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ABSTRACT

We proposed that the social exchange relationships individuals form in the workplace would mediate the relation between perceptions of interactional and distributive justice and social loafing. Specifically, we argued that both leader–member exchanges (LMX) and team–member exchanges (TMX) would mediate the relation between interactional justice and social loafing, and that LMX would mediate the relation between distributive justice and social loafing. In a field study, 124 manufacturing employees responded to questionnaires and their immediate supervisors were interviewed. The results indicated significant relationships between interactional justice and LMX, and between interactional justice and TMX. LMX, but not TMX, was negatively related to social loafing. Distributive justice was not significantly related to LMX. Thus no support was found for LMX as a mediator of the relationship between distributive justice and social loafing.

KEYWORDS

distributive justice ■ interactional justice ■ LMX ■ social loafing ■ TMX

Social loafing is the tendency of individuals to reduce effort when they are working in groups (Latané et al., 1979). In addition to group performance, social loafing has been associated with a number of negative outcomes for

groups. For example, Duffy and Shaw (2000) showed that social loafing was negatively related to group cohesiveness and potency, which, in turn, were related to performance, absenteeism, and group satisfaction. Even though social loafing has been linked to important outcomes, studies examining its antecedents have been confined to laboratory settings (see George, 1992, 1995) and may have omitted critical predictors of social loafing in the workplace (Comer, 1995). Therefore, it is important to study antecedents of social loafing in actual work groups.

In a comprehensive model of withholding effort, Kidwell and Bennett (1993) identified rational choice, normative conformity, and affective bonding as alternative motives for engaging in social loafing. When the rational choice motive is operating, individuals withhold effort because they believe that benefits of withholding effort outweigh costs. The normative conformity motive refers to exerting or withholding effort due to perceived group and social norms. Finally, affective bonding refers to exerting effort due to interpersonal relationships with team members and commitment to the team. Researchers adopting a rational choice perspective found that identifiability of individual contributions (Gagne & Zuckerman, 1999); task visibility (George, 1992); potential for evaluation of individual contributions (Harkins, 1987; Karau & Williams, 1994), and incentives for high performance (George, 1995; Miles & Greenberg, 1993; Shepperd & Wright, 1989), were negatively related to social loafing. In addition, researchers examining the effects of social norms found that collectivism was negatively related to social loafing (Earley, 1989; Erez & Somech, 1996). However, studies examining the role of affective bonding, or interpersonal relationships, have been rare, and include laboratory studies showing a negative relation between group cohesiveness and social loafing (Karau & Hart, 1998; Karau & Williams, 1997). Because it is difficult to capture the richness of interpersonal exchanges in lab experiments, there is a need for field research investigating the effects of interpersonal exchanges on social loafing. We contend that the relationships individuals form with their leaders and coworkers represent social exchange relationships that are especially salient with respect to social loafing.

In this study we examine the relations between two types of social exchange relationships (exchanges with leaders and coworkers) and social loafing in actual work groups. Our model, presented in Figure 1, proposes that organizational justice perceptions will be positively related to social exchange relationships, which in turn will be negatively related to social loafing. We focus on two types of justice perceptions as they relate to social exchange relationships. Interactional justice refers to the perceived fairness of interpersonal communication and treatment an individual receives from

others in the organization (Bies & Moag, 1986). Distributive justice refers to the perceived fairness of rewards an individual receives (Greenberg, 1990a). We argue that leader–member exchanges (LMX, Graen & Uhl-Bien, 1995; Liden et al., 1997) and team–member exchanges (TMX, Seers, 1989) mediate the relationship between justice perceptions and social loafing.

Our study contributes to the social loafing, social exchange, and justice literatures in several ways. First, given that there are only a handful of studies examining social loafing in actual work groups, we address one of the limitations of the literature by studying employees in permanent work groups. Second, we examine two variables representing the affective bonding perspective (LMX and TMX) that have been overlooked in prior social loafing research. Third, we make a contribution to the justice, LMX, and TMX literatures by examining social loafing as a possible outcome related to justice and interpersonal exchanges. Finally, justice perceptions have been previously related to LMX, but not to TMX. Examining justice perceptions with respect to both LMX and TMX clarifies the relationships between justice perceptions and different interpersonal relationships.

Justice perceptions and exchange relationships

Justice is a value that is essential to the functioning of modern society. Starting from Aristotle's (trans. 2000) argument suggesting that reward distributions would be fair when they reflect interpersonal differences in merit, researchers attempted to understand how justice perceptions are formed and how they influence individual attitudes and behaviors. Studies of organizational justice demonstrated that perceived fairness of rewards, organizational procedures, and interpersonal treatment are related to individual attitudes and behaviors (Greenberg, 1990a). In contexts such as organizational layoffs (Skarlicki et al., 1998), employee selection (Ployhart

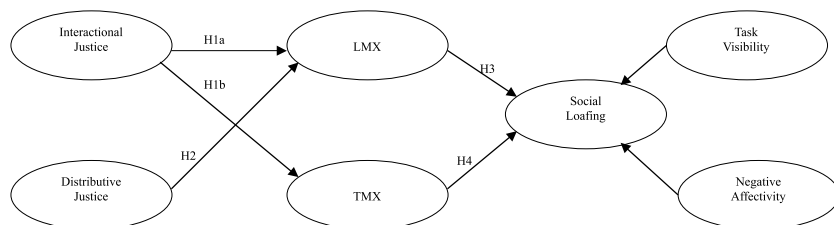


Figure 1 Hypothesized model of the relationship between justice perceptions, exchange relationships, and social loafing

& Ryan, 1997, 1998), and performance appraisals (Taylor et al., 1995), individual reactions were found to be a function of perceptions of fairness. Furthermore, the extent to which individuals perceive justice in the organization was related to positive outcomes such as job satisfaction (Dailey & Kirk, 1992; Tepper, 2000), organizational commitment (Folger & Konovsky, 1989; Konovsky & Cropanzano, 1991), citizenship behaviors (Masterson et al., 2000; Moorman et al., 1998), and actual turnover (Tepper, 2000). Recent research showed that the relationship between justice perceptions and individual behaviors is mediated by social exchange relationships (Masterson et al., 2000). Thus in this section we discuss the links between justice perceptions and social exchange relationships.

LMX theory (see Liden et al., 1997 for a review) argues that leaders do not form uniform relationships with their subordinates. Instead, with some subordinates they form higher quality exchanges that are characterized by trust, affect, and mutual respect, and with others they form lower quality exchanges that do not go beyond interactions required by an individual's role definition. Drawing from LMX theory, Seers (1989) proposed TMX as a parallel construct referring to the exchange quality between employees and their team members. Both types of relationships, LMX and TMX, provide work-related and social support to individuals. For example, LMX quality has been found to be a consistent predictor of job-related attitudes such as organizational commitment and satisfaction with supervision, and behaviors such as performance and organizational citizenship behaviors (Gerstner & Day, 1997; Liden et al., 1997). Relatively fewer studies have examined the effects of TMX on organizational attitudes and behaviors, but results suggest that TMX is related to positive attitudes and behaviors such as job satisfaction (Seers, 1989), organizational commitment, and performance (Liden et al., 2000).

Both LMX and TMX are exchange relationships that draw heavily from social exchange theory (Blau, 1964). Social exchange theory differentiates between 'social' exchanges that involve high levels of obligation, gratitude and trust, and 'economic' exchanges that do not go beyond the terms of the employment contract. LMX and TMX do not adopt the dichotomy of social exchange theory and instead view relationship quality as a continuum. However, both LMX and TMX rely on the social exchange theory argument that as parties perform behaviors that benefit each other, the relationship will become of higher quality, which leads to the desire to reciprocate by behaving in ways that benefit the other party. Thus social exchange theory describes the mechanisms linking justice perceptions to LMX and TMX, and then to individual behaviors.

Social exchange relationships among individuals in organizations

develop as a result of a series of satisfactory interactions between individuals (Uhl-Bien et al., 2000), which build trust and respect. Organizational justice perceptions have been identified as an important factor related to social exchange relationships in the workplace (Masterson et al., 2000; Scandura, 1999). Folger and Cropanzano (1998) argued that individuals identify the responsible party for the perceived justice or injustice and modify their actions accordingly. Once they identify the responsible party, according to social exchange theory (Blau, 1964), individuals develop a desire to reciprocate, leading to the creation of mutual obligation in the relationship. Because justice perceptions may influence the nature of social exchange relationships, we argue that they will be positively related to the quality of the relationships individuals develop with others in the organization. Specifically, we contend that perceived justice attributed to leaders will be positively related to LMX, whereas perceived justice attributed to team members will be positively related to TMX.

Three types of justice perceptions are prevalent in the justice literature. Distributive justice refers to the extent to which individuals perceive the distribution of outcomes in the organization as fair (Greenberg, 1990a). Interactional justice (Bies & Moag, 1986) is defined as the extent to which individuals perceive that they are being treated with respect and dignity. Finally, procedural justice refers to the perceived fairness of organizational procedures used in decision-making (Greenberg, 1990a). We did not examine procedural justice in this study, focusing instead on interactional and distributive justice perceptions. Studies examining procedural justice with respect to social exchange relationships found that procedural justice is a predictor of the quality of the relationships that individuals form with their organization, referred to as perceived organizational support, or POS (Masterson et al., 2000; Rhoades et al., 2001). When individuals perceive the organization as designing fair procedures for decision-making, they may form a desire to reciprocate this favorable treatment, leading to the formation of a high-quality relationship with the organization. Therefore, research shows a positive relationship between procedural justice perceptions and POS. Our focus was on interactional and distributive justice perceptions as they relate to interpersonal exchanges in the workplace, namely LMX and TMX.

Interactional justice is the most relevant justice perception for social exchange relationships. When individuals perceive that they are being treated with honesty, respect, and openness, they perceive high levels of interactional justice. Given that individuals are in constant interaction with their team members and leaders, both leaders and team members may be held responsible for interactional justice perceptions. Therefore, we argue that interactional justice will be positively related to both LMX and TMX. We are aware

of only one published study examining the relationship between interactional justice perceptions and LMX (Masterson et al., 2000), and no studies examining interactional justice with respect to TMX. Because interactional justice perceptions may be attributed to team members as well as leaders, it is important to replicate the relationship between interactional justice and LMX while simultaneously relating it to TMX.

Another reason for the need to replicate the relationship between interactional justice and LMX is that Masterson et al. (2000) operationalized interactional justice as the fairness of interpersonal interactions during a performance appraisal. Our focus is on the overall interactional justice individuals perceive from other members in the organization. Even though performance appraisals occur between leaders and subordinates, individuals communicate with their team members as well as leaders on a daily basis. Therefore, overall interactional justice perceptions may be attributed to team members as well as leaders, as opposed to the interactional justice of performance appraisal, which may only be attributed to leaders. Following Masterson and her colleagues (2000), we argue that interactional justice perceptions will be positively related to LMX. Further, we contend that interactional justice will be positively related to TMX.

H1a: Interactional justice perceptions are positively related to LMX.

H1b: Interactional justice perceptions are positively related to TMX.

Distributive justice has received limited research attention with respect to social exchange relationships in the workplace, and the few available studies have produced conflicting results. Flaherty and Pappas (2000) studied sales employees in car dealerships, and did not find a relationship between distributive justice and trust in leaders. Similarly, Andrews and Kacmar (2001) investigated distributive justice and LMX relationships in a large government institution, and found no relationship between the two. On the other hand, McFarlin and Sweeney (1992) found a positive relationship between distributive justice and evaluations of supervisors. It is plausible that in the studies that found no relationship between distributive justice and social exchange relationships, leaders had limited roles in influencing individual outcomes. In a large government organization such as the one studied in the Andrews and Kacmar study, or in a sales setting where employee rewards are directly related to employee performance, the role of leaders in reward distribution may be limited. Because we examined a field setting in which leaders had some role in individual reward allocations, we argue that individuals will attribute perceived distributive justice to the actions of their

leaders, resulting in a positive relation between distributive justice and LMX. Because team members had no influence on the distribution of rewards in the organization we studied, we did not expect a relationship between distributive justice and TMX.

H2: Distributive justice perceptions are positively related to LMX.

Exchange relationships and social loafing

Applying social exchange theory (Blau, 1964), we predict that LMX and TMX will be related to social loafing. According to social exchange theory, when individuals are in a high-quality relationship, they will behave in ways that will benefit their exchange partner – such as performing at high levels and exerting extra effort – even when they are not rewarded for these behaviors. The trust that develops between individuals creates broad role definitions, confidence in others, free exchange of information, and suppression of personal needs, which leads to behaviors that benefit the other party (Jones & George, 1998). Supporting this argument, there is experimental evidence suggesting that LMX is positively related to productivity improvements (Graen et al., 1982, 1986), increased loyalty, and lower stress (Graen et al., 1982). In addition, in field settings LMX has been related to behaviors such as organizational citizenship behaviors (Deluga, 1998; Hui et al., 1999; Settoon et al., 1996; Wayne et al., 1997), task performance (Howell & Hall-Merenda, 1999; Hui et al., 1999; Settoon et al., 1996; Wayne et al., 1997), and helping others (Anderson & Williams, 1996).

We argue that social loafing may be one way in which individuals respond to low-quality exchanges with their leaders. Individuals may not be motivated to exert full effort when they have a low-quality relationship with their leader because the task performance of individuals and groups contributes to the leader's performance. Similarly, individuals who are in a high-quality exchange with their leader may attempt to reciprocate to their leader by not engaging in social loafing. Research shows that individuals with high LMXs tend to perform citizenship behaviors targeting other individuals, such as helping with heavy workloads (Settoon et al., 1996). By engaging in citizenship behaviors targeting coworkers, individuals may be indirectly helping their leader succeed. Similarly, low LMX individuals, due to a desire to avoid indirectly benefiting the leader, may attempt to withhold their effort whenever they can. Furthermore, when working as part of a group, individuals may withhold their effort yet avoid experiencing negative consequences because their leader is unable to detect their lowered effort.

Therefore, social loafing may be one way that individuals with low-quality exchanges achieve balance in their exchanges with their leaders. Given this, we propose the following hypothesis:

H3: LMX is negatively related to social loafing.

Past research has demonstrated a negative association between the quality of team member relationships and social loafing. Karau and Williams (1997) found that individuals were less likely to loaf in groups of friends than in groups of strangers. Similarly, Karau and Hart (1998) conducted an experiment in which they manipulated cohesiveness, and found that subjects in the cohesive condition were less likely to engage in social loafing. Although these findings indicate the importance of within-team relationships, TMX is not synonymous with cohesiveness as it focuses on support provided by peers through social exchange relationships. Cohesiveness refers to the extent to which membership in the group is important to members (Karau & Hart, 1998; Karau & Williams, 1997). Seers (1989) reported correlations of .42 and .44 between TMX and cohesiveness at times 1 and 2 respectively in his longitudinal study. In addition to the findings indicating a negative relationship between cohesiveness and social loafing, researchers found that peer performance appraisals conducted with the purpose of solving problems and improving performance (Druskat & Wolff, 1999) and social inclusion of members into group activities (Williams & Sommer, 1997) were negatively related to social loafing, whereas envying other group members (Duffy & Shaw, 2000) was positively related. Together, these studies indicate that positive social interactions with team members are associated with lower levels of social loafing. Because these studies were conducted in laboratory settings with undergraduate students, external validity may be demonstrated by examining the relationship between team member relations and social loafing in a field setting, with permanent work groups.

TMX has been found to be positively related to work behaviors such as job performance (Liden et al., 2000; Seers, 1989) and helping others (Anderson & Williams, 1996). Based on social exchange theory, we expect a relationship between TMX and social loafing such that when individuals form high-quality relationships with their team members, they may be less likely to withhold effort, and will contribute fully to the group. However, when individuals form low-quality relationships with their team members, they may not hesitate to withhold effort and allow other members to pick up the slack.

H4: TMX is negatively related to social loafing.

LMX and TMX as mediators of the justice → social loafing relationship

Social exchange theory (Blau, 1964) provides a rationale for the relationship between justice perceptions and behaviors by suggesting that individuals reciprocate to the source of positive behaviors by behaving in ways that benefit the source of perceived benefits. Conversely, the 'norm of retaliation' (Gouldner, 1960) is based on the premise that when individuals feel that they have been treated unfairly, they attempt to 'even-the-score' by engaging in retaliatory behavior. Several studies found a relationship between justice perceptions and work behaviors. Most notably, in a series of field experiments, Skarlicki and Latham (1996, 1997) found that when union leaders were trained to behave in a fair manner, employees responded by performing citizenship behaviors benefiting the organization. Research has also demonstrated a relationship between justice perceptions and negative behaviors such as organizational retaliation (Skarlicki & Folger, 1997; Skarlicki et al., 1999), theft (Greenberg, 1990b; Greenberg & Scott, 1996), and interpersonal deviance behaviors (Aquino et al., 1999). These results suggest that individuals attempt to reciprocate when they perceive injustice by withdrawing their support and effort from sources of injustice, or in extreme cases by attempting to harm the source of perceived injustice. Similarly, social loafing may be a way in which individuals respond to perceived injustice attributed to leaders and coworkers.

Several researchers found that the relationship between justice perceptions and resulting behaviors flows through social exchanges with the sources of justice. For example, Moorman et al. (1998) discovered that procedural justice was related to organizational citizenship behaviors through higher quality exchanges with the organization (perceived organizational support). Masterson and her colleagues (2000) demonstrated that interactional justice perceptions are associated with supervisor-related outcomes through LMX, and procedural justice perceptions relate to organization-related outcomes through POS. Tansky (1993) found that fairness was related to organizational citizenship behaviors, but when LMX was controlled there was no relationship between fairness and organizational citizenship behaviors, suggesting the possibility of a mediating effect of LMX. After reviewing research on justice perceptions and several outcomes, Cropanzano and his colleagues (Cropanzano & Byrne, 2000; Cropanzano et al., 2001) suggested that close interpersonal relationships mediate the relationship between justice perceptions and organizational citizenship behaviors, and that LMX is a potential mediator between justice and other outcomes. These studies support the notion that social exchanges with leaders and coworkers mediate the

relationship between perceived justice and social loafing. Using this reasoning, we propose that interactional and distributive justice will be related to social loafing through LMX and TMX.

H5: The relations between justice perceptions (interactional and distributive justice) and social loafing are mediated by LMX and TMX.

As a challenge to our contention that LMX and TMX mediate the relation between justice and social loafing, we tested an alternative model that posits interactional and distributive justice are directly related to social loafing. This model is based on prior research that has found a direct relationship between justice perceptions and negative behaviors such as theft (Greenberg, 1990b; Greenberg & Scott, 1996). Thus alternative model 1 suggests that justice is related to employee behaviours through mechanisms other than through social exchanges as represented by LMX and TMX. A second alternative model is tested that examines the justice variables as mediators of the LMX–social loafing and TMX–social loafing relationships. The contention of alternative model 2 is that interpersonal relationships influence interactions and behaviors between the parties, which influence subordinates' perceptions of fairness. For example, the LMX literature has found that subordinates in high-quality exchange relationships receive more desirable assignments, greater rewards, and more support from their supervisors (Liden et al., 2000). These types of behaviors probably influence perceptions of justice. Furthermore, perceptions of fairness may influence individuals' decisions to engage in social loafing. Finally, we tested a model that reverses the direction of causality in the hypothesized model. That is, in alternative model 3 we examine social loafing as a predictor of interpersonal relationships (LMX and TMX), which, in turn, influence justice perceptions. This model suggests that individuals who engage in social loafing will have strained relationships with coworkers and difficulties with their superiors. In turn, these relationships may influence coworker and supervisor behavior directed toward the social loafer, such as less helping behavior and fewer rewards. These behaviors are predicted to influence social loafers' perceptions of fairness.

Control variables

Using past research as a guide, we controlled task visibility and negative affectivity as potential correlates of social loafing. Previous studies suggest

that task visibility is a determinant of social loafing (George, 1992; Jones, 1984). Because individuals may engage in social loafing when the task they work on is not visible to supervisors, we controlled task visibility when testing our model. In addition, we controlled negative affectivity, which is a trait of subjective distress and displeasure that the individual feels in general (Watson et al., 1988). Negative affectivity has been related to negative work behaviors such as vandalism (Heaven, 1996), and people who are high in negative affectivity tend to experience greater distress, discomfort and dissatisfaction over time and in different situations – dwelling on their mistakes, and focusing on the negative elements in their lives. While some researchers have argued that negative affectivity biases self-reports of job-related variables (Brief et al., 1988; Watson et al., 1986), more recent work has suggested a substantive role in which this dispositional variable is related to underlying constructs (Spector et al., 1999).

Method

Sample

Data were collected from employees and their supervisors at a mid-sized, family-owned manufacturing company located in the midwestern United States. This organization is traditional in nature, with a hierarchical organizational structure, work groups that are functional and leader managed, and a pay structure that is primarily based on individual performance. Consequently, coworkers have little influence over performance ratings or monetary rewards. A total of 301 employees from 18 work groups, managed by 13 supervisors, were asked to participate. Five of the supervisors in the sample have responsibility for more than one work group. The response rate was 56 percent for the employee sample, and 85 percent for the supervisor sample. Removing 40 employees due to missing data or lack of supervisor data yielded a total of 124 supervisor–subordinate dyads.

Data collection

Data were collected through the use of a questionnaire distributed to the employees and an interview with their direct supervisors. Two methods and two sources were used to control for common method variance. The employee questionnaire assessed demographic information, LMX, TMX, task visibility, negative affectivity, and overall perceptions of distributive and interactional justice. The supervisor interview assessed each employee's social loafing as well as supervisor demographics.

The demographic breakdown of the sample of employees was 57 percent female, 43 percent male; 79 percent Caucasian, 19 percent African American, 1 percent Asian American, 1 percent other, mean age of 36.55 years ($SD = 10.96$); 6 percent reported a grade school education, 85 percent completed a high school education or equivalent, 8 percent reported having an associates degree, 1 percent reported completing a college degree. All supervisors who elected to participate were Caucasian. Fifty-five percent were male, 45 percent female, mean age of 37.6 years ($SD = 8.2$), 9 percent with a college education, 9 percent with an associates degree, 82 percent with a high school diploma or equivalent.

To discern the representativeness of the respondents with respect to the total sample, the social loafing measure was tested for mean differences between respondents and non-respondents. No significant differences were found ($t = -.17, p < .05$) suggesting that there was no difference between respondents and non-respondents in terms of their social loafing. It was not possible to test for differences between respondents and non-respondents with regard to other variables.

Measures

Organizational justice

Perceptions of *interactional justice* were measured using a 9-item scale adapted from Niehoff and Moorman (1993). These items focused on how employees are treated when decisions are made about their jobs. Example items include: 'When decisions are made about my job, I am dealt with in a truthful manner' and 'When decisions are made about my job, I am treated with kindness and consideration'. A 7-point response scale was used, with anchors ranging from 1, 'strongly disagree', to 7, 'strongly agree' ($\alpha = .96$). *Distributive justice* was assessed using Price and Mueller's (1986) 6-item scale. Example items include: 'How fair has your company been in rewarding you when you consider the amount of effort that you put into your work?' and 'How fair has your company been in rewarding you when you consider the work you have done well?' Participants responded on a 7-point scale, with anchors ranging from 1, 'very unfair', to 7, 'very fair' ($\alpha = .93$).

Leader-member exchange (LMX)

LMX was assessed using a 12-item scale based on Liden and Maslyn (1998). This scale consists of items that measure various aspects of the working relationship between the supervisor and subordinate. Example items include:

'My supervisor defends my work actions to a superior, even without complete knowledge of the issue in question' and 'I respect my supervisor's knowledge of and competence on the job'. Participants responded on a 7-point scale, with anchors ranging from 1, 'strongly disagree', to 7, 'strongly agree' ($\alpha = .86$).

Team-member exchange (TMX)

Seers' (1989) 10-item scale was used to measure team-member exchange. Example items include: 'My coworkers understand my problems' and 'I am flexible about switching jobs with my coworkers'. The scale uses a 7-point response format, with anchors ranging from 1, 'strongly disagree', to 7, 'strongly agree' ($\alpha = .78$).

Social loafing

Social loafing was measured with seven items adapted from George (1992). The measure assesses the extent to which employees tend to put forth low levels of effort on the job when other employees are present to do the work. Supervisors were instructed to indicate how characteristic each item was of each employee. Example items include: 'Defers responsibilities he or she should assume to other group members' and 'Puts forth less effort on the job when other group members are around to do the work'. Responses were made on a 7-point scale ranging from 1, 'not at all characteristic', to 7, 'very characteristic' ($\alpha = .96$).

Task visibility

Task visibility was measured with a 6-item scale adapted from George (1992). Items refer to employees' beliefs about the extent to which their supervisors are aware of how much effort they exert on the job. This scale was slightly modified from George (1992), changing the reference from 'salespeople' to 'employees'. Example items include: 'My supervisor would probably notice if I was slacking off' and 'It is hard for my supervisor to determine how much effort I exert on the job'. Responses were made on a 7-point scale ranging from 1, 'strongly disagree', to 7, 'strongly agree' ($\alpha = .83$).

Negative affectivity

Ten items from Watson et al. (1988) were used to assess negative affectivity. The scale consists of words, such as 'distressed', 'upset', and 'hostile', that describe different feelings and emotions. Respondents were instructed to

consider how they 'feel on average' or 'generally' and to respond using a 7-point scale ranging from 1, 'not at all', to 7, 'extremely' ($\alpha = .88$).

Results

Table 1 shows the means, standard deviations, and intercorrelations among the variables. Prior to testing our hypotheses, we performed a within and between analysis (WABA) in order to examine the appropriate level of analysis of the social loafing variable (Dansereau et al., 1984). Because social loafing was measured from the supervisor perspective, there might be substantial group-level variance, which would necessitate analysis of data at the group level. We performed WABA I to determine the locus of variation in the social loafing variable. This test compares the within-groups eta with the between-group eta and yields an E ratio. The results suggested that within-group variation in social loafing was greater than between-group variation (between eta = .49, within eta = .87, E = .56, significant with the 30 degrees test). These findings indicated that it was appropriate to analyze the data at the individual level, given that supervisor-level variance in social loafing was not substantial.

Structural equation modeling via LISREL 8.50 (Joreskog & Sorbom, 1993) was used to test the model. All model tests were based on the covariance matrix and used maximum likelihood estimation. Given the sample size and number of items that comprised the variables, a single indicator approach was employed. This enabled us to maintain an appropriate subject-to-degrees-of-freedom ratio. We adjusted for measurement error by setting

Table 1 Means, standard deviations, and correlations among the variables

Variables	Means	Standard deviations	1	2	3	4	5	6
1. Interactional justice	4.58	1.29	–					
2. Distributive justice	4.28	1.36	.66**	–				
3. LMX	5.44	0.90	.64**	.37**	–			
4. TMX	4.85	0.81	.34**	.26**	.26**	–		
5. Social loafing	2.16	1.36	–.25**	–.20*	–.35**	–.12	–	
6. Task visibility	5.17	1.18	.23**	.11	–.25**	–.03	–.01	–
7. Negative affectivity	2.54	1.06	–.26**	–.20*	–.15	–.15	.14	–.09

N = 124; **p* < .05; ***p* < .01

the path from the latent variable to the indicator equal to the square root of the scale reliability. The error variance was set equal to the variance of the scale value multiplied by one minus the reliability (Hayduk, 1987; Williams & Hazer, 1986). The exogenous variables (interactional justice, distributive justice, task visibility, and negative affectivity) were allowed to covary.

The hypothesized model provided a good fit to the data based on the fit statistics ($\chi^2 = 5.27$, d.f. = 8, $p = .73$; GFI = .99; AGFI = .96; NFI = .97; CFI = 1.00). Standardized parameter estimates are reported in Figure 2. In support of Hypotheses 1a and 1b, the paths from interactional justice to LMX and from interactional justice to TMX were significant. Hypothesis 2 was not supported; the path from distributive justice to LMX was not significant. Support was found for Hypothesis 3, as the path from LMX to social loafing was significant. TMX was not related to social loafing, indicating a lack of support for Hypothesis 4. The control variables, task visibility and negative affectivity, were not significantly related to social loafing. The amount of variance explained for the endogenous variables was 51 percent for LMX, 16 percent for TMX, and 17 percent for social loafing.

Alternative models

The hypothesized model is a fully mediated model as it suggests that LMX and TMX mediate the relationships between justice and social loafing. For the first model comparison, we followed Kelloway's (1998) recommendation and compared the hypothesized fully mediated model to a partially mediated model. Specifically, alternative model 1 consisted of the hypothesized model, but with the addition of paths from interactional justice to social loafing and from distributive justice to social loafing. This alternative model 1 suggests that interactional justice and distributive justice have direct and indirect (through LMX and TMX) effects on social loafing. The difference in chi-square between

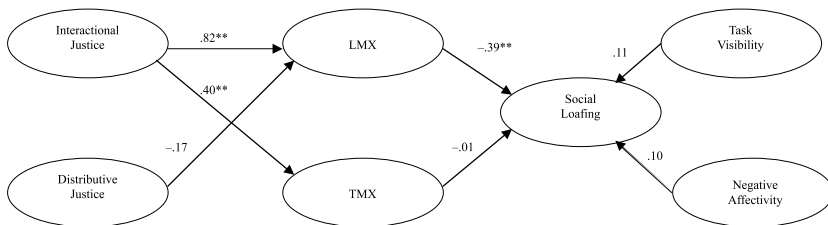


Figure 2 Maximum likelihood estimates for hypothesized model
All path estimates are standardized; * $p < .05$; ** $p < .01$

the hypothesized model and the alternative model 1 was not significant ($\chi^2_{\text{difference}}(2) = .70$, NS). Since the difference in chi-square was not significant and the paths from interactional justice to social loafing and from distributive justice to social loafing were not significant, the more parsimonious model (i.e. the hypothesized model) should be accepted.

A second alternative model was examined that proposes a different causal ordering of our variables. That is, for alternative model 2 we examined the justice variables as mediators of the LMX–social loafing and TMX–social loafing relationships. We continued to include task visibility and negative affectivity as control variables for social loafing. Because this is *not* a nested model, comparing the hypothesized and alternative model 2 on the basis of the difference in chi-square is inappropriate. Rather, the models were compared based on multiple fit indices. The fit statistics for alternative model 2 ($\chi^2 = 60.41$, d.f. = 8, $p = .001$; GFI = .88, AGFI = .58, NFI = .69; CFI = .69) indicate that it provides a poor fit to the data. Also, the fit indices for the alternative model 2 compared with the fit indices for the hypothesized model ($\chi^2 = 5.27$, d.f. = 8, $p = .73$; GFI = .99; AGFI = .96; NFI = .97; CFI = 1.00), indicate the superiority of the hypothesized model.

We tested a third alternative model that also challenges the causal ordering of the variables in the hypothesized model. Specifically, we tested the model whereby social loafing is a predictor of LMX and TMX. In turn, LMX and TMX influence interactional and distributive justice. We continued to control for task visibility and negative affectivity in relation to social loafing. Thus we reversed the order of the variables in the model: behavior (social loafing) precedes the work relationships (LMX and TMX), which directly influence justice perceptions (interactional and distributive justice). The fit statistics for this alternative model 3 ($\chi^2 = 73.64$, d.f. = 13, $p = .001$; GFI = .87, AGFI = .71, NFI = .62; CFI = .65) indicate that the model provides a poor fit to the data. Also, comparing the fit indices for the alternative model 3 to the fit indices of the hypothesized model ($\chi^2 = 5.27$, d.f. = 8, $p = .73$; GFI = .99, AGFI = .96, NFI = .97; CFI = 1.00) indicates the superiority of the hypothesized model.

Discussion

The results of the structural equation modeling analysis provide general support for the hypothesized model. As predicted, justice perceptions were related to social loafing through the exchange relationships. Specifically, we found that interactional justice perceptions were positively related to LMX and TMX, and LMX was negatively related to social loafing. Kidwell and

Bennett (1993) argued that affective bonding – or the relations that individuals form with organizational actors – plays a role in social loafing. Previous studies recognized the role of group–member relations with respect to social loafing, but did not examine the role of leader–subordinate relations. We examined LMX and TMX together, and found that only LMX was significantly related to social loafing. These findings indicate the importance of interpersonal exchanges, and especially leader–subordinate relations in the social loafing process.

Contrary to expectations, we did not find a relationship between TMX and social loafing. This is interesting considering the number of laboratory studies indicating a link between group member relations and social loafing. One explanation for the lack of a significant relationship may be the unmeasured moderating variables such as the normative environment in the work group, collective self-efficacy, or perceived peer motivation. For example, Hodson (1997) found coworker solidarity to be positively associated with job satisfaction and relations with management, indicating that the normative environment may impact important organizational outcomes. Another explanation may be that in actual work groups, LMX plays a more important role in predicting social loafing than TMX. Finally, to the extent that team members and leaders differ in their observations of social loafing, our reliance on supervisor ratings of social loafing may have been partially responsible for the lack of a significant relationship between TMX and social loafing. Future research needs to examine possible moderators of the TMX–social loafing relationship while at the same time controlling for LMX. More research is needed in order to understand the relative importance of LMX and TMX in predicting social loafing in actual work groups. Supplementing supervisor ratings of social loafing with peer ratings will help rule out measurement error in social loafing as an alternative explanation for the observed relationships.

Contrary to our hypotheses, distributive justice perceptions were not related to LMX. Even though the supervisors in our study had influence over reward distribution, it is possible that subordinates still attributed distributive justice to the actions of the organization rather than to the leader. Future research could address this issue by directly measuring attributions regarding distributive justice perceptions. Examining the conditions under which individuals attribute distributive justice to leaders is important in understanding the relationship between distributive justice and individual outcomes.

Our findings show that interactional justice may be attributed to both leader and team member behaviors, and may contribute to both exchanges. Although TMX was not related to social loafing in the current study, the

relation between interactional justice and TMX is important because of the implications TMX has for group performance (Seers et al., 1994) and individual attitudes (Seers, 1989). Past research treated interactional justice as only a function of leader behaviors, and omitted TMX in models of justice and social exchanges. Because interactional justice may be attributed to both team members and leaders, future research may benefit from developing separate measures of interactional justice of leaders and team members, instead of equating interactional justice solely with fairness of leaders.

The results of our study indicate that as Kidwell and Bennett (1993) proposed, interpersonal exchanges play a role in the social loafing process. One important future research direction would be to examine the role of cost-benefit calculations, group norms, and affective bonding together in actual work groups, in order to examine the relative importance of each group of variables. The findings of this study have implications for disciplines beyond human resources and organizational psychology. Because interactional justice captures the degree of fairness in the relationships at work that overlap considerably with relationships people form in non-work settings, this research may have implications beyond the work-related organizational context. These qualities of fairness may inform psychological, sociological, and anthropological research. Interpersonal exchanges, and especially LMX, have been studied in areas such as sports (Case, 1998), consumer behavior/marketing (Delvecchio, 1998), and gender (Bernas & Major, 2000). Therefore, the finding that justice perceptions are related to social loafing through LMX may have implications in a number of disciplines.

As with any research, the current investigation has several limitations. First, it is not possible to establish the direction of causality between justice perceptions and employee behaviors. It may be that employees who demonstrate high levels of social loafing perceive lower levels of interactional justice and LMX because of the unfavorable treatment that may result from withholding effort. Based on existing theories, we argued that justice perceptions would be related to exchange quality, and subsequently to employee behaviors. To lend credence to our proposed model, we have tested alternative models that examine a different causal ordering. We found the fit indices for the hypothesized model to be superior to the alternative models. Still, it is important to recognize that a causal link can only be demonstrated through experimental studies, or to some extent through longitudinal field studies. Other limitations of the study include the use of a single organization and the use of supervisor reports of social loafing. When possible, it may be helpful to measure these variables from the perspectives of coworkers as well. In cases where supervisors are not able to observe these behaviors, peer reports may be more accurate (Mumford, 1983). An alternative explanation

for the non-significant path between TMX and social loafing may be our measurement of social loafing from the supervisor's perspective. Because supervisors may not have been able to observe all instances of social loafing, supplementing supervisor ratings with peer ratings of social loafing would have provided a more accurate portrayal of individual social loafing behaviors. With respect to the use of only one organization, it would be desirable in future research to collect data in multiple organizations so that the wide range of 'macro' variables – such as external environments, organizational design, organizational culture, and other organizational-level variables – can be incorporated into the research design. Also, other informal social control mechanisms that impact social loafing, or modify productive effort, should be considered, either as control variables or as part of the model.

Our measure of interactional justice did not differentiate between fairness of treatment of leaders and team members, and instead captured the extent to which respondents perceived their overall treatment by other organizational members as fair. Therefore, we were not able to differentiate the relative extent to which individuals used social loafing to reciprocate the fairness of leaders and team members. We found that interactional justice was related to both LMX and TMX; however this relationship was stronger for LMX. It is plausible that our interactional justice measure captured fairness of leaders to a greater extent, compared with fairness of team members. Measuring the interactional justice of leaders and team members separately would help clarify the extent to which justice perceptions from different actors influence social loafing and other behaviors. In sum, we found support for the mediating role of LMX, but not TMX, in the justice–social loafing relationship. This suggests that the employee–leader relationship rather than coworker relationships may be most salient in predicting social loafing. Future research should examine other predictors of social loafing based on justice theory, exchange theory, and the affective bonding perspective.

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Susan M. Murphy is an Assistant Professor at the California Lutheran University School of Business, Thousand Oaks, CA. She holds a PhD in Management from the University of Illinois at Chicago. Her research interests include organizational justice perceptions, interpersonal relationships in the workplace, and social loafing.
[E-mail: murphy@clunet.edu]

Sandy J. Wayne is Professor of Management and Director of the Leadership Research Consortium in the Department of Management of the Terry College of Business at the University of Georgia in Athens. She received a PhD in Management from Texas A&M University in 1987. Her research interests include employee-supervisor relationships, employee-organization relationships, upward influence, and perceived organizational support.
[E-mail: sjwayne@terry.uga.edu]

Robert C. Liden is Professor of Management, Synovus Chair of Servant Leadership in the Terry College of Business at the University of Georgia in Athens. He received a PhD from the University of Cincinnati. His research focuses on interpersonal processes and how they relate to such topics as leadership, groups, and employment interviews.
[E-mail: rliden@terry.uga.edu]

Berrin Erdogan is an Assistant Professor at the Portland State University School of Business, Oregon. She holds a PhD in Management from the University of Illinois at Chicago. Her research interests include interpersonal relationships in the workplace, organizational justice perceptions, person-organization fit, and organizational culture.
[E-mail: berrine@sba.pdx.edu]