Spring 6-8-2018

JUSTICE, TRUST, AND TEAM PERFORMANCE A Comparison of Leader Selection Methods on the Development of Team Trust

Jake Alexander Weiss
DePaul University, jweiss19@depaul.edu

A Comparison of Leader Selection Methods on the Development of Team Trust

A Thesis

Presented in

Partial Fulfillment of the

Requirements for the Degree of

Master of Arts

By

Jake Alexander Weiss

May 14, 2018

Department of Psychology

College of Science and Health

DePaul University

Chicago, Illinois

Thesis Committee

Suzanne T. Bell, Ph.D. Chairperson

Goran Kuljanin, Ph.D.

Acknowledgements

I would like to express my appreciation and gratitude to Suzanne Bell for her invaluable guidance throughout this entire thesis process. I would also like to thank Goran Kuljanin for his added insights and guidance in the development of this project. I thank Shanique Brown for mentoring me during my first year in graduate school, as I would not be where I am today without her. From UCF, I would like to thank the following individuals for helping me in various ways throughout my four years there, as I would not be who I am today without them: Jessica Francis, Jessica Reo, Keith Embray, Ben Rodriguez, and Adam Hubbard. Additionally, I would like to thank my family and friends for their support throughout this process.

Biography

The author was born in Boca Raton, Florida, on July 20, 1993. He graduated from Jupiter Community High School, in Jupiter, Florida. He received his Bachelor's of Science degree in Psychology from the University of Central Florida (UCF) in December of 2014.

Abstract

Throughout the past few decades, organizations have shifted from a management mandated, top down approach to a more collaborative, team based, horizontal structure (Miles & Snow, 1992). As a result, work teams are on the rise, which has led to an increase in leadership roles within organizations. The relationships between procedural justice and trust in leadership, and trust in leadership and performance are well established in current literature. The former relationship, however, has been analyzed only at the individual level. Given the prevalence of teams in academic and applied settings, it is imperative to understand how this relationship exists, if at all, at the team level. Thus, the aim of this study is to examine and establish the procedural justice, trust in leadership, and team performance relationship at the team level. Additionally, this study indirectly examines the impact of the leader selection process on procedural justice perceptions, and its ensuing influence on trust in leadership and team performance.

Data was collected from 252 participants encompassing 60 teams with appointed group leaders engaged in a semester long Strategic Management group project. After removing data from teams with two or fewer individuals responding, the final sample used for analyses included 132 participants encompassing 47 teams. Data collection occurred at two time points during the semester. Time 1 data collection occurred during weeks 9 and 10 of the 16-week semester, and time 2 data collection occurred during weeks 15 and 16. Measures targeting participants' procedural justice perceptions regarding the leader

selection method were collected, as well as participants' trust in their team leader; these measures were aggregated to the team level. Mediated regression was used to analyze the data. This study hypothesized that trust in leadership would mediate the relationship between procedural justice and team performance, and trust in leadership would lead to increased team performance. Contrary to expectations, however, the aforementioned hypotheses did not receive support. Theoretical and practical implications regarding the findings are detailed further in the discussion section.

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Introduction

Throughout the past few decades, the nature of organizations has shifted from a management mandated approach whereby tasks were directly assigned to individual employees or members, to a more collaborative, group-based environment wherein employees or members work in "teams" to accomplish organizational goals (DeShon & Gillespie, 2005; Mathieu, Maynard, Rapp & Gilson, 2008; Miles & Snow, 1992). As a result, in recent years, there has been an explosion of research conducted in team settings (e.g., Dirks, 2000; Mach, Dolan, & Tzafrir, 2010; Mathieu, Kukenberger, D'Innocenzo, & Reilly, 2015). However, even with the growing field of teams research, a substantial sum of literature still maintains an individual-level focus (i.e., person-level). While this is not an issue per se, it is imperative that findings from studies conducted at the individual level are not falsely or irresponsibly generalized to a higher level of analysis, such as the dyad, triad, or team level, which is known as the atomistic or individualistic fallacy (Diez Roux, 2002). Thus, it is imperative that research is conducted to determine whether these notable relationships occur at the team level, as this could have both theoretical and practical implications.

The recent boom of work teams across industries has created the opportunity for more leadership positions within organizations (whether via a self-managed team or team lead). In the academic literature, researchers have consistently demonstrated that procedural justice perceptions are a crucial

antecedent of trust in leadership (Korsgaard, Schweiger, & Sapienza, 1995; Korsgaard, Brodt, & Whitener, 2002), and also that trust in leadership is one of the most vital conditions for achieving optimal team performance (Dirks, 2000). There are an abundance of studies that examine relationships between team leadership and outcomes, such as overall performance (Dirks, 2000), team productivity, team learning (Burke, Stagl, Klein, Goodwin, Salas, & Halpin, 2006), team creativity (Boies, Fiset, & Gill, 2015), and commitment to organizational change (Shin, Seo, Shapiro, & Taylor, 2015), which also serve to highlight the significance of effective team leadership for desired team outcomes.

Though the importance of the aforementioned relationships are significant, we cannot infer that the relationships found at the individual level will replicate or hold true at a higher level of analysis – the team level. In that regard, there are a staggeringly low number of studies that explore the procedures through which a team leader is selected, and the implications the selection process may have on team outcomes, such as procedural justice perceptions, trust in leadership, and team performance. Consequently, the aim of this study is to examine the relationship between procedural justice, trust in leadership, and team performance, while also indirectly assessing the impact of the leader selection process on team outcomes, by using the leader selection process as the referent for team members' procedural justice perceptions.

This thesis is organized as follows. First, an overview of the organizational justice literature is presented. Next, the procedural justice literature is explored to illustrate the importance of procedural justice for trust in leadership.

Throughout this section, the leader selection and voice literature is discussed to highlight how different perceptions of fairness may arise from the selection process. Finally, the relationship between team level procedural justice perceptions and trust in leadership is connected to overall team performance.

Organizational Justice

Until recently, organizational justice was characterized by the antecedents and consequences of two forms of subjective perceptions: the fairness of distribution of outcomes, and the fairness of the procedures that determined those outcomes (Colquitt et al., 2001). The former is distributive justice, which refers to the fairness of the outcomes that are received in accordance with certain criteria (Leventhal, 1976). Distributive justice stems from equity theory, which suggests that equity exists whenever the ratio of one's outcomes to inputs is equal to the ratio of another's outcomes and inputs (Adams, 1965). If the two ratios are not equal, then inequity exists (Adams, 1965). Distributive justice focuses on the allocation or distribution of outcomes, which differs from procedural justice which is defined as the fairness of the procedures used to determine the allocation of outcomes (Leventhal, 1980). Interactional justice refers to the quality of interpersonal treatment that people receive when procedures are enforced (Bies & Moag, 1986). Interactional justice consists of two types of interpersonal treatment— interpersonal justice and informational justice. Interpersonal justice refers to the degree to which people are treated respectfully and fairly during the process aimed to allocate resources, and informational justice can be defined as the explanations provided to people which inform them about why certain

procedures were used or why the methods of outcome distribution were selected (Greenberg, 1993).

Procedural Justice

The process that is of most interest in this study is procedural justice, because it deals with the procedures through which outcomes are allocated, and whether those procedures are perceived as fair. Thus, this process is believed to mirror the procedures through which a leader is selected—election vs. appointment. Procedural justice was originally studied by Thibaut and Walker in 1975 in the context of legal procedures (Colquitt, Colon, Wesson, Porter & Ng, 2001), but was extended by Leventhal in 1980. Leventhal (1980) noted that the procedural aspects of the allocation process, which had previously been ignored, were crucial factors in determining perceptions of fairness. He, thus, defined procedural justice as an individual's perception of the fairness of procedural components of the social system that regulate the allocative process. Procedural justice was then integrated with distributive justice, thereby allowing researchers to grasp a more complete understanding of the implications of justice in organizations (Colquitt et al., 2001). Outlined by Colquitt and colleagues (2001), but originally devised by Leventhal (1980) were the six procedural justice rules required for the process to be perceived as fair. According to Leventhal (1980), procedures should: (1) be applied consistently across people and time—the consistency rule, (2) be free from bias—the bias-suppression rule, (3) ensure that accurate information is collected and used in the decision making process—the accuracy rule, (4) incorporate a way to correct flawed or inaccurate decisions—

the correctability rule, (5) conform to some standards of ethics or morality—the ethicality rule, and (6) take into account opinions of those that will be effected by the decision—the representativeness rule.

In the decades following the development of procedural justice, numerous studies were conducted to examine its antecedents and outcomes. Ramaswami and Singh (2003), in their study on merit pay procedural fairness, found that the use of unbiased procedures by supervisors and participation of employees were antecedents of procedural justice. Folger and Konovsky (1989) found that procedural justice accounted for more unique variance than distributive justice when measuring an individual's attitudes about the employing institution and its authorities, trust in the supervisor, and organizational commitment. Procedural justice, as displayed in the meta-analysis by Colquitt et al. (2001), was found to have significant relationships with outcome satisfaction, job satisfaction, organizational commitment, organizational citizenship behaviors, withdrawal, and negative reactions.

Researchers also hypothesized and concluded that team members' trust in their leader increased when they were given voice in the decision making process which thus appeared to be procedurally just, and decreased when the process was perceived as procedurally unfair (Korsgaard, Schweiger, & Sapienza, 1995). Although the procedural justice—performance relationship has been laden with inconsistent findings (Colquitt et al., 2001), studies have shown that procedural justice perceptions are an important component of trust in leadership, though this has not been studied at the team-level (Burke et al., 2007; Colquitt et al., 2001).

Because research has also linked trust in leadership with increased performance, both at the individual and team level (Dirks, 2000; Dirks & Ferrin, 2002), it is posited that perceptions of fairness will increase trust in leadership, which in turn will lead to greater team performance.

Voice

Voice, one of the antecedents of procedural justice, is crucial to understanding perceptions of fairness resulting from procedural justice. The phenomena of voice is defined as the opportunity for individuals to participate and express their opinions during a decision making process (Folger, 1977). Numerous studies have been conducted on the topic of voice, with the results supporting the notion that it is an important antecedent (Ramaswami & Singh, 2003) of procedural justice—it makes people feel that the decision-making process is fair because they are able to participate and provide their opinion. Studies show that people react more positively when they receive voice compared to when they are denied voice (De Cremer & Alberts, 2004). For example, Folger (1977) compared voice and mute procedures and found that voice procedures were perceived as fairer than mute ones. Unlike voice, mute procedures are those that do not provide the opportunity for individuals to present their point of view to the decision makers (Folger, 1977). Similarly, Bies (1987) found that the opportunity for voice was positively associated with the individual's judgement of procedural fairness.

The voice effect has also been linked with the leader selection process, the referent for procedural justice perceptions in this study; specifically, whether a

leader is elected or appointed (e.g., Hollander & Julian, 1970; Julian et al., 1969). De Cremer and Alberts (2004) found that the manner in which the leader was selected influenced the effect of voice; when a leader was elected, participants perceived having more voice in the process which, in turn, increased perceptions of the fairness of procedures enacted by that leader.

All of the studies cited and described in the section above look at the connection between how a leader attains that position and the effects of voice (Bies, 1987; Bies & Shapiro, 1988) and procedural justice (e.g., Bacha & Walker, 2013; Folger & Konovsky, 1989; Ramaswami & Singh, 2003) in relation to the procedures enacted by the leader after being elected or appointed, rather than the perceptions of fairness or justice brought about by the procedures through which the leader was chosen. Voice procedures are clearly a large component of procedural justice and seem to parallel the processes through which leaders are selected. The argument here is that when individuals are given a voice in the election or selection of their leader (voice procedures) they will perceive this selection process as fair*; since this is a leader "we" selected, he or she is the best person for the position and therefore a fair result was achieved.* Conversely, when individuals feel that they are not given an adequate opportunity to provide input into the decision-making process (mute procedures), they will be more likely to view the process as less favorable or unfair (Bies & Shapiro, 1988); *management forced this person on us, or chose him or her over me or someone better suited for the position.* In sum, it is therefore suggested that team members'

perceptions of fairness regarding the leader selection process will influence their overall level of trust in their leader.

Procedural justice, Trust in leadership, and Performance

Researchers have noted, over the past 25 years or so, that procedural justice was well represented in studies of satisfaction, commitment, and withdrawal, but underrepresented in studies of trust and performance (Colquitt et al., 2001). In response, Korsgaard, Brodt, and Whitener (2002) conducted a study which examined the relationship between trust and procedural justice, wherein they found that trust was an outcome of procedural justice. As previously stated, however, based on the current state of the literature, we cannot accurately determine if this relationship holds at alternate levels of analysis.

Trust in leadership is conceptualized as a firm belief in the reliability, truth, ability, or strength of one's leader, and is vital for organizations because it motivates the members of the team to willingly accept the leader's activities, goals, and decisions and to work hard to achieve those goals (Dirks, 2000). Trust in leadership is a crucial aspect of team performance, and thus, has important implications for teams and organizations, as the degree of that trust has a direct correlation to the level of team performance. Dirks (2000) was the first to explore this relationship and found that trust in leadership had a significant effect on team performance. Many other researchers subsequently corroborated his findings (Burke et al., 2007; Dirks & Ferrin, 2002; Mach et al., 2010). Trust in leadership has also been shown to have organization-level implications. For example, trust in leadership has been shown to facilitate knowledge sharing, increase

communication between employees, OCB's, and organizational performance, as well as decrease employee turnover (Burke et al., 2007).

In sum, researchers have consistently demonstrated that procedural justice perceptions are a crucial antecedent of trust in leadership (Korsgaard, Schweiger, & Sapienza, 1995; Korsgaard, Brodt, & Whitener, 2002), and also that a high level of trust in leadership, especially in teams, is crucial for achieving optimal levels of team performance (Dirks, 2000). Despite these well documented findings, we cannot infer that the relationships found at the individual level will replicate or hold true at a higher level of analysis (e.g., dyad, team, or organization level). Thus, it is imperative that research is conducted to determine whether these notable relationships occur at the team level, as this could have both theoretical and practical implications. Therefore, the aim of this study is to examine the relationship between procedural justice, trust in leadership, and team performance at the team level.

Additionally, while we know how important leaders are to team effectiveness, we have little understanding about how the leader selection process – how team leaders attain their leadership position – influences key team processes and outcomes, such as procedural justice perceptions, trust in leadership, and performance at the team level. Thus, this study also aims to assess the impact of the leader selection process on team outcomes, by using the leader selection process as the referent for team members' procedural justice perceptions.

Rationale

Because organizations seem to be shifting from a management mandated approach to a more collaborative, team-based environment, it is imperative that findings from studies conducted at the individual level are not falsely or irresponsibly generalized to a higher level of analysis (i.e., atomistic fallacy) (Diez Roux, 2002).

Although researchers have consistently demonstrated that procedural justice perceptions are a crucial antecedent of trust in leadership (Korsgaard, Schweiger, & Sapienza, 1995; Korsgaard, Brodt, & Whitener, 2002), and that trust in leadership is one of the most vital conditions for achieving optimal team performance (Dirks, 2000), we cannot infer that the relationships found at the individual level will replicate or hold true at a higher, team level of analysis. Thus, it is imperative that research, as proposed hereinabove, is conducted to determine whether these notable relationships occur at the team level, as this could have both theoretical and practical implications.

Procedural justice refers to perceptions of fairness arising from enacted procedures through which outcomes are allocated (Leventhal, 1980). This process is believed to mirror the procedures through which a leader is selected, which is the referent for procedural justice perceptions in this study. An antecedent to procedural justice is voice, which is defined as the opportunity for individuals to participate and express their opinions during a decision-making process (Folger, 1977). Thus, it is expected that teams that perceive they had opportunities to provide input into the leader selection, decision-making process, will indicate

higher procedural justice perceptions than teams that did not.

Trust in leadership is defined as the belief in the reliability, truth, ability, or strength of one's leader, and is vital for organizations because it motivates team members to willingly accept the leader's activities, goals, and decisions, and to work hard to achieve those goals (Dirks, 2000). The organizational justice literature has concluded that procedural justice is an important antecedent to trust in leadership (Colquitt et al., 2001; Korsgaard et al., 1995).

As noted previously, trust in leadership is crucial for organizations with a team-based structure, as it motivates team members to willingly accept the leader's activities, goals, and decisions, and to work hard to achieve those goals (Dirks, 2000). Consequently, trust in leadership has been shown to relate strongly to team performance; the degree of trust in leader has a direct, positive correlation to the level of team performance (Burke et al., 2007; Dirks, 2000; Dirks & Ferrin, 2002; Mach et al., 2010). Correspondingly, it is predicted that increased trust in leadership will mediate the relationship between procedural justice and team performance (Hypothesis I). Additionally, to replicate the trust in leadership and team performance relationship at the team level of analysis, it is expected that increased trust in leadership will lead to higher team performance (Hypothesis II).

Statement of Hypotheses

Hypothesis I: Trust in leadership will mediate the relationship between procedural justice and team performance.

Hypothesis II: Increased trust in leadership will lead to higher team performance.

Figure 1

Hypothesized Relationships between Team Procedural, Team Trust, and Team Performance

Figure Note. Solid outline represents mediation model in *HI*. Dotted outline represents direct effects

Method

Participants and Design

Participants were undergraduate psychology students at a large Southeastern university who were enrolled in the Strategic Management Capstone course. In total, 252 individuals, and 60 teams, participated in this study, however, after removing data from teams with two or fewer individuals responding, data from 132 students totaling 47 teams was usable and analyzed.. Participants' ages ranged from 18-30 years old (M = 23.21, SD = 3.51). Participants were able to earn extra credit points for their participation.

Task

Throughout the 16-week semester, students enrolled in the Strategic Management Capstone courses were tasked with working on multiple group sub-projects, which comprised an overall strategic management project. Teams were formed in the first few weeks of the semester (i.e., in weeks two and three), and began formally working together on the sub-projects shortly thereafter (i.e., in weeks four and five). The performance data collected captured each teams' performance on the final strategic management project, which was a culmination

of the multiple sub-projects. The goal of this project was for each team to develop a recommendation for an organization designed to boost its profits, return on investment (ROI), and increase its competitive advantage.

On average, teams consisted of 4-5 students (M = 4.65, SD = 0.97) with a designated team leader. To determine a team leader, the Professor gauged student interest in leading a team through a brief survey she developed, and then assigned team leaders based on that information. It is important to note, however, that not every student who reported interest in being a team leader was able to fill a leadership role. Deliverables at the end of the project included a strategic analysis report which detailed the team's strategic plan for their organization, and a strategic analysis presentation of their initiative to the class.

Materials

Procedural justice. Procedural justice can be conceptualized and operationalized as the perceptions of fairness of the procedures used to determine outcomes, which in this study is the selection of the leader of the team. The measure used in this study was constructed by Colquitt (2001), and the items were based on Thibaut and Walker (1975) and Leventhal's (1980) conceptualizations of procedural justice and fairness. Participants rated their perceptions of procedural justice regarding the leader selection process. The procedural justice scale was subject to rigorous testing by Colquitt (2001), including confirmatory factor analysis, prediction of path coefficients and correlations with similar and distinct measures to ensure construct validity and demonstrated convergent and divergent validity, as well as predictive validity. Cronbach's alpha for this scale was 0.93.

Questionnaire responses are measured on 5-point likert type scale ranging from 1 (*to a small extent*) to 5 (*to a large extent*). Sample items include: "Have you been able to express your views and feelings during those procedures?", "Have you been able to appeal the outcome (leader selection) arrived at by those procedures?", and "Did you have influence over the outcome arrived at by those procedures?" In total, the questionnaire is composed of 7 items. Instructions for the procedural justice questionnaire read: "The following items refer to the procedures used to determine the team leader. Please fill out the survey to the best of your ability, your responses will be anonymous and be kept confidential, so please answer truthfully."

To address levels of analysis, consistent with the extant literature, individual responses to the procedural justice measure were aggregated to the team-level using the mean (Naumann & Bennett, 2000; Naumann & Bennett, 2002).

Trust in leadership. Trust in leadership is operationalized as the willingness of a team (or team member) to accept the leader's activities, goals, and decisions, and to work hard to achieve them. Participants rated their trust in their leader using the "Measurement Scale for Trust in Leader" which was developed by McAllister (1995) and adapted by Dirks (2000). This scale has been validated and used throughout the trust in leadership literature (Dirks, 2000; Mach et al., 2010; McAllister 1995). Dirks (2000) conducted a principal components factor analysis which indicated that all items loaded onto a single factor accounting for 80% of the variance, and also that the items loaded on to that factor had values ranging

from .84 to .96. Cronbach's alpha for this scale was 0.96. Though Dirks (2000) calculated an Rwg of 0.87, that metric will not necessarily be the same for this study, so one will be computed to ensure that aggregation is appropriate (James et al., 1984).

In total, the questionnaire is composed of five items, with responses measured on a 7-point likert type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Some sample items are: "Most team members trust and respect the leader," "I can rely on the leader not to make my job more difficult by poor leadership," and "Other team members consider the leader to be trustworthy." It is important to note that the wording for some of the questions was adjusted for this study. For example, the referent was changed from "coach" in Dirks (2000) study to "leader in this study. Instructions for the trust in leadership questionnaire read as follows: "Please fill out the survey to the best of your ability about your personal level of trust in your leader. Your personal responses will be anonymous, so please be sure to answer truthfully."

To address levels of analysis, individual responses regarding trust in leadership were aggregated to the team-level using the team mean of trust in leadership (Dirks, 2000; Mach et al., 2010).

Team performance. Team performance is operationalized as the overall effectiveness of the strategic management team. To obtain an objective measure of the team's performance, project grades, which were assigned by the instructor, were collected from each team member. Each team member earned the same number grade (e.g., 95) on the project. Project scores could range from 0 points to

150 points. To capture an additional measure of team performance, participants rated their team's performance using the "Team Performance" scale, developed by Schaubroeck and colleagues (2007). The average of the team member's individual survey responses regarding team performance were aggregated to the team level to generate a team-level team performance score.

Control variables. Familiarity among team members prior to the simulation was collected, as previous literature has shown that such factors may have an impact on procedural justice perceptions (Korsgaard & Roberson, 1995) and trust in leadership (Dirks & Ferrin, 2002; Lewicki & Bunker, 1996). Consistent with previous studies assessing team familiarity (Fisher et al., 2012), a one-item measure of familiarity was employed. Participants were asked, "Overall, how well did you know your team members before this class project?" Ratings will be recorded on a 5-point scale ranging from 1 (*not at all)* to 5 (*very well)*. Mean levels within the teams were used to aggregate familiarity prior to the task and used as a control variable.

Additionally, agreeableness, one of the "Big Five" personality traits, has been linked to trust, generally, as well as trust in leadership. More specifically, individuals higher on agreeableness have been shown to exhibit a greater propensity to trust (Dirks & Skarlicki, 2004; Mooradian, Renzl, & Matzler, 2006). Thus, this trait was included as a control variable in this study and measured through the Ten-Item Personality Inventory developed by Gosling, Rentfrow, and Swann Jr. (2003). Participants were asked to indicate the extent to which the following traits applied to them: "Critical, Quarrelsome" and "Sympathetic,

Warm." Mean levels within the team were used to aggregate agreeableness prior to the task and used as a control variable. Team agreeableness was operationalized as the team mean, as the relationship between individual difference variables and team performance has been demonstrated to be strongest when the individual difference variable is operationalized as the mean, resulting from measures of central tendency (e.g., mean) being the best representation of a distribution (e.g., agreeableness) (Bell, 2007).

Procedure

To collect the data, questionnaires that were created on Qualtrics were distributed online to the students. Specifically, a link to the questionnaire was emailed to the professor, who emailed it to her students. Prior to engaging in the study, students were informed by their Professor that they would receive extra credit points if they completed both surveys. This was done as an attempt to motivate participation from all students. In total, 84% of the students enrolled in the strategic management classes participated.

To establish temporal precedence, data was collected at two time points during the semester. The first distribution of the survey was during weeks 9-10 of the semester at the request of the professor. At time 1, procedural justice perceptions regarding the procedures enacted to select team leaders were collected.

At time 2, during weeks 15-16 of the semester, the following measures were collected: trust in leadership and team performance. Additionally, familiarity, demographic, and personality data were collected on the same

questionnaire. Because this research focuses on group member's procedural justice perceptions, as well as the extent to which team members trust their team leader, students were asked, at the beginning of the questionnaire, if they were the team leader. If the student indicated "yes," the survey was programmed to skip over the procedural justice and trust in leadership items to the team performance questions. This was done to avoid having the leaders' input bias the results, as only the group members' procedural justice perceptions regarding the selection process and their level of trust in leadership are of interest.

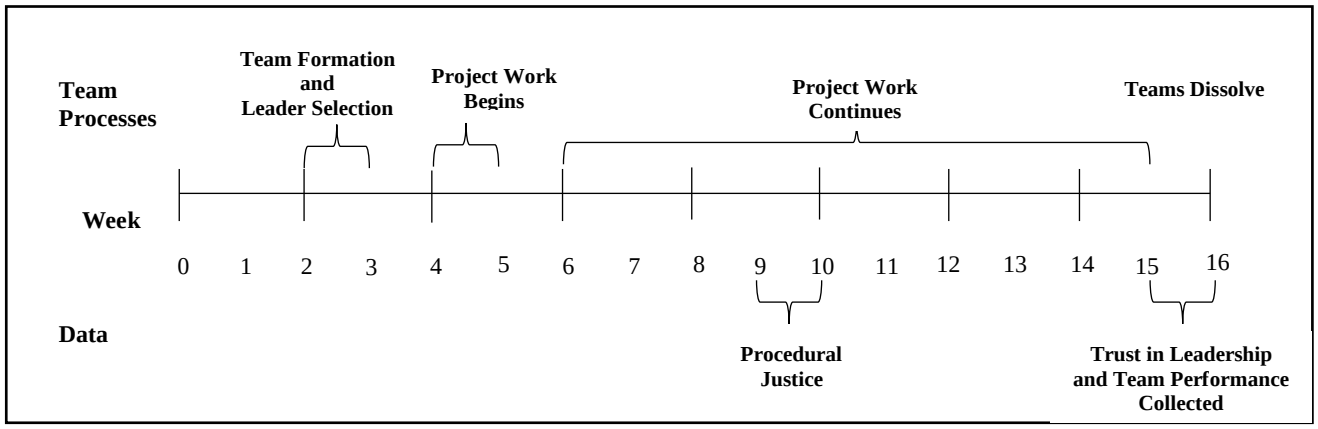
To assess team performance objectively, in addition to the subjective self-report team performance measure, students were asked at time 2 to indicate their number grade (e.g., 95) on the project (note: all team members earned the same grades). Students completed an informed consent form before engaging in the questionnaire, and were reminded by their professor that they were not required to fill out any of the survey items or disclose their grades if they chose not to do so for privacy reasons.

After the survey completion period passed, students who completed both questionnaires were awarded extra credit by the professor for assisting in the research. To ensure that the questionnaires were non-identifiable and that individual data was allocated to the appropriate team, students provided their team names at the top of their questionnaire, as well as the last four digits of their phone numbers. A separate page was included for entry of the students' email address so those who completed both surveys would receive extra credit. The questionnaire responses and email addresses were recorded in separate databases

to ensure that the e-mail addresses could not be linked to the individual's confidential responses.

Figure 2

Experimental Procedures and Timeline



Results

Initial Analyses

The usable data from the 132 students comprising 47 teams was analyzed. For each questionnaire completed (i.e., procedural justice, trust in leadership), items were averaged to create survey scores for each individual. Intra-class correlations (*ICC(1), ICC(2)*) and interrater agreement assessments (Rwg_j's) (James et al., 1984) were then calculated to justify aggregation of the individual responses to the team level. The analyses yielded an rwg_j median value of 0.804 (*ICC(1)* = 0.041, *ICC(2)* = 0.10) for procedural justice, and a median rwg_j value of 0.967 (*ICC(1)* = 0.248, *ICC(2)* = 0.431) for trust in leadership. The relatively low coefficients for ICC(2) may stem from small team sizes in the sample (Bliese, 2000). Although no absolute, non-arbitrary value for aggregation

based on rwg_j and ICC have been established, rwg_j values equal to or greater than 0.70 (Castro, 2002; James et al., 1984) and ICC(1) values exceeding 0.05 (Bliese, 2000) is regarded as sufficient to warrant aggregation. Although the ICC(1) value calculated in this sample for procedural justice was below the 0.05 threshold, the rwg_j was above the 0.70 threshold. Unlike the ICC(1) index, which is an omnibus reliability index, the rwg_j statistic is calculated separately for each group, suggesting that there was sufficient within-group agreement across all teams included in the sample (Castro, 2002); As a result, even with the below threshold ICC(1) statistic calculated for procedural justice, procedural justice and trust in leadership were represented as team-level variables. After the calculation of aggregation statistics (i.e., ICCs and Rwg_j), all variables were mean-centered to aid in the interpretation of the regression coefficients, as the scales utilized did not contain a true 0, and to ensure that non-essential collinearity was not an issue.

Descriptive statistics and intercorrelations are provided in Table 1. First, the variance inflation factors (VIF) were examined to determine whether multicollinearity was a problem. The highest VIF was 1.086223, and the mean of the VIFs was 1.086 suggesting multicollinearity was not a problem (Netter et al., 1990). Second, a plot of the residuals was tested to verify that the homoscedasticity assumption was met, which assumes that the variance of residuals is the same for every value of the predicted values (Cohen, Maiersperger, Gower, & Turner, 2003).

Table 1

Means, Standard Deviations, Intra-class Correlations, Interrater Agreement, and Correlations

Variable	*M*	*SD*	1	2	3	4	5	ICC(1)	ICC(2)	Rwg_j
1. PJ	2.64	0.46						0.041	0.10	0.804
2. Trust	1.71	0.76	-.16					0.248	0.431	0.967
3. Sub Perf	1.61	0.55	.06	.47**						
4. Obj Perf	135.7	9.29	-.00	-.15	-.31*					
5. Agree	3.09	0.64	-.32*	.01	-.10	.23				
6. Famil	4.23	0.92	.12	-.01	-.09	-.23	-.24			

Note. $N = 47$. PJ = Procedural Justice, Trust = Trust in Leadership, SubPerf = Subjective Performance, ObjPerf = Objective Performance, Agree = Agreeableness, Famil = Familiarity, ICC(1,2) = Intra-class correlations, Median rwg_j = interrater agreement, * indicates $p < .05$; ** indicates $p < .01$. *M* and *SD* are used to represent mean and standard deviation, respectively

Mediated regression analyses were utilized to examine the hypotheses. More specifically, two mediated regression models were specified: One full model, including control variables as covariates, and a trimmed model, which did not contain any covariates.

Hypothesis Testing

Hypothesis 1 predicted that trust in leadership would mediate the relationship between procedural justice and team performance at the team level of analysis. Previous literature has demonstrated that familiarity amongst team members can impact procedural justice perceptions (Korsgaard & Roberson, 1995) and trust in leadership (Dirks & Ferrin, 2002; Lewicki & Bunker, 1996). Additionally, agreeableness, a personality trait, has been linked to increased propensity to trust. As a result, the mediated regression analysis controlled for

familiarity amongst team members and team mean agreeableness (Dirks & Skarlicki, 2004; Fisher et al., 2012; Mooradian et al., 2006).

To do so, a mediated regression model with covariates was specified, and the Monte Carlo mediation method was utilized to assess mediation effects. Specifically, the mediated regression model was run with team performance (i.e., group grades on the project) as the dependent variable and procedural justice as the independent variable. Trust in leadership was specified as the mediating variable, and familiarity and agreeableness were included as covariates. Table two, which is reported below, shows the results from the mediated model with procedural justice as the independent variable, trust as the dependent variable, and familiarity and agreeableness included as covariates.

Table 2

Regression results using Trust as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	β	β 95% CI [LL, UL]	Fit
(Intercept)	0.01	[-0.24, 0.26]			
PJ	-0.22	[-0.64, 0.19]	-0.17	[-0.49, 0.15]	
Familiarity	0.01	[-0.33, 0.34]	0.01	[-0.31, 0.32]	
Agreeableness	-0.05	[-0.49, 0.39]	-0.04	[-0.37, 0.29]	
					R^2 = .027 95% CI[.00,.11]

Note. $N = 47$. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. β indicates the standardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively.
* indicates $p < .05$. ** indicates $p < .01$.

Examination of the output from the full mediation model with covariates shows that the indirect effects between the IV (procedural justice) and the DV (team performance) through trust in leadership (mediator) are not significant (b = 0.04, 95% CI = -0.06, 0.19, p = 0.55). Consequently, Hypothesis 1 was not supported.

Table 3

Mediation Effects of Trust in Leadership on the Relationship between Procedural Justice and Team Performance; Full Mediation Model with Covariates

		95% CI		
	Estimate	Lower	Upper	p-value
Indirect Effect	0.0362	-0.0603	0.19	0.55
Direct Effect	0.1031	-0.3908	0.56	0.66
Total Effect	0.1392	-0.3474	0.61	0.55
Prop. Mediated	0.0580	-2.8107	3.01	0.76

Note. N = 47.
Monte Carlo Simulations: 1000
[a] If the CI produced for the indirect effect does not include zero then criteria for mediation has been meet (Preacher & Hayes, 2004).

Hypothesis 2 sought to replicate the well-documented finding that trust in leadership leads to increased team performance. Hypothesis 2 predicted that the increased trust in leadership would lead to higher levels of team performance. To examine Hypothesis 2, a regression model which included overall objective performance as the dependent variable and trust in leadership as the independent variable was analyzed. Contrary to expectations, based on previous research (Dirks, 2000; Dirks & Ferrin, 2002), trust in leadership was not found to significantly relate to objective team performance (b = 0.03564, SE = 0.14284, p = *0.44*). In sum, Hypothesis 2 was not supported.

Table 4

Regression results using Objective Performance as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	β	β 95% CI [LL, UL]	Fit
(Intercept)	0.02	[-0.26, 0.31]			
PJ	0.10	[-0.39, 0.58]	0.06	[-0.25, 0.38]	
Trust	-0.18	[-0.53, 0.18]	-0.15	[-0.45, 0.15]	
Familiarity	-0.23	[-0.61, 0.16]	-0.18	[-0.48, 0.12]	
Agreeableness	0.33	[-0.17, 0.84]	0.21	[-0.11, 0.53]	
					R^2 = .110 95% CI[.00,.23]

Note. $N = 47$. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. β indicates the standardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively.
* indicates $p < .05$. ** indicates $p < .01$.

Noted in the method section of this paper, both subjective and objective performance measures were collected. Objective performance measures are those based on quantitative performance metrics that are compared to a predetermined performance standard (e.g., a grading rubric). In contrast, subjective performance measures are those based on the personal judgments and perceptions of individuals (Gibbs, Merchant, Van der Stede, & Vargus, 2005). Though objective performance measures are typically utilized to combat evaluation biases (e.g., leniency, halo effect; Blanz & Chiselli, 1972) associated with subjective performance measures, subjective measures also have benefits by providing additional perception information neglected by objective performance measures (Gibbs et al., 2005). To capture a more in-depth understanding of the procedural justice, trust in leadership and team performance relationship, an additional

mediated regression was run with subjective team performance (i.e., group ratings regarding their own performance) as the dependent variable and procedural justice as the independent variable. Trust in leadership was included as the mediating variable. In line with the expected findings from Hypothesis 2, results from the mediated regression analysis show a positive, significant relationship between trust in leadership and subjective team performance, indicating that increased trust in leadership leads to higher levels of perceived team performance, as reported by the team.

Table 5

Regression results using Subjective Performance as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	β	β 95% CI [LL, UL]	Fit
(Intercept)	-0.02	[-0.21, 0.18]			
PJ	0.14	[-0.19, 0.48]	0.12	[-0.16, 0.41]	
Trust	0.44**	[0.19, 0.68]	0.49	[0.21, 0.76]	
Familiarity	-0.12	[-0.39, 0.15]	-0.13	[-0.40, 0.15]	
Agreeableness	-0.12	[-0.47, 0.23]	-0.10	[-0.39, 0.19]	
					R^2 = .256* 95% CI[.01,.40]

Note. $N = 47$. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. β indicates the standardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively.
* indicates $p < .05$. ** indicates $p < .01$.

Discussion

Many organizations have shifted from a top-down management mandated approach to a more collaborative, team-based environment (Miles & Snow,

1992). This increase in work teams has led to a drastic increase in research conducted in team settings (e.g., Boies et al., 2015; Burke et al., 2006; Dirks, 2000, Mach et al., 2010). Even with the explosion of team research, the bulk of literature still maintains an individual-level focus (i.e., person-level). It is therefore essential that those findings not be falsely or irresponsibly generalized to a higher level of analysis (e.g., atomistic or individualistic fallacy; Diez Roux, 2002).

At the individual level of analysis, researchers have reliably and consistently demonstrated that procedural justice perceptions are a crucial antecedent of trust in leadership (Korsgaard et al., 1995; Korsgaard et al., 2002). At both the individual and team level of analysis, trust in leadership is regarded as one of the most vital conditions for achieving optimal team, and individual, performance (Dirks, 2000; Dirks & Ferrin, 2002). Despite these consistent findings, we cannot infer that the relationships found at the individual level will replicate or hold true at a higher level of analysis (i.e., the team level). Thus, the goal of this study was to examine the relationship between procedural justice, trust in leadership, and team performance at the team level of analysis. This study also indirectly examined procedural justice perceptions resulting from the leader selection process (e.g., whether the process was perceived as fair or not) and its subsequent effect on trust, whereas prior research focused on procedural justice perceptions (e.g., perceptions of fairness) that arise from the procedures implemented by leaders.

This study provides a few noteworthy findings. First, that trust in leadership did not mediate the relationship between procedural justice and team performance. Additional mediated regression analyses were conducted to examine the proposed mediated relationship – trust in leadership mediating the relationship between procedural justice and team performance – using the subjective performance measure that was collected as the outcome variable. Consistent with the findings from the initial mediated regression, results suggest that even using subjective performance, trust in leadership did not mediate the relationship between procedural justice and team performance.

While more research must be conducted to corroborate the findings from this study, these findings have significance for theory and practice, as they suggest that, in line with the atomistic fallacy, relationships that occur at the individual level do not necessarily generalize to higher levels of analysis (e.g., dyad, triad, team-level; Diez Roux, 2002). In regard to organizational practice, these findings suggest that perceptions of fairness about the process through which leaders are selected may not impact subsequent levels of trust in those leaders or team performance. Rather, it is probable that a leader's actions influence the level of trust he or she engenders from team members (Burke et al., 2006) rather than the manner in which their leadership position was attained. Due to the limitations of this study however, as discussed below, this finding requires further examination.

Second, trust in leadership and its relationship to (objective) team performance was not significant, contrary to previous studies (Dirks, 2000; Dirks

& Ferrin, 2002; Mach et al., 2010). More specifically, this study found that teams exhibiting a higher level of trust in leadership was unrelated to team performance. Additional analyses were conducted which examined the relationship between trust in leadership and the individual team members' subjective ratings of team performance. Consistent with findings from the extant literature (Dirks, 2000; Dirks & Ferrin, 2002; Mach et al., 2010), reported trust in leadership did significantly correlate with subjective perceptions of team performance. These findings suggest that increased levels of trust in leadership were associated with higher levels of overall team performance, or perceptions of overall team performance. These findings thus shed light on the importance of team members trusting their leader, though they should be interpreted with caution due to the subjective nature of the outcome variable. The evidence that trust in leadership can affect team performance should be of great interest to organizations as they consider processes geared toward building or developing trust in team leaders in order to improve team performance.

Additionally, it is important to note the correlation observed between objective and subjective team performance. Examination of the correlation table (Table 1) shows that objective and subjective performance ratings were moderately, negatively correlated. This finding may suggest that team members perceived that their team was performing at a higher level than they were actually determined to be by the professor. Evidence from the performance appraisal literature provides further insight into these findings, such that individuals tend to be more lenient with their ratings to appear successful (Spence & Keeping, 2011).

This leniency bias may speak to the underlying reason for the negative correlation between the self-rated (i.e., subjective) team performance scores and the professor determined team performance scores (i.e., objective). More specifically, individuals have a tendency to rate themselves in a favorable light, to enhance their self-image. This may account for high team performance ratings by objectively underperforming teams (Spence & Keeping, 2011). Additionally, though team identity was not measured in this study, it is possible that as team members more strongly identify with their team and begin to view the team as an extension of the self, they may rate the performance of their underperforming team more favorably (Gelfand, Smith Major, Raver, Nishii, and O'Brien, 2006).

The above findings and interpretation of results illuminates the importance of understanding the performance metrics being measured and utilized, such that results and conclusions may vary depending on how one operationalizes their outcomes of interest. In the context of this study, the relationship found between trust in leadership and team performance would have been drastically different had the operationalization of team performance not been considered. For example, if team performance was operationalized solely as the team member's perceptions of team effectiveness – subjective team performance – the conclusion to be drawn from this study would have been that the relationship between trust in leadership and team performance was positive and significant. However, operationalizing team performance objectively paints a different picture, such that the relationship between trust in leadership and objective performance was negative and non-significant. Examination of the different operationalizations of outcomes (i.e.,

subjective versus objective performance) provides a drastically different relationship between the variables of interest, further emphasizing the importance of considering the operationalization of outcomes.

In sum, this paper hypothesized: (1) trust in leadership would mediate the relationship between procedural justice and team performance, and (2) trust in leadership would lead to increased team performance. Inconsistent with the aforementioned hypotheses, findings demonstrated that trust in leadership did not mediate the relationship between procedural justice and team performance, nor did trust in leadership lead to an increased level of team performance.

Implications for Practice

The increasing use of work teams in organizations makes the findings of this study important for practice. Contrary to expectations, the present study did not find that procedural justice perceptions regarding the leader selection process significantly related to the team members' subsequent level of trust in their leader. As such, organizations and practitioners who advise them should perhaps place less of an emphasis on ensuring that team members agree with the selection of the leader as a mechanism for increasing team trust in that leader.

Additionally, much of the existing research on procedural justice and trust in leadership has been focused at the individual level of analysis (Colquitt et al., 2001; Dirks, 2000; Dirks & Ferrin, 2002). The present study provides supplementary evidence for practitioners to consider when examining leadership and team dynamics, such that relationships existing at the individual level do not necessarily translate to the team level (Castro, 2002). They must be cognizant of

the research they are utilizing to inform their practices, as those findings may have different effects when utilized for individual purposes rather than team purposes. At the individual level, procedural justice has been shown to influence subsequent trust in leaders (Korsgaard et al., 1995; Korsgaard et al., 2002). However, this study, which was conducted at the team level of analysis, did not find the same positive relationship between procedural justice and trust in leadership, nor between trust in leadership and objective team performance. As a result of these findings, practitioners should be aware that perceptions of fairness and trust in leadership may not have the same impact on team performance as evidenced at the person-level of analysis.

Strengths and Limitations

Strengths of this study include (a) the use of a student sample, (b) the task in which the participants engaged, (c) the use of psychometrically sound and objective measures, and (d) the internal validity achieved through the employed measurement strategy. First, the use of a student sample allows for increased generalization of findings compared to lab studies (Fisher & Wood, 2007). Second, participants were tasked with completing a strategic management project, which entailed developing a recommendation for an organization that would boost its profits, return on investments (ROI), and increase its competitive advantage. The use of an organizationally relevant task increased the fidelity of this study, as it closely mirrors projects carried out in real-life organizations. Third, the measures utilized in this study, mentioned above, are psychometrically sound. More specifically, the procedural justice measure was subject to rigorous testing

by Colquitt (2001) after its development, demonstrating construct, convergent, divergent, and predictive validity. Similarly, the trust in leadership measure evidenced strong construct and predictive validity (Dirks, 2000; McAllister, 1995). Team performance was assessed objectively through instructor ratings to combat evaluation biases, such as leniency bias and the halo effect, frequently observed when utilizing subjective measures of performance and effectiveness (Blanz & Ghiselli, 1972). Lastly, internal validity was achieved through the two-wave measurement strategy employed, which ensured temporal precedence among the variables examined (i.e., procedural justice, trust in leadership, and team performance), allowing for a stronger indication of the cause and effect links between these variables.

Despite these strengths, this study has several limitations that provide opportunities for future research. First, it is important to consider the aggregation statistics utilized in this study. Both Intra-class correlations (i.e., ICC(1) & ICC(2)) and interrater agreement assessments (Rwg_j's) were calculated to justify aggregation to the team level of analysis. As a result of an above-threshold rwg_j (i.e., $0.804 > 0.7$), which is a measure of interrater agreement utilized for determining appropriateness of aggregation to higher levels of analysis (Castro, 2002), aggregation to the team level was supported. However, the ICC(1), which estimates the amount of variance in individual level responses that can be explained by group level properties (Castro, 2002), was lower for procedural justice than the suggested threshold for aggregation (i.e., $0.041 < 0.05$). This suggests that procedural justice may not have been operating as a team level

construct, which may have contributed to this study's non-significant findings. Additionally, the ICC(2) metrics for both procedural justice and trust in leadership were relatively low, indicating poor reliability between groups on these constructs.

Directions for Future Research

Future research can perhaps contribute to the literature through a reexamination of the hypothesized relationships in this study utilizing alternative aggregation methods. In this study, procedural justice perceptions were aggregated to the team level of analysis as a mean average of individual perceptions, which is consistent with a direct consensus aggregation model (Chan, 1998). However, similar to the aforementioned impact of outcome operationalization (i.e., subjective versus objective performance), the method of aggregation employed can affect findings, as some methods may be more appropriate than others (Chan, 1998; Kozlowski & Klein, 2000). The use of a direct consensus aggregation model in the present study may have failed to capture the variance in individual perceptions of procedural justice, which may explain the non-significant findings on the influence of procedural justice at the team level. Use of a dispersion model (Chan, 1998), may provide a fruitful avenue for future research on the influence of procedural justice at the team level in relation to team performance and trust in leadership. A dispersion model would capture within-group variance in procedural justice perceptions and could perhaps be used as a stronger operationalization of procedural justice at the team level to assess the strength of within-group agreement. Thus, examining the influence of

within-group variance in procedural justice perceptions in teams on the outcomes of interest (i.e., trust in leadership and team performance) may provide a more powerful indicator of the true relationship between team procedural justice perceptions and the outcomes of interest (i.e., trust in leadership and team performance).

Second, though measures of procedural justice and trust in leadership were collected in two different data collection waves to ensure temporal precedence in regard to measurement, the design of this study does not allow for a nuanced understanding of how these relationships evolve over time, and ultimately affect team performance. Previous researchers have argued that most research on organizational justice has focused on how fairness perceptions exist at one point in time, similar to this study, neglecting the fact that fairness perceptions can evolve as individuals and teams encounter new experiences (Jones & Skarlicki, 2012). The negative relationship observed between procedural justice and trust in leadership in this study may be explained by having only measured procedural justice at one point in time, which did not allow for an understanding of the evolution of these perceptions. Initial perceptions of unfairness with resulting distrust in the team leader may dissipate as these fairness perceptions are updated, resulting in an increase in the level of trust in leadership which may ultimately affect the team's performance. As a result, future research directed at examining the relationship between procedural justice perceptions, trust in leadership, and team performance longitudinally should be conducted.

Third, to keep the model parsimonious, additional moderators were not considered in this study, but future research may be able to capture a more holistic picture of the relationships specified in this study through a more thorough examination. Results from this study suggested that procedural justice perceptions and trust in leadership were not related. However, extant research from the leadership literature has demonstrated that leader-member relationships affect procedural justice perceptions, such that high quality leader-member relationships lead to perceptions of fairness, and low quality leader-member relationships lead to perceptions of injustice (Dulebohn et al., 2012). In this study, procedural justice perceptions were collected during weeks 9 and 10 of the semester, so it is possible that these perceptions were conflated by leader-member relationships, thus affecting the data and findings. Future research directed at examining the potential moderating effect of leader-member relationships (i.e., LMX) may advance knowledge of the conditions under which procedural justice perceptions do affect trust in leadership, and ultimately team performance.

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Appendix A

Familiarity measure: As used in Fisher, Bell, Dierdorff, & Belohlav (2012)
Instructions for the familiarity measure read: "The following item refers to how familiar you are with your other team members. Please fill out the questionnaire to the best of your ability. Your personal responses will be anonymous, so please be sure to answer truthfully and to the best of your ability." All responses are on a 5-point Likert scale ranging from 1 (not at all) to 5 (very well).

1. Overall, how well did you know your team members before this class project?

Appendix B

Procedural justice perceptions: The dimensionality of organizational justice (Colquitt, 2001)

Instructions for the procedural justice questionnaire read: "The following items refer to the procedures used to determine the team leader. Please fill out the survey to the best of your ability, your responses will be anonymous and be kept confidential, so please answer truthfully."

All responses are on a 5-point Likert scale ranging from 1 (to a small extent) to 5 (to a large extent)

To what extent:

1. Were you able to express your views and feelings during the leader selection procedure?
2. Did you have influence over the leader selected by the procedures?
3. Were the procedures free of bias?
4. Were the procedures based on accurate information?
5. Were you able to appeal the leader selected by the procedures?

Appendix C

Trust in leadership: Measurement scale for trust in leadership (Dirks, 2000)

Instructions for the trust in leadership questionnaire read as follows: "Please fill out the survey to the best of your ability about your personal level of trust in your leader. Your personal responses will be anonymous, so please be sure to answer truthfully."

All responses are on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree)

1. Most team members trust and respect the leader.
2. I can talk freely to the leader about difficulties I am having on the team and he/she will want to listen.
3. If I shared my problems with the leader, I know he/she would respond constructively and caringly.
4. I have a sharing relationship with the leader. I can freely share my ideas, feelings, and hopes with them.
5. The leader approaches his/her job with professionalism and dedication.
6. Given the leader's performance, I see no reason to doubt his/her competence.
7. Other team members consider the leader to be trustworthy.

Appendix D

Team Performance (Schaubroeck, Lam, & Cha, 2007)

Instructions for the team performance portion of the questionnaire read: "The following items refer to how well your team performed on your group project. Please fill out the survey to the best of your ability, your responses will be anonymous and be kept confidential, so please answer truthfully."

All responses are on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree)

1. This team is very competent.
2. This team gets its work done very effectively.
3. This team has performed its job well.

Appendix E

Ten-Item Personality Inventory (TIPI): Gosling, Rentfrow, & Swann Jr. (2003)

Instructions read: Here are a number of personality traits that may or may not apply to you. Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

All responses are on a 7-point scale ranging from 1 (disagree strongly) to 7 (agree strongly)

I see myself as:

1. _____ Extraverted, enthusiastic.
2. _____ Critical, quarrelsome.
3. _____ Dependable, self-disciplined.
4. _____ Anxious, easily upset.
5. _____ Open to new experiences, complex.
6. _____ Reserved, quiet.
7. _____ Sympathetic, warm.
8. _____ Disorganized, careless.
9. _____ Calm, emotionally stable.
10. _____ Conventional, uncreative.

Appendix F

Participant Demographic Questions
(These questions will be provided at the end of the study.)

What is your age?

Sex:
- Male
- Female

GPA: _____

Score on Strategic Management Project: _____

Race/ethnicity:
- American Indian or Alaska Native
- Black or African American
- White
- Asian or Asian American
- Hispanic or Latino
- Other (please specify):