t(217) = 4.37, p < 0.001$). Consistent with our predictions, results also support $H4$, demonstrating a positive relationship between TMX and helping coworkers ($H4: \beta = 0.20, t(217) = 3.13, p < 0.01$).

Hypothesis $5$ predicted that LMX would weaken the positive relationship between conscientiousness and task performance, such that the relationship would be stronger for low LMX. The task performance regression in Table 3 shows the interaction in step four was significant ($H5: \beta = -0.18, t(217) = -2.77, p < 0.01$) with a significant increase in overall explained variance ($\Delta R^2 = 0.06; \Delta F(4, 217) = 4.71, p < 0.01$). We plotted this interaction based on Cohen, Cohen, West, and Aiken (2003) and report regression slopes for low (-1 standard deviation) and high (+1 standard deviation) levels of the moderators. As illustrated in Figure 1a, high LMX weakened the positive relationship between conscientiousness and task performance, supporting $H5$. We also note an unexpected significant interaction between LMX and agreeableness in
predicting task performance ($\beta=-.17, t(217) = -2.94, p<.01$). Figure 1b illustrates this interaction, showing no main effect for agreeableness, but a positive relationship between agreeableness and task performance when LMX is low.

Hypothesis 6 predicted interactions between LMX and personality, as represented by conscientiousness and agreeableness, as predictors of helping supervisors. Results show two significant interactions (H6a: conscientiousness $\beta=-.17, t(217) = -2.81, p<.01$; H6b agreeableness $\beta=-.19, t(217) = -3.26, p<.01$) with a significant increase in overall explained variance ($\Delta R^2 = .07; \Delta F(4, 217)=5.87, p<.001$). Figure 2 illustrates these interactions, showing that LMX weakened the positive relationships between personality and helping supervisors, such that relationships were stronger for low LMX. Thus, results support H6.

Our final hypothesis (H7) predicted TMX would interact with personality, as represented by conscientiousness and agreeableness, to influence helping coworkers. Results demonstrate two significant interactions (H7a: conscientiousness $\beta=-.13, t(217) = -2.08, p<.05$; H7b: agreeableness $\beta=-.19, t(217) = -3.44, p<.01$) and a significant increase in overall explained variance ($\Delta R^2 = .06; \Delta F(4, 217)=5.58, p<.001$). Figure 3 illustrates the interactions, demonstrating that TMX moderated the relationship between personality and helping coworkers, with a more positive slope for low TMX than high TMX; thus supporting H7.

Discussion

This field study had two primary objectives. First, we integrated previously separate literatures and demonstrated interactive effects between two personality characteristics and two social exchange relationships in predicting specific aspects of work performance. Results support Trait Activation Theory (Tett & Burnett, 2003), demonstrating that high quality social exchange relationships weaken the positive effects of personality on performance. This finding provides
insight into conditions when personality is more likely to make a difference in work behaviors. It also responds to calls for research that examines personality and the norm of reciprocity (Colbert et al., 2004; Kamdar, McAllister, & Turban, 2006). Second, we emphasized the importance of matching predictor and outcome constructs (Ajzen, 1988) based on specific target of the behavior. Consistent with our predictions, LMX interacted with personality to predict behaviors targeted at the supervisor and TMX interacted with personality to predict citizenship behavior targeted at coworkers. As expected, none of the TMX interactions predicted behaviors targeted at the supervisor and none of the LMX interactions predicted behavior targeted at coworkers.

Interestingly, results demonstrated one unexpected interaction. As illustrated in Figure 1b, agreeableness interacted with LMX to predict task performance. Unlike the other interactions, however, where high quality exchange relationships weakened the positive relationships between personality and performance, regression results show a different pattern of results. As expected, there is no main effect for agreeableness in predicting task performance ($\beta= .09, p>.05$). In addition, results show a positive relationship between agreeableness and task performance when LMX is low ($\beta = 0.325, t = 3.509, p = .001$) and no significant negative relationship between agreeableness and task performance when LMX is high ($\beta = -.014, t = -.163, p = .871$). Should other researchers replicate this finding, this interaction suggests that the quality of LMX exchange relationships may be critical for predicting performance of those who are low in agreeableness.

Theoretical Implications

Results of our research have several important theoretical implications. First, results demonstrate that perceptions of social exchange relationships (Colbert et al., 2004; Tett &
Burnett, 2003) moderate the personality - work performance relationship, such that personality is an important predictor for those who have poor quality relationships. When employees have high quality work relationships, this proximal influence neutralizes the role of personality. This suggests that high quality social exchange relationships can compensate for potentially negative consequences of problematic personality traits such as low conscientiousness or low agreeableness. We note that all the interactions conformed to this same pattern. Because measures of work behavior were obtained from both supervisors and coworkers, this consistency in the form of the interactions strengthens our confidence in the results.

Second, this study integrates prior research streams by simultaneously examining personality and quality of exchange relationships as predictors of three different types of work behavior. In addition, and perhaps more important, results show significant relationships for specific predictors of task performance, helping supervisors, and helping coworkers — based on consonant conceptualizations where predictors are matched to targets of behavior. Conscientiousness, but not agreeableness, and LMX, but not TXM, predicted task performance. Personality and LMX predicted helping supervisors, while personality and TMX predicted helping coworkers. In addition, these results enhance our understanding of when personality influences work behaviors. Third, results should facilitate the accumulation of research findings (LePine et al., 2002) by providing empirical evidence that task performance, helping supervisors, and helping coworkers are different constructs, with different antecedents.

Practical Implications

Results also have important practical implications. As demonstrated by past research, organizations can enhance task performance by recruiting employees who are high in conscientiousness and by encouraging supervisors to develop close, supportive relationships with
subordinates. Moving beyond past research, results also demonstrate that high quality social exchange relationships can compensate for less desirable personality characteristics. This has important practical implications because managers often inherit employees and do not have the opportunity to select based on personality. In a situation where a manager has an employee who is low in conscientiousness or agreeableness, developing a high quality leader-member exchange relationship is an important and realistic option for enhancing work performance. Similarly, working to strengthen relationships among employees in the work group via TMX can reduce potentially negative effects of low conscientiousness or agreeableness.

**Future Research, Limitations, and Conclusion**

Despite the interesting pattern of findings and the strength of our multi-source design, the study has limitations that should be addressed in future research. First, we used a cross-sectional design and collected data at one point in time. Therefore, we cannot make inferences about the causal direction of relationships and reverse causality cannot be ruled out. Perhaps high performance leads to high quality social exchange relationships. It would be useful to test these relationships in an experimental design to facilitate causal inferences. At the same time, we note that personality is a relatively stable individual difference characteristic. Thus, it is unlikely that work behaviors influenced personality.

Another potential limitation is that our sample was composed primarily of male engineers (96%) in one specific organization. Although engineering is a male-dominated occupation and female engineers represented only 10.9% of the national workforce at the time our data were collected (Kam, 2005), this raises questions about generalizability of the results. Accordingly, we recommend future research on different occupations and on samples with more females. For example, it would be interesting to ascertain if the pattern of results is similar in accounting,
marketing, and general management.

Finally, although we used peer assessments of helping coworkers to avoid mono-method problems, it is important to note that each coworker rated eight to sixteen peers in their own work group. Although we limited our study to employees with a minimum of six months tenure in their current work group, it is possible that some employees knew each other better or had better opportunities to observe coworker helping behavior. Since we did not collect data on how well observer coworkers knew the peers they were rating, future research might examine these relationships, while controlling for rater-ratee relationships. Alternately, future research might consider the length of time peers have worked together as an additional moderator. Perhaps it takes time for high quality relationships to develop and then subsequently compensate for low conscientiousness or low agreeableness.

To conclude, results of this field study with matched data from multiple sources demonstrate the importance of distinguishing types of work performance: task performance, helping supervisors and helping coworkers (Johnson, 2001; Podsakoff et al., 2000; Williams & Anderson, 1991). Furthermore, results show that matching theoretically linked predictors to specific work behaviors enhances our understanding of factors that enhance and constrain specific behaviors at work (Masterson et al., 2000; Settoon et al., 1996). Finally, the consistent pattern of interaction results shows that personality makes a difference in work behavior when social exchange relationships are low quality. We recommend that future research continue to examine personality and perceptions of the situation as joint predictors of other work behaviors.
References


Bliese, P.D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In K.J. Klein and S.W.J. Kozlowski (Eds.), *Multilevel*


### Table 1

*Comparison of Theoretically Plausible Models*

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<tr>
<th>Model</th>
<th>Description</th>
<th>$\chi^2$</th>
<th>df</th>
<th>$\chi^2/df$</th>
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<th>CFI</th>
<th>TLI</th>
<th>RMSEA</th>
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<td>.96</td>
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<td>.17</td>
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<td>.54</td>
<td>.16</td>
<td>1378.59***</td>
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<td>.85</td>
<td>.09</td>
<td>428.06***</td>
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Notes.  *** $p < .001$.

- $^a$ – 2-Factors: employee-rated versus supervisor-rated constructs.
- $^b$ – 3-Factors: LMX and TMX combined; agreeableness and conscientiousness combined; citizenship performance and task performance combined.
- $^c$ – 4-Factors: LMX and TMX combined; agreeableness and conscientiousness combined; helping supervisors and helping coworkers combined; task performance.
- $^d$ – 5-Factors: LMX and TMX combined; agreeableness and conscientiousness combined; helping supervisors; helping coworkers; task performance.
- $^e$ – 6-Factors: LMX and TMX combined; agreeableness; conscientiousness; helping supervisors; helping coworkers; task performance.
- $^f$ – 6-Factors: LMX; TMX; agreeableness and conscientiousness combined; helping supervisors; helping coworkers; task performance.
Table 2

*Means, Standard Deviations, Correlations, and Cronbach’s Alpha*¹

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<td>Agreeableness ⁵</td>
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<td>(.93)</td>
<td></td>
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<td>LMX ⁶</td>
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<td>.04</td>
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<td>.25**</td>
<td>.24**</td>
<td>(.91)</td>
<td></td>
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<tr>
<td>8</td>
<td>TMX ⁶</td>
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<td>1.03</td>
<td>-.01</td>
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<td>.13*</td>
<td>.01</td>
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<td>.35**</td>
<td>.30**</td>
<td>(.91)</td>
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<tr>
<td>9</td>
<td>Task Performance ⁷</td>
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<td>.06</td>
<td>-.01</td>
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<td>(.88)</td>
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<td>Helping Coworkers ⁸</td>
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<td>.39**</td>
<td>.27**</td>
<td>.43**</td>
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¹ Notes. N=230; Cronbach’s alpha on diagonal; ² Sex: 0=female, 1=male; ³ Age: years; ⁴ Education: 0=high school, 1=college degree, 2=graduate degree; ⁵ Coworker (A)-rated; ⁶ Self-rated; ⁷ Supervisor-rated; ⁸ Coworker (B)-rated.  
** p < .01.  * p < .05
### Table 3

**Regression Results for Task Performance, Helping Supervisors, and Helping Coworkers**

<table>
<thead>
<tr>
<th></th>
<th>Task Performance (Supervisor-rated)</th>
<th>Helping Supervisors (Supervisor-rated)</th>
<th>Helping Coworkers (Coworker-rated)</th>
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<td>Organizational Tenure</td>
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<tr>
<td>Education</td>
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<td>-.09</td>
<td>-.05</td>
</tr>
<tr>
<td>Conscientiousness (CO)</td>
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<td>.26***</td>
<td>.30***</td>
</tr>
<tr>
<td>Agreeableness (AG)</td>
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<td>.10</td>
<td>.09</td>
</tr>
<tr>
<td>LMX</td>
<td>.32***</td>
<td>.27***</td>
<td>.33***</td>
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</tr>
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<td>LMX x CO</td>
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<tr>
<td>Δ R²</td>
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<td>.13***</td>
<td>.09***</td>
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<td>Δ F</td>
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<td>F value</td>
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Notes.  
1 Standardized regression weights; 2 Sex: 0=female, 1=male; 3 Education: 0=high school, 1=college degree, 2=graduate degree; 4 Coworker-rated; 5 Self-rated.  
*** p < .001. ** p < .01. * p < .05
**Figure 1. Interactions Predicting Task Performance**

*Figure 1a:* Interaction between LMX and Conscientiousness

![Graph showing the interaction between LMX and Conscientiousness](image1a)

*Figure 1b:* Unexpected Interaction between LMX and Agreeableness

![Graph showing the unexpected interaction between LMX and Agreeableness](image1b)
Figure 2. Interactions Predicting Helping Supervisors

Figure 2 (a): Interaction between LMX and Conscientiousness

![Graph showing the interaction between LMX and Conscientiousness.](image)

Figure 2 (b): Interaction between LMX and Agreeableness

![Graph showing the interaction between LMX and Agreeableness.](image)
Figure 3. Interactions Predicting Helping Coworkers

Figure 3 (a): Interaction between TMX and Conscientiousness

Figure 3 (b): Interaction between TMX and Agreeableness