A Combined Model of Uncertainty Management Theory and the Group Engagement Model of Identity

by

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ABSTRACT

Prior research has established the group engagement model and uncertainty management theory as motivational explanations of the fair process effect. Although studies have supported each of these frameworks independently, research has not examined a combined model of the group engagement model and uncertainty management theory. To test the combined model, I administered a subordinate survey containing items on justice, economic evaluations, job-related uncertainties, organizational identification, and job engagement. A second survey, administered to supervisors, obtained helping and task performance evaluations on subordinates. The results did not support the combined model and significant interactions for uncertainty management theory were not in the proposed directions. In light of the results, *post hoc* analyses were performed which aimed to examine the data under a new theoretical lens. The results of the dissertation hypothesis testing and *post hoc* analyses are then discussed with implications for future research.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1: INTRODUCTION

The last 25 plus years have seen a flourish of research in organizational justice (Colquitt & Greenberg, 2003; Colquitt, Greenberg, & Zapata-Phelan, 2005). One of the most prominent and frequently observed phenomena in the organizational justice literature is the "fair process effect" (Greenberg, 2000). The fair process effect is the positive influence of individuals' procedural fairness perceptions (i.e., evaluation of the fairness of procedures) on attitudinal and behavioral reactions to decisions and outcome distributions such as outcome satisfaction and decision acceptance (Folger, Rosenfield, Grove, & Corkran, 1979). The robustness of the fair process effect has been demonstrated by its appearance across many domains (Greenberg, 2000) and laboratory experiments (e.g., Folger, Rosenfield, & Robinson, 1983; Greenberg, 1987a, 1987b, 1993b; Lind, Kanfer, & Earley, 1990; Van den Bos, Lind, Vermunt, & Wilke, 1997; Van den Bos, Vermunt, & Wilke, 1997).

Vast interest in the fair process effect has led to theoretical developments explaining the motivational factors underlying the effect. Two prominent models developed to explain why and when the fair process effect occurs are the group engagement model (GEM; Tyler & Blader, 2003) and uncertainty management theory (UMT; Lind & Van den Bos, 2002). Although these theories have found strong support in independent empirical investigations (e.g., Blader & Tyler, 2009; De Cremer et al., 2010), little is known concerning the contribution of each when examined together. Van den Bos (2005) called for future research examining the contribution of

different psychological explanations of the fair process effect. Thus, this dissertation contributes to the management literature by examining a combined model of GEM and UMT.

GEM states that social identity is the psychological basis of individuals' engagement in groups such as teams, departments, and organizations (Tyler & Blader, 2003). According to the model, individuals exhibit higher task performance and helping in reaction to fair procedures and treatment because they form social identities with the evaluated group. Individuals are motivated to assist in the viability and success of the group through the adoption of the group as part of their self-concept. This renders them more willing to exert effort on behalf of the group. Strong social identity, thus, makes group success synonymous to individual success (Ashforth & Mael, 1989; Kramer, Hanna, Su, & Wei, 2001).

The social identity perspective within GEM is used to explain why the fair process effect occurs (Tyler & Blader, 2003). GEM proposes that the development and maintenance of favorable identities is a critical motivational force behind work behaviors such as task performance and helping. These social identities are influenced by judgments about formal rules (i.e., procedural justice) and the implementation of these rules and procedures by authority figures (i.e., interactional justice). Procedural justice represents the evaluation of fairness associated with organizational policies and procedures, and interactional justice refers to the interpersonal treatment experienced through the enactment of procedures and everyday encounters by agents such as the supervisor (Roch & Shanock, 2006). Based on favorable experiences by the group displaying this fair treatment, individuals use this information to help them determine if they can safely invest their identities in the group (Tyler & Blader, 2003). Procedural and interactional justice are thought to be critical, guiding the decision to invest their identity in the group. Individuals who make favorable fairness assessments have a positive

feeling about their group identity which benefits individuals' overall self-concept. Thus, these justice judgments serve as antecedents of group identity. Studies suggest that individuals exert effort on behalf of the group based on reactions to formal rules and implementation of these rules by authority figures (Rupp & Cropanzano, 2002; Tyler & Blader, 2000). Social identity evaluations, therefore, help explain the relationships of justice judgments with work behaviors and attitudes. This hypothesis is termed the *social identity mediation hypothesis* (Tyler & Blader, 2003). A recent field study by Blader and Tyler (2009), representing the only comprehensive examination of GEM since Tyler and Blader's (2000) original study, found that social identity fully mediated the relationship between procedural justice and helping behavior, supplying ample support for the theory.

In contrast to GEM, UMT states that uncertainty moderates the relations of justice judgments with work behaviors and attitudes (Lind & Van den Bos, 2002). In organizational contexts, uncertainty can arise regarding one's job, the trustworthiness of a supervisor, or other work-related issues (i.e., job-related uncertainty). Job-related uncertainty is an undesirable experience in organizational contexts and UMT proposes that fairness perceptions are a means of rectifying this negative experience. The theory suggests the fair process effect occurs because these fairness perceptions offer a way of coping with the lack of information associated with uncertainty. High uncertainty requires individuals to engage in sense-making to gain some clarity within the uncertain context. In essence, fairness judgments become more critical in highly uncertain contexts evident in stronger relationships of fairness with work attitudes and behavior. Positive fairness assessments help ameliorate any uncertainty-induced discomfort by supplying information that the group is fair and individuals trust that this treatment will continue into the future. Recent field studies have found strong support for UMT (De Cremer et al., 2010;

Tangirala & Alge, 2006; Thau, Aquino, & Wittek, 2007; Thau, Bennett, Mitchell, & Marrs, 2009). Thus, GEM and UMT represent two credible theories of motivation behind the fair process effect.

Because GEM and UMT have not been previously tested together, I examined a combined model of these frameworks. Concurrently examining these two theories serves to advance knowledge of the fair process effect by incorporating the influence of contextual job-related uncertainty within the social identity perspective. Specifically, I propose to examine the utility of these two models in explaining task performance, citizenship behavior, and job engagement. UMT clearly specifies the importance of justice with respect to performance and helping. However, GEM's key argument is that social identity not only influences task performance, helping, and motivation but also helps explain the linkages of procedural justice, interactional justice, and economic evaluations of pay and incentives with these variables. Thus, justice and favorable evaluations of economic outcomes received are antecedents of behaviors valued by the group including the behaviors tested here. Job engagement (i.e., a motivational state where individuals immerse themselves in their work) in particular has also not been tested in previous GEM and UMT field research. Thus, all three outcomes characterize organizationally desired behaviors and attitudes, and are key outcomes for testing the fair process effect from a GEM and UMT stance. Support for the relationships between justice and these outcomes would provide further verification for both theoretical frameworks and an understanding of the role of social identity in the presence of job-related uncertainty.

In addition to potential theoretical contributions, this dissertation can benefit practicing managers by offering insight into the role of justice in the presence of job-related uncertainty. Managerial activities such as conflict management and ensuring fair performance appraisals can

enhance justice perceptions, but these activities may require substantial time commitments (Cropanzano, Bowen, & Gilliland, 2007). During uncertain times, managers may choose to overlook addressing these activities and instead focus on more immediate concerns of daily operations. The results of this dissertation could provide guidance as to when it is important to focus on justice perceptions, based on associations with social identity in the presence of high and low job-related uncertainty. This would allow practitioners to guide their efforts to activities promoting positive work behaviors given their limited time availability.

In summary, I have outlined an initial argument for simultaneously testing GEM and UMT, two motivational explanations of the fair process effect. Examining GEM and UMT in tandem should provide management researchers with added knowledge concerning the contributions of each theoretical framework to the fair process effect. This dissertation attempts to provide this contribution and is organized in the following manner. Chapter 2 starts by introducing a brief history of justice and the fair process effect. Then, GEM and UMT are further detailed and hypotheses are introduced for both models independently. Finally, I explicate the combined model and offer associated hypotheses. Chapter 3 describes the methodology used for hypothesis testing with results and *post hoc* analyses appearing in Chapter 4. Finally, this dissertation closes with Chapter 5 which discusses the results and gives new future research directions.

CHAPTER 2: LITERATURE REVIEW AND RESEARCH HYPOTHESES

The History of the Fair Process Effect

Fairness judgments in the workplace are based on salient issues such as pay received in comparison to others, the manner in which decisions are made and implemented, and the sensitivity with which organizational decisions are explained (Greenberg, 1996). Collectively, these judgments comprise perceived organizational justice (i.e., the extent to which employees judge organizational events as fair). Attention has been paid to organizational justice because people tend to focus on what is fair in shaping their own behavior and reacting to the behavior of others (Tyler, Boeckmann, Smith, & Huo, 1997; Tyler & Smith, 1997). Organizational justice researchers have generally accepted three distinct forms of justice: distributive, procedural, and interactional justice (Cropanzano, Byrne, Bobocel, & Rupp, 2001).

Distributive Justice

Early justice research focused primarily on the fairness of outcomes received (i.e., distributive justice). This initial research utilized Adam's (1965) equity theory as the basis for determining whether an outcome is considered fair. The theory suggested that fairness judgments are made by individuals subjectively evaluating the ratio of their contributions to outcomes in relation to the ratio of another referent individual. Equitable outcomes, where the ratio of the individual was equal to the ratio of the referent other, were considered fair. In addition to equity, research has shown that other allocation rules such as equality and need can be used in establishing distributive justice judgments (e.g., Leventhal, 1976). Which allocation rules (i.e., equity, equality, need) are used is thought to be invoked by contextual and personal motive variables (Deutsch, 1975). For example, organizations that promote team harmony may find

members using equality rules to form justice perceptions instead of an equity or need rule. The situation as well as personal differences is thought to invoke the primacy of a specific rule, and drive distributive justice appraisals.

Procedural Justice

Thibaut and Walker (1975) are credited with introducing procedural justice into the justice literature. They found individuals were willing to give up their influence in the decision stage of arbitration as long as they were given voice (i.e., the expression of one's opinion concerning outcomes received through the decision making process) in the process stage. Giving disputants added control over the arbitration process led them to view the process as fair because they were able to present their own arguments and do so in a succinct timeframe. This framework is referred to as the instrumental model of procedural justice because individuals believe that being given process control might allot them increased influence over the actual outcome (Thibaut & Walker, 1975, 1978; Walker, Lind, & Thibaut, 1979). When given process control, individuals are more likely to believe the outcomes are fair and be satisfied with the decision. Essentially, individuals appreciate opportunities to voice their concerns and are more accepting of outcomes following voice opportunities.

Building upon the early work by Thibaut, Walker, and colleagues (Thibaut & Walker, 1978; Walker, LaTour, Lind, & Thibaut, 1974), Folger et al. (1979) found that giving individuals voice increased perceptions of distributive justice and outcome satisfaction. As part of the experimental task, participants were graded on generating smaller words from letters found in a larger word during two trials and a decision maker graded participants and determined how the lottery tickets would be divided (i.e., awarded). Participants were randomly assigned to a biased or unbiased condition where they were told they could have an opportunity to be a decision

maker, but no one was ever actually assigned to the decision maker role. Individuals in the biased condition were told the decision maker would not be the same individual in both word trials whereas the unbiased condition had the same individual for both trials. Having knowledge that one group member would be assigned to rate the original decision maker from the first trial in the second trial could create favoritism for one person. Participants were also assigned to a voice (i.e., given opportunities to voice concerns prior to decision maker grading) or no voice (i.e., no opportunities to voice were granted) condition. Individuals in the voice condition recorded higher levels of distributive justice and outcome satisfaction than individuals in the no voice condition. Additionally, when individuals were not aware of other participants being cheated or were informed that other participants believed the procedures were fair, individuals assigned to the voice condition reported higher satisfaction than those in the no voice condition. These results therefore both supported and found potential boundary conditions (i.e., uncertainty) of the fair process effect because the lack of information about participants being cheated could represent a form of uncertainty. Overall, these fair process effect results supported Deutsch's (1975) claim that individuals are more apt to accept decisions and their consequences if they have participated in the decision making process.

Procedural justice thus is promoted through allowing voice opportunities (Thibaut & Walker, 1975). Leventhal (1980) built upon voice as a component of procedural justice by identifying fair process criteria (correctability, consistency, lack of bias, ethicality, accuracy, and representation) important for judging the fairness of organizational policies and procedures (Leventhal, 1980; Thibaut & Walker, 1975). Organizations can manage procedural justice perceptions by emphasizing voice and using fair process criteria in their policies and procedures.

Interactional Justice

Organ and Moorman (1993) argue that organizations have substantial power differentials among rank employees, so procedural justice alone may not reassure less powerful individuals of the organization's fairness. Individuals experience fairness linked to their treatment by organizational agents. When individuals witness supervisors displaying dignity and respect, offering sufficient justification for organizational procedures, and supplying timely and specific information, interactional justice is said to be present (Bies & Moag, 1986). Although some have questioned the distinctiveness of these two forms of justice (e.g., Tyler & Bies, 1990), meta-analyses support the procedural and interactional justice distinction.

With 190 study samples, Cohen-Charash and Spector's (2001) meta-analysis found several unique relationships of procedural and interactional justice with work attitudes and behaviors. For instance, they found a stronger positive correlation of work performance with procedural justice than with interactional justice. Conversely interactional justice had a stronger positive relationship with leader-member exchange than procedural justice did. This meta-analysis provided some support for the distinctiveness of these constructs because the two forms of justice had differing correlational strengths with certain attitudes and behaviors.

Colquitt, Conlon, Wesson, Porter, and Ng's (2001) meta-analysis also found similar distinctions. Despite this meta-analysis not specifically examining interactional justice, it did find a distinction between procedural justice and two forms of interactional justice, interpersonal and informational justice. Greenberg (1993a) separated interactional justice into two types of interpersonal treatment: interpersonal and informational justice, and Colquitt et al.'s (2001) meta-analysis utilized these types. Interpersonal justice is the degree to which employees are treated with dignity and respect by supervisors, and informational justice assesses the fairness

displayed by supervisors when explaining why procedures and outcomes are handled in their current manner. Colquitt et al.'s (2001) meta-analysis found stronger positive correlations of performance with procedural justice than with both forms of interactional justice. Additionally, both forms of interactional justice had stronger positive correlations with individually-referenced helping behavior than procedural justice did.

These two meta-analyses provided evidence for the unique contributions of procedural and interactional justice with attitudes and behaviors. Researchers thus need to examine both procedural and interactional justice when testing fair process effect theories because individuals use different criteria when evaluating each type of justice (Bies, 2001). Previous research has even used fair process effect arguments for examining interactional justice in addition to procedural justice (Collie, Bradley, & Sparks, 2002; Hui, Au, & Zhao, 2007).

Collie et al. (2002) examined the effect of procedural and interactional justice on distributive justice and customer satisfaction. This experiment created a theme park restaurant scenario in which there was a dispute over the cost of a discounted meal. Psychology students were assigned to one of four conditions of varying social information: no comparison information (i.e., unaware of other student purchase costs), a better cost condition (i.e., the other student paid less than the focal individual), a worse cost condition (i.e., the other student paid more than the focal individual), and an equivalent cost condition (i.e., the other student paid the same). In each of these treatments, participants were afforded either voice (i.e., given an opportunity to complain and fill out a feedback card) or no voice (i.e., no opportunity to supply feedback), and treated with either respect (i.e., the restaurant attendant displayed concern and was sympathetic) or no respect (i.e., the restaurant attendant displayed no concern and was rude). Students then responded to surveys assessing procedural justice, interactional justice, distributive

justice, and satisfaction based on their experience as a customer (i.e., customer satisfaction). Across all conditions, interactional justice predicted distributive justice and customer satisfaction, but procedural justice did not exert a significant main effect on these two dependent variables. This study indicates the need to examine the fair process effect using both procedural and interactional justice because interactional justice could exert an influence even where there is no procedural justice effect.

Fair Process Effect Relationships

To examine the fair process effect, I propose to test the relationships of procedural and interactional justice with task performance, citizenship behavior, and job engagement. These relationships were chosen because performance and motivation have been linked to one's social identity at work (Tyler & Blader, 2003) and these same relationships should also be influenced using a UMT lens (Lind & Van den Bos, 2002). These relationships thus represent credible illustrations of the fair process effect.

Task Performance

Task performance involves behavior typically specified in a job or role description (Tyler & Blader, 2000). It represents the core required job activities for which employees are hired. Supervisors monitor these behaviors to ensure subordinates are meeting the expectation levels set forth for the position.

Organizational Citizenship Behavior

Organizational citizenship behavior (OCB) is more discretionary than task performance behavior because these behaviors are not specified in employees's job role descriptions. These extra-role behaviors include altruism (i.e., coworker assistance), courtesy (i.e., actions focused on the prevention of problems), conscientiousness (i.e., job dedication), civic virtue (i.e.,

participation in administrative and political organizational functions), and sportsmanship (i.e., tolerating undesirable characteristics associated with the organization) (Organ, 1988, 1990; Podsakoff, MacKenzie, Moorman, & Fetter, 1990). OCB is thought to contribute positively to the work environment despite its original conceptualization as strictly extra-role (Organ, 1997).

William and Anderson (1991) proposed a two-factor model conceptualizing OCB as being directed toward an individual (OCBI) or the organization (OCBO). These researchers suggested that Organ's (1988) five dimensional taxonomy could be reduced to two factors where altruism and courtesy comprise OCBI, and conscientiousness, civic virtue, and sportsmanship comprise OCBO. Meta-analytic results offer some support for a single-factor OCB structure (Hoffman, Blair, Meriac, & Woehr, 2007), but there are recent studies and a separate meta-analysis that maintain the two-factor structure of OCBI and OCBO (Anand, Vidyarthi, Liden, & Rousseau, 2010; Ilies, Fulmer, Spitzmuller, & Johnson, 2009; Van Dyne, Kamdar, & Joireman, 2008). Based on the latter studies, examining the two factor structure of citizenship behavior provides a more refined examination of the fair process effect without sacrificing generalizability. Additionally, task performance, OCBI, and OCBO represent work behaviors shown to be positive outcomes of fairness with substantial meta-analytic support (Cohen-Charash & Spector, 2001; Colquitt et al., 2001). These behaviors are also thought to be expected behaviors by the supervisor.

Supervisors play a pivotal role as organizational agents in influencing subordinate behaviors. Supervisory treatment can influence subordinate beliefs concerning expectations of behavior and attitudes directed toward peers and the organization. Through successful supervisory efforts, subordinates should be well prepared and willing to engage in both peer- and organization-directed contributions. Thus, when individuals perceive fair procedures and

treatment having knowledge of supervisor expectations, they react by displaying desired work behaviors regardless of the behaviors' referent target (e.g., OCBI, OCBO; Williams & Anderson, 1991). Previous research has used this argument when examining the relationships of justice with performance and helping (e.g., Ambrose & Schminke, 2009; Kamdar, McAllister, & Turban, 2006).

Job Engagement

Although behaviors are viable constructs for capturing reactions to fair practices, it is also important to consider how these justice perceptions influence motivational states such as job engagement. Kahn (1990) defined engagement as the physical, cognitive, and emotional investment of the self in the roles individuals' occupy. When individuals are engaged, they become physically involved, cognitively focused (i.e., vigilant and attentive to work needs), and emotionally connected to their work. Engagement represents the investment of all three energies into active work. Individuals who are engaged find meaning in work because they do not have to sacrifice the self for the obligatory job requirements.

Kahn (1990) detailed several antecedents of job engagement including psychological safety. Psychological safety involves the extent social situations are predictable and consistent where individuals feel at-ease because they know what to expect. For organizations, it is important to be predictable and consistent in the allocation and treatment associated with policies and procedures (Greenberg, 1996). Procedural and interactional justice perceptions may indicate to employees, when favorably evaluated, that the organization is a safe place to invest their selves in their work, manifested in higher job engagement. However, research results for this relationship have been mixed.

Saks (2006) tested several antecedents of job engagement including justice and found that distributive and procedural justice did not predict job engagement. His sample size, however, consisted of only 102 graduate students, and the low sample size may have led to a lack of significant findings. Additionally, items assessing job engagement were generated for the study and upon review may not have tapped all three energy investments as specified in Kahn's (1990) theory. The scale items utilized appeared to exclude the emotional energy component. To overcome this limitation, Rich, Lepine, and Crawford (2010) developed a scale that tapped all three energies and were able to show that job engagement serves as an important mechanism through which organizational antecedents (e.g., perceptions of support) impact job performance. Thus, a higher order construct containing all three energies may be necessary to find effects with justice. According to Kahn (1990), when individuals feel the organization is a safe place to invest their work energies through perceptions of high procedural and interactional justice, they should have higher job engagement.

In summary, procedural and interactional justice are proposed to impact both behavioral and motivational outcomes. Pertaining to these fair process effect relationships, testing both procedural and interactional justice together is also important for furthering our understanding of the fair process effect with respect to these two process-related forms of justice. Now that I have overviewed some initial research supporting the fair process effect and the relationships examined in this dissertation, I will discuss current explanations of the fair process effect.

The Fair Process Effect: The Group Engagement Model

Early explanations of the fair process effect such as the instrumental model may have supplied a constrained view of the fair process effect. The instrumental model in particular relies on individual self-interest as a key underlying component. As a result, the instrumental model is

sometimes referred to as the self-interest model because it may not fully account for the relational nature of human interaction (Greenberg, 1990). This limited explanation of the fair process effect may have been responsible for researchers subsequently turning to relational dynamics as a potential explanation within organizational contexts. The most popular model incorporating a relational component is the group-value model.

The group-value model stipulates individuals may react to the fair process effect, depending upon the extent to which the organization or group employing the procedures exhibits fair treatment increasing their feelings of self-worth (Lind & Tyler, 1988). The model states procedures reveal more relational information than outcomes do. Positive procedures signal to individuals the organization or group cares about and includes them. Individuals use their fair experiences as a gauge of their organizational status and membership. Because individuals view group membership as personally rewarding, they desire to reciprocate the organization's fair treatment of them by exerting more effort on the job. The norm of reciprocity could be thought to act as a motivator for exhibiting job-related behaviors in return for the favorable treatment using a social exchange framework (Blau, 1964; Gouldner, 1960). However, cooperative actions to help the group tend to be shaped more by status and respect than by assessments about the quality of resources received in an exchange format (Moorman & Byrne, 2005). The social identity-based explanation plays down the self-interested nature of many social exchanges putting social identity as the primary motivating factor in cooperative behavior. GEM builds upon the group-value model viewing procedural and interactional justice perceptions as conveying relational information (Tyler & Blader, 2003). In it, social identity is held to be the factor explaining why the fair process effect occurs.

With the introduction of social identity theory (Tajfel & Turner, 1979) into organizational research, we have gained a deeper understanding of processes influencing individual work behaviors. Social identity theory states that people tend to categorize themselves into social groups and identify with the shared beliefs and values associated with group membership (Tajfel & Turner, 1986). These identities can become quite salient for individuals and serve as powerful motivators of social perception and behavior (e.g., Tajfel & Turner, 1979; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987; Turner, Oakes, Haslam, & McGarty, 1994). This motivation occurs because individuals define themselves in terms of the social category affiliated with a particular group (e.g., organization). Individuals seek to maintain positive self-esteem through differentiating themselves from out-group members and may exhibit desired behaviors such as higher task performance to maintain their in-group status. Because identities serve as powerful motivators for desired behaviors, it is important to understand what drives these identities.

Researchers have indicated that fairness is a primary criterion individuals use to evaluate processes, decisions, and treatment they encounter in groups (Tyler, 2000; Tyler & Blader, 2000). These evaluations are reflected in their procedural and interactional justice judgments and witnessing this fair treatment tends to increase desired work behaviors (e.g., task performance, helping). GEM assigns social identity as the motivational force explaining the positive relationships of process-related fairness perceptions with desired work behaviors (Tyler & Blader, 2003). The model proposes that procedures and treatment, as reflected by procedural and interactional justice, communicate information relevant to social identity. When individuals perceive high procedural and interactional justice, they interpret this as suggesting they are valued and respected. This symbolic message of self-worth partly explains why procedural and interactional justice have positive relationships with task performance, OCBI, OCBO, and job

engagement. Based on these fairness judgments, individuals feel they are worthy members and are willing to invest their identities in groups communicating this positive message. When individuals have strong group identities, they perceive successes and failures of the group tantamount to their own successes and failures, and thus act on behalf of the group by exhibiting desired behaviors. GEM thus designates social identity as the motivational factor behind individuals' exhibiting desired behaviors in groups (Tyler & Blader, 2003).

Ashforth and Mael (1989) can be credited with laying a strong foundation for social identity in organizational scholarship. Many studies have been introduced since this seminal work was published. As a result of years of theoretical contributions, social identity theory has been established as an important framework for analyzing behavior in organizations (e.g., Haslam, 2004). One form of social identity is organizational identification. Organizational identification can be defined as a cognitive connection between individuals and the organization where individuals adopt the organization as part of their self-concept or identity (Ashforth & Mael, 1989). A second form of identity in organizations is workgroup identification which represents a cognitive connection an individual holds with department coworkers or the workgroup.

In this dissertation, I focus on organizational identification rather than workgroup identification. Research has found organizational identification has similar effects to workgroup identification as a mediator of the fair process effect. In a two-study field design, Blader and Tyler (2009) examined the relationship between procedural justice and helping behavior. Study 1 found workgroup identity mediated the fair process effect and Study 2 found organizational identity mediated the same relationship where workgroup (Study 1) and organization (Study 2) also acted as the referent for evaluating procedural justice. Thus, the identity referent (i.e.,

organization, workgroup) did not create boundary conditions for the mediating effect of social identity.

Further, organization identification has been shown to be a key motivator of work behaviors and attitudes (e.g., Ashforth & Mael, 1989; Dutton, Dukerich, & Harquail, 1994; Elsbach, 1999; Pratt, 1998). For example, Dukerich, Golden, and Shortell (2002) assessed factors influencing physicians' voluntary cooperative behavior in two health care systems. They obtained 285 usable responses to surveys containing organizational identification, cooperative behavior, and OCB. The results found strong positive relationships of organizational identification with cooperative behavior and OCB. Plenty of research has also supported positive associations of organizational identification with task performance, helping behavior, and other job attitudes including job satisfaction (Olkkonen & Lipponen, 2006; Riketta, 2005).

GEM and Justice

In GEM (Tyler & Blader, 2003), individuals judge fair procedures and treatment as evidence the organization cares about their well-being. They use this information to justify merging the organization and the self as manifested by higher organizational identification. Organization identification then serves as the primary motivating factor shaping individual attitudes, values, and behaviors in the organization. Therefore, the positive relationships of procedural and interactional justice with task performance, OCBI, and OCBO should be explained by organizational identification, as is displayed in Figure 1. Additionally, procedural and interactional justice should serve as indicators that the organization is a safe place to invest their physical, cognitive, and emotional energies in their work evident in positive relationships with job engagement (Kahn, 1990). GEM states that procedural and interactional justice also indicate the organization is a safe place to invest one' identity which explains relationships of

justice with work behavior (Tyler & Blader, 2003). Thus, the same mediating effect of organizational identification should also be found for positive relationships of procedural and interactional justice with job engagement (Refer to Figure 1).

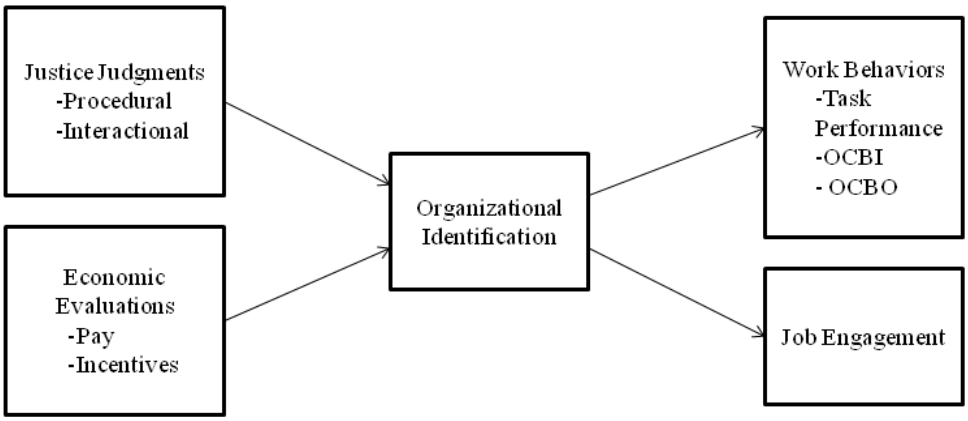

Figure 1. Hypothesized group engagement model.

Blader and Tyler (2009; Tyler & Blader, 2000) were able to show the mediating effect of social identity on the relationships of procedural justice with performance and helping which are forms of cooperative actions. This dissertation builds on these studies by examining interactional justice as an additional antecedent of social identity. Therefore, organizational identification should mediate the relationships of procedural and interactional justice with performance and motivation. With that said, I am able to introduce my first hypotheses.

Hypotheses 1a-d: Organizational identification will mediate the positive relationships of procedural and interactional justice with (a) task performance, (b) OCBI, (c) OCBO, and (d) job engagement.

GEM and Economic Evaluations

According to GEM, however, justice is not the only factor influencing individuals' group identities (Tyler & Blader, 2003). A second basis of individuals' reactions to encounters with

organizations is their economic evaluation of pay and other incentives (Blader & Tyler, 2009). Economic evaluations represent individual's pay satisfaction as well as their belief that incentives are directly linked to effort. These evaluations have long been accepted as motivating work behavior and underpinning pay-for-performance compensation plans (e.g., Lawler, 1990; Milkovich & Newman, 1999; Rynes, Gerhart, & Parks, 2005). Such assessments are based largely on classic theories of motivation such as equitable distributions of pay and incentives (Adams, 1965). Economic evaluations have been used to explain increases in task performance and even OCB (Folger, 1993; Haworth & Levy, 2001; Hui, Lam, & Law, 2000; McAllister, Kamdar, Morrison, & Turban, 2007; Podsakoff, MacKenzie, Paine, & Bachrach, 2000). The positive influence of pay and incentives on OCB is likely due to employee's perceptions that in-role behaviors and OCBs are incorporated into performance evaluations (Haworth & Levy, 2001; Podsakoff et al., 2000). Employees therefore evaluate their economic benefits received, and engage in both task-related and OCB behaviors based on these positive economic evaluations.

Due to their instrumental nature, pay- and incentive-focused models assume that individuals are self-interested actors and influenced only by economic outcomes. Considerable evidence refutes this contention; individuals do not always act in service to their instrumentality and resource concerns (Gintis, Bowles, Boyd, & Fehr, 2005; Haslam & Ellemers, 2005; Miller & Ratner, 1998; Pearce, 1987). Economic evaluations may thus influence concerns other than these instrumental ones and instead carry important value for assessing one's self-worth, relationships, and status in the group or organization (Jenkins, Mitra, Gupta, & Shaw, 1998; Mitchell & Mickel, 1999; Porter, Bigley, & Steers, 1996). Mitchell and Mickel (1999) reviewed management research examining the motivational properties of money. Individuals attach symbolic meaning to money because money is often associated with higher status and power,

and can provide certain luxuries such as time and autonomy. Thus, when employees have high economic evaluations, they may perceive they have status in the organization and are valued and worthy of these incentives. This positive message may lead employees to engage in higher task performance, OCBI, and OCBO, because they acknowledge the recognition given by the employing organization and react accordingly.

GEM states that even such economically grounded assessments of self-worth and status can provide a basis for individual's social identities at work (Tyler & Blader, 2003). Organizational identification may therefore explain why economic evaluations positively relate to OCBI and OCBO, as well as task performance. The same mediating effect of organizational identification could explain the motivational state behind individuals' engagement at work. GEM proposes that economic evaluations positively influence job engagement which can also be explained by social identity (Tyler & Blader, 2003). Kahn's (1990) engagement theory makes arguments similar to GEM for the potential positive relationship between economic evaluations and job engagement. In this theory, Kahn (1990) posits that individuals become engaged when they know greater effort will lead to greater rewards for increased investment in work. For individuals to invest physical, cognitive, and emotional energies into their work, they need to know the organization desires and rewards such behavior. Favorable economic evaluations may indicate the organization holds employees in high regard and views them favorably. Organizational identity may create a sense of comfort for individuals where they are more willing to invest their energies in their work. Therefore, social identity could also explain why the relationship between economic evaluations and job engagement occurs.

Blader and Tyler (2009; Tyler & Blader, 2000) were able to show that social identity did mediate the relationships of economic evaluations with performance and helping which are

forms of cooperative actions. This dissertation plans to examine several cooperative actions and a motivational state resulting from favorable economic evaluations including task performance, OCBI, OCBO, and job engagement. Thus, this dissertation builds upon previous research through testing the relationships of economic evaluations with more refined types of cooperative actions and a motivation state. Or as otherwise stated,

> *Hypotheses 2a-d*: Organizational identification will mediate the positive relationships of economic evaluations with (a) task performance, (b) OCBI, (c) OCBO, and (d) job engagement.

The Fair Process Effect: Uncertainty Management Theory

UMT states that fairness judgments about organizational actions provide employees with the means to manage their uncertainties (Lind & Van den Bos, 2002). The principle of uncertainty management builds upon fairness heuristics theory (Lind, 2001; Lind, Kray, & Thompson, 1998) by positing fairness perceptions as more critical to employees in the presence of uncertainty. Because uncertainty influences employee cognitions, perceptions, feelings, and behaviors, it is a critical variable to study in organizations (Lind & Van den Bos, 2002). According to UMT, employees attempt to cope with job-related uncertainties or make them more tolerable by focusing on fairness-related perceptions to reduce their concerns about these uncertainties (Lind & Van den Bos, 2002). High uncertainty requires individuals to engage in sense-making to a greater degree and fairness is thought to provide critical information for coping with high uncertainty (Curley, Yates, & Abrams, 1986; Van den Bos & Lind, 2002).

Procedural, interactional, and distributive justice are all forms of justice indicated to be made salient in the presence of job-related uncertainty. However, this dissertation focuses on only procedural and interactional justice due to their association with the fair process effect.

UMT proposes that employees assessing favorable procedural and interactional justice may feel the organization holds them in high regard. Thus, when presented with high job-related uncertainty, employees understand that engaging in behavioral and attitudinal reactions to fairness such as higher task performance may ensure that similar fair treatment will be offered in the future. These justice judgments supply employees with a sense of trust in the organization that future fair treatment will ensue and employees when presented with fairness react by increasing their attitudinal and behavioral contributions. This symbolic message makes fairness perceptions such as procedural and interactional justice more critical when job-related uncertainties are high versus low. These reactions to fair treatment can be through increases in task performance, OCBI, and OCBO as well as job engagement. Figure 2 represents the model examined for UMT.

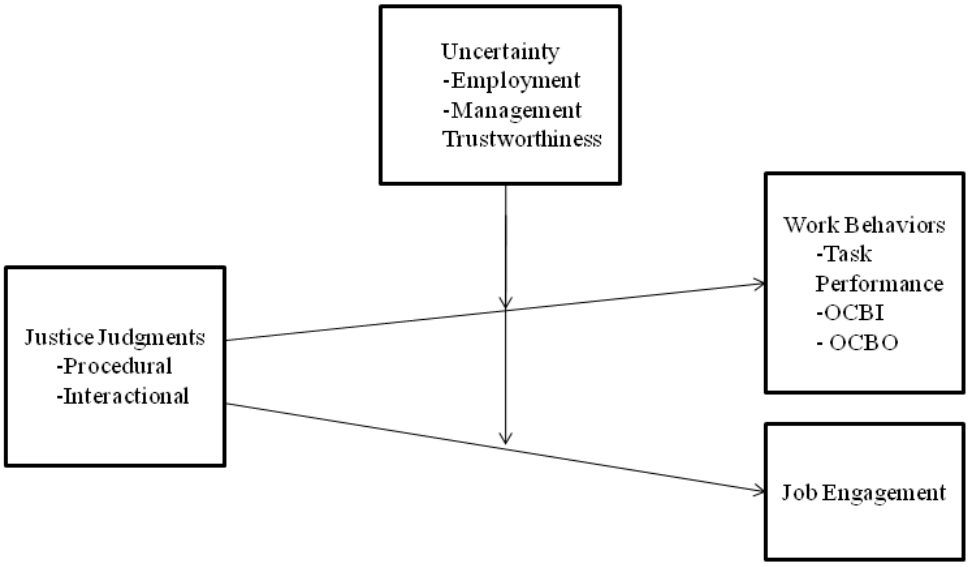

Figure 2. Hypothesized uncertainty management theory model.

Recent field research has obtained support for UMT. Thau et al. (2009) found that the positive relationship between abusive supervision (i.e., unfair interpersonal treatment such as directly refusing requests) and workplace deviance was more pronounced when management

style was uncertain. Management style uncertainty was defined as the perception of certainty a subordinate has about their manager's action and decisions. Managers who are unpredictable and surprising in their actions and decisions were thought to rate high in management style uncertainty and those who are predictable and unsurprising should rate low. These researchers found that high management style uncertainty magnified the positive relationships of abusive supervision with both supervisor- and organizationally-directed workplace deviance. The authors examined these two forms of deviance because they also proposed the interactive effect would be more pronounced for supervisor-directed deviance given the retaliatory behavior would be directed at the source of the injustice (i.e., supervisor). Although the target specific form of workplace deviance did not produce unique effects, the uncertainty moderating effect was found with both deviance forms.

Tangirala and Alge (2006) found interpersonal treatment to be more important in establishing overall fairness perceptions in computer-mediated groups (i.e., groups that interacted via computer discussion boards) than in face-to-face groups (i.e., groups that met in person). These researchers claimed that the informational uncertainty was higher within computer-mediated groups because these groups may find it difficult to understand the social context of their communications with members. The lack of informational clarity was expected to induce the saliency of fair treatment and create a stronger relationship between fair treatment and overall fairness judgments. Conversely, face-to-face groups should have informational clarity because they are able to benefit from observing both verbal- and nonverbal-cues, and therefore less reliant on perceptions of fair treatment. Therefore, fair treatment is more critical in the presence of informational uncertainty, which was evident in a stronger positive relationship between fair treatment and overall fairness in the computer-mediated group. Previous research

has even examined the fairness saliency effect of uncertainty in relation to an attitudinal assessment (i.e., job satisfaction; Diekmann, Barsness, & Sondak, 2004) and task performance (De Cremer et al., 2010). The aforementioned field studies lent support to the applicability of UMT in different contexts and with various job-related uncertainties.

Two forms of job-related uncertainties stemming from managerial actions and employment concerns have been discussed in the literature as uncertainty about management trustworthiness and employment uncertainty. Uncertainty about management trustworthiness is the degree of certainty an employee has about the trustworthiness of supervisors (Lind & Van den Bos, 2002). Employment uncertainty entails certainty about the security of one's job from potential job loss (De Witte, 1999; Van Vuuren, Klandermans, Jacobson, & Hartley, 1991). Diekmann, Barsness, and Sondak (2004) stated the importance of examining organizationally relevant sources of uncertainty in UMT studies, and I believe that uncertainty about management trustworthiness and employment uncertainty represent relevant uncertainties in organizational environments.

Uncertainty About Management Trustworthiness

In developing UMT, Lind and Van den Bos (2002) indicated that uncertainty about an authority's trustworthiness was a critical form of uncertainty to examine. Lind and Van den Bos (2002) cited Tyler, Lind, and colleagues' (Lind, Kulik, Ambrose, & de Vera Park, 1993; Tyler & DeGoey, 1996; Tyler & Lind, 1996) argument that individuals are concerned about being exploited by authorities. This concern over uncertainty about an authority's trustworthiness occurs because employees do not always have complete information about authorities (Lind & Van den Bos, 2002). Using this form of uncertainty, Van den Bos, Wilke, and Lind (1998) performed an experiment where students imagined a situation that they had to meet with grant

committee members to determine if they would receive funding for their thesis. The members were thought to represent authority figures making an important decision for participants' graduate studies. The researchers assigned individuals to one of four combinations of either voice or no voice and trust-certainty or trust-uncertainty concerning the authority. Participants in the trust-certain condition were told that a good friend informed them that the authority was trustworthy, whereas no information was given in the trust-uncertain condition. These researchers found that voice had a stronger positive effect on outcome satisfaction when uncertainty about authority trustworthiness was high versus low. This experiment indicates that individuals do have exploitation concerns and fairness serves as a means of coping with this uncertainty.

Employees have similar concerns about senior managers exploiting them, so the same interactive effects between fairness perceptions and uncertainty about senior management trustworthiness should generalize to organizational settings. Employees experiencing uncertainty about senior management trustworthiness driven from the lack of information about these upper-level employees may believe that favorable procedural and interactional justice supply relevant information for engaging in organizational desired behaviors such as task performance, OCBI, and OCBO. When employees do not have complete information about senior management trustworthiness, they may trust the fairness of procedures and fair displays by their immediate supervisors as enough justification for engaging in these work behaviors until more information can be obtained on these upper-level management figures. This fairness salience would be evident in stronger relationships between fairness and these work behaviors. Because job engagement has been shown to have positive associations with task performance and helping (Rich et al., 2010), the anticipation of future fair treatment may also serve as an intrinsic

motivator evident in higher job engagement. Procedural and interactional justice should show stronger relations with job engagement when uncertainty is high as is argued for actual work behaviors. Therefore, despite employees not knowing how trustworthy senior management is, they may increase their motivational states because they value being treated fairly and react to these assessments accordingly. This stronger attachment to fairness perceptions in highly uncertain environments explains why fairness is more critical when uncertainty is high than when it is low. Or stated formally,

> *Hypotheses 3a-d*: Uncertainty about senior management trustworthiness will moderate the positive relationships of procedural and interactional justice with (a) task performance, (b) OCBI, (c) OCBO, and (d) job engagement, such that the relationships will be stronger when uncertainty is high than when uncertainty is low.

Employment Uncertainty

Although uncertainty about senior management trustworthiness is critical, a general form of work uncertainty may also be present. Van den Bos, Heuven, Burger, and Van Veldhuizen (2006) proposed that employment uncertainty was a salient form of uncertainty for many employees. It represents the degree of uncertainty employees have about their job security into the foreseeable future. Van den Bos et al. (2006) surveyed survivors of layoffs at a chemical business in the Netherlands. These researchers found that distributive justice surrounding the layoffs negatively related to employment uncertainty. In a layoff setting, employment uncertainty may be perceived as related to organizational actions. However, employment uncertainty could also be based on external economic conditions which are not reflections of organizational actions. Because employment uncertainty could be due to external factors, perceptions of fairness may have stronger salience given the uncertainty may not due to

organizational initiatives. Employment uncertainty may induce stronger salience than uncertainty about management trustworthiness because it can be attributed to non-organizational actions. The fairness saliency inducing effect is still present so when individuals perceive high employment uncertainty, the strength of associations between fairness and outcomes are stronger. Therefore, just as the relationships of procedural and interactional justice judgments with task performance, OCBI, OCBO, and job engagement are more pronounced in the presence of high uncertainty about senior management trustworthiness, so should they be in the presence of employment uncertainty. Thus,

> *Hypotheses 4a-d*: Employment uncertainty will moderate the positive relationships of procedural and interactional justice with (a) task performance, (b) OCBI, (c) OCBO, and (d) job engagement, such that the relationship will be stronger when uncertainty is high than when uncertainty is low.

The Fair Process Effect: A Combined Model of GEM and UMT

As stated earlier, a key contribution of this dissertation is a simultaneous examination of GEM and UMT explanations of the fair process effect. Van den Bos (2005) called for research examining multiple perspectives regarding the fair process effect together and this dissertation responds to that call by testing GEM and UMT concurrently.

GEM labels social identity as the explanatory variable of the fair process effect (Tyler & Blader, 2003). The theory indicates that fairness assists in providing individuals with comfort for investing their identities within the group or organization. GEM gives little insight however into contextual instances where this effect may not occur (Tyler & Blader, 2003). It is virtually silent about the effect of organizational identification in the presence of contextual factors such as job-related uncertainty (e.g., uncertainty about management trustworthiness and employment

uncertainty). Fairness according to GEM is simply indicated to positively influence social identity which explains individuals' motivation in groups. Unlike GEM, UMT does specify uncertainty as the contextual variable when the fair process effect matters.

UMT argues that procedural and interactional justice judgments are more salient in the presence of high uncertainty (Lind & Van den Bos, 2002). With this perspective, high uncertainty is thought to invoke sense-making to a greater degree and individuals turn to fairness perceptions as the source of that critical information for coping with uncertainty (Curley et al., 1986; Lind & Van den Bos, 2002). In the presence of high uncertainty, fairness perceptions are more salient as evidenced by increases in the strength of relationships of fairness with attitudes and behaviors. Therefore, fairness supplies desired information in uncertain environments and individuals react more strongly to fairness perceptions in these environments.

This effect of uncertainty on fairness salience for attitudes and behavior should also be found for identity. Individuals need to know that they can safely invest themselves in a group or organization prior to identifying with that entity (e.g., organizational identification). Procedural and interactional justice have been argued to provide information encapsulating these feelings of safety regarding individuals' group identities (Tyler & Blader, 2003). Procedural justice in particular appeals to the social self (i.e., a sense of belongingness and a positive reputation) because it communicates belongingness and status information that motivates individuals to cooperate in groups (De Cremer & Tyler, 2005). This same information should be carried by interactional justice because it is a social form of procedural justice (Bies, 2001). These two types of justice may positively relate to organizational identification because individuals value these fair practices and identify with groups where they witness such treatment. This information comforts individuals and makes them more apt to identify with the organization.

Under conditions of high job-related uncertainty, these positive relationships should exist to a greater extent. The motive of uncertainty reduction causes a strong desire to identify with groups because contextual uncertainty can be reduced through group membership (Hogg, 2000). Uncertainty reduction may act as an additional motive explaining the strengthening of the relationships of procedural and interactional justice with organizational identification when uncertainty is high. The need to feel safe prior to establishing one's identity with a group is still present but there is a greater need to reduce the discomfort brought on by uncertainty. In an experimental design with university students, De Cremer, Brebels, and Sedikides (2008) found belongingness uncertainty (i.e., uncertainty about whether an individual is included in a group) moderated the relationship of voice with group identification. Mean-levels of identification were higher in the voice condition when uncertainty was high versus low. These results indicate individuals do look for opportunities to voice their concerns prior to identifying with the group especially when uncertainty is high. Individuals in organizations may use similar mechanisms when job-related uncertainty is high. They may still react to fair policies and treatment evident in increases in organizational identification, but these reactions should occur to a greater extent when job-related uncertainty is high.

The process induced by high uncertainty is very similar to Lazarus and Folkman's (1984) secondary stress appraisal. As part of this secondary appraisal, when individuals recognize a stressor, they look for ways to cope with that stressor if they are unable to actively change the situation. High uncertainty is representative of a contextual stressor that the employee cannot control but is able to cope through the information displayed in their fair treatment leading to identity. In essence, because the context is currently unchangeable, individuals use fairness information as a way of comforting themselves that this organization is safe to invest their

identity in. The resulting effect is a strengthening of the relationship between fairness and organizational identification when uncertainty is high.

Uncertainty About Management Trustworthiness

Uncertainty about senior management trustworthiness, one form of job-related uncertainty, creates an uncomfortable feeling for many employees. Employees have limited contact with these upper-level managers so they are unable to reduce current perceptions about this uncertainty. Perceptions of fair procedures and treatment, then, give them the security they need to increase their identities within this highly uncertain environment. Essentially, they may view the fairness displays as satisfactory indications of status and respect despite the lack of information about senior management trustworthiness. Thus, the positive relationships between fairness and organizational identification are strengthened when uncertainty about senior management trustworthiness is high. In turn, once individuals have increased their identities in the organization, the increased connection with the organization should lead to even higher levels of organizationally-desired behaviors and attitudes such as those tested here. In other words, any increase in organizational identification should in turn lead to increases in behavior and motivation (Tyler & Blader, 2003). The combined effect should translate into a strengthening of the mediating effect of organizational identification when uncertainty about management trustworthiness is high. This strengthening effect results in social identity continuing to explain the fair process effect when uncertainty is high. Thus,

Hypotheses 5a-d: Uncertainty about senior management trustworthiness will moderate the strength of the mediated relationships of procedural and interactional justice with (a) task performance, (b) OCBI, (c) OCBO, and (d) job engagement via organizational identification, such that when uncertainty is high, the strength of the mediation effect will increase.

Employment Uncertainty

Employment uncertainty represents an uncertainty about the security of one's job (De Witte, 1999). The ambiguity and worry surrounding this uncertainty also represents an undesirable state. Uncertainty about senior management trustworthiness is a context that may occur due only to senior management actions. However, employment uncertainty may stem from poor economic conditions and/or organizational actions. Although different in genesis, this form of uncertainty is expected to generate a similar motivation for uncertainty reduction as with uncertainty about senior management trustworthiness. Employment uncertainty however could potentially be more potent in inducing fairness salience because individuals may be more appreciative of working for a company displaying these fair practices given the questionable employment conditions. This sense of safety gained from employees' positive procedural and interactional justice perceptions should positively influence organizational identification. Again, organizational identification in turn should lead to increases in task performance, OCBI, OCBO, and job engagement. Thus, the same strengthening of the mediational properties of organizational identification in the presence of uncertainty about senior management trustworthiness is also proposed for employment uncertainty. This translates to my final hypotheses.

Hypotheses 6a-d: Employment uncertainty will moderate the strength of the mediated relationships of procedural and interactional justice with (a) task performance, (b) OCBI, (c) OCBO, and (d) job engagement via organizational identification, such that when uncertainty is high, the strength of the mediation effect will increase.

Final Model

Based on the arguments introduced above for GEM and UMT, a first stage moderation model was examined (See Figure 3). For mediated-moderation, a first stage moderation model occurs when the moderator is only on the predictor-mediator relationship within the overall model (Edwards & Lambert, 2007). The first stage moderation model represents the focal contribution of this dissertation. Examining the combined GEM/UMT model may shed light on the influence of social identity in contexts of high and low uncertainty.

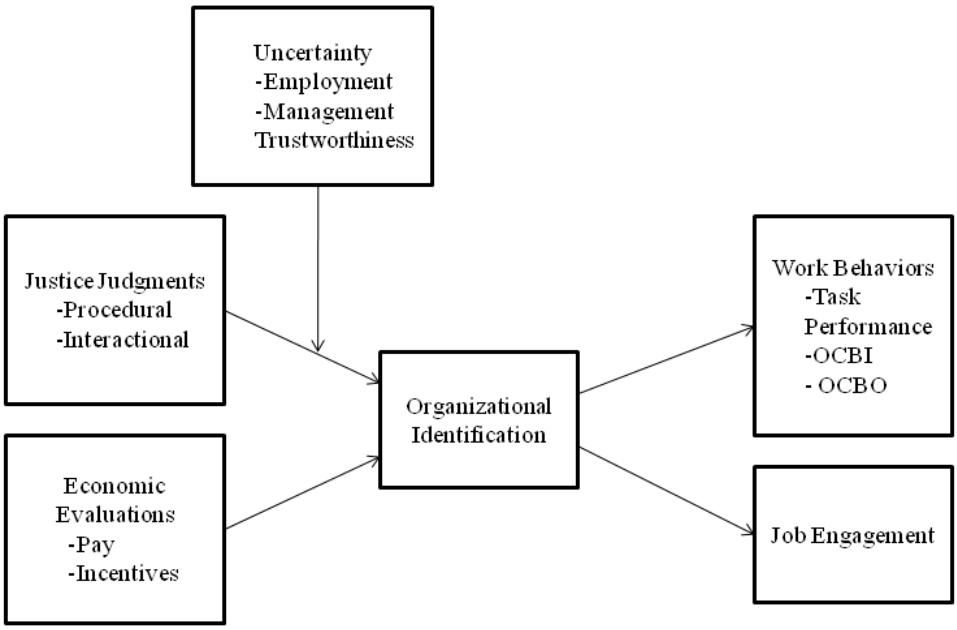

Figure 3. A combined model of GEM and UMT.

This chapter proposed the need to examine a combined model of GEM and UMT. A thorough examination of these theoretical frameworks independently and jointly led to a series of

testable hypotheses. These hypotheses are displayed in Table 1. I now turn to Chapter 3 and explain the methodology utilized in this dissertation.

Table 1
Summary of dissertation hypotheses

Hypotheses 1a-d	Organizational identification will mediate the positive relationships of procedural and interactional justice with (a) task performance, (b) OCBI, (c) OCBO, and (d) job engagement.
Hypotheses 2a-d	Organizational identification will mediate the positive relationships of economic evaluations with (a) task performance, (b) OCBI, (c) OCBO, and (d) job engagement.
Hypotheses 3a-d	Uncertainty about senior management trustworthiness will moderate the positive relationships of procedural and interactional justice with (a) task performance, (b) OCBI, (c) OCBO, and (d) job engagement, such that the relationships will be stronger when uncertainty is high than when uncertainty is low.
Hypotheses 4a-d	Employment uncertainty will moderate the positive relationships of procedural and interactional justice with (a) task performance, (b) OCBI, (c) OCBO, and (d) job engagement, such that the relationships will be stronger when uncertainty is high than when uncertainty is low.
Hypotheses 5a-d	Uncertainty about senior management trustworthiness will moderate the strength of the mediated relationships of procedural and interactional justice with (a) task performance, (b) OCBI, (c) OCBO, and (d) job engagement via organizational identification, such that when uncertainty is high, the strength of the mediation effect will increase.
Hypotheses 6a-d	Employment uncertainty will moderate the strength of the mediated relationships of procedural and interactional justice with (a) task performance, (b) OCBI, (c) OCBO, and (d) job engagement via organizational identification, such that when uncertainty is high, the strength of the mediation effect will increase.

CHAPTER 3: METHODOLOGY

Pilot Test of Measures

As part of the methodological development, a pilot study of dissertation variables was performed to examine the distinctiveness of study factors (e.g., OCBI and OCBO and two types of uncertainty). Employees of a small industrial measurement equipment firm located in the Midwestern United States were contacted for participation in the pilot study. Online survey software (i.e., Qualtrics) was used to collect these data, and subordinates and their supervisors were sent personalized emails inviting them to participate in the pilot study (Refer to Appendix C). The emails contained web links to the survey where participants consented to survey details which were explained in the Information Letter (Refer to Appendix C). After obtaining consent, participants were redirected to the online survey. Some subordinates and supervisors did not respond to these initial survey requests. A follow-up email was sent to these individuals to increase overall response rates on both subordinate and supervisor surveys.

The subordinate survey contained measures assessing uncertainty about senior management trustworthiness, employment uncertainty, procedural justice, interactional justice, economic evaluations, creative self-efficacy, organizational identification, and job engagement. The supervisor survey had supervisors rate subordinates on items relating to task performance, OCBI, and OCBO. Definitions and scale references for collected measures are found in the Subordinate Measures and Supervisor Measures sections which appear later in this chapter. Subordinate and supervisor responses were matched via a coding system. Identification codes were created for all potential participants and once data were matched, these coding lists were destroyed, leaving completely anonymous responses for data analysis. Published research in

GEM and UMT has used similar two survey designs in their collection methodology (Blader & Tyler, 2009; De Cremer et al., 2010; Thau et al., 2009).

Of the 106 subordinates and 23 managers invited to participate in the pilot study, 42 subordinates completed the subordinate survey (39.6% response rate) and 8 managers rated 36 subordinates within the supervisor survey (34.8% response rate). Table 2 shows the means, standard deviations, correlations, and reliabilities for the piloted subordinate survey measures. Table 3 displays the means, standard deviations, correlations and reliabilities for the piloted supervisor survey measures. Because the purpose of the pilot was to examine correlations and reliabilities among study variables, subordinate and supervisor responses were reported separately to increase within group response.

As seen in Table 2, procedural and interactional justice were highly correlated with each other as was expected due to these types of justice being facets of overall organizational justice. These two types of justice are also negatively correlated with the two forms of uncertainty and positively correlated with the remaining subordinate measures. The directions of these correlations align with theory. The marker variable (i.e., creative self-efficacy [the confidence one has about his/her ability to produce creative outcomes]; Tierney & Farmer, 2002, 2011), however, highly correlated with other same source variables. Referring to Table 2, the smallest correlation was found between creative self-efficacy and interactional justice (r = .21). Because the marker variable should not exhibit high correlations with other same source variables, patriotism was chosen to replace creative self-efficacy as a marker variable in the actual dissertation data collection. In addition to correlations aligning with theory, all scales had sufficient coefficient alpha reliabilities (i.e., $\alpha > .70$).

Table 2

Descriptive statistics for subordinate pilot variables

Variables	*Mean*	*SD*	1	2	3	4	5	6	7	8
1. Procedural Justice	3.61	.76	(.91)	.65***	.74***	.22	-.70***	-.65***	.34*	.45**
2. Interactional Justice	4.32	.64		(.92)	.67***	.21	-.60***	-.76***	.21	.36*
3. Economic Evaluations	3.64	.90			(.94)	.35*	-.61***	-.66***	.29	.54***
4. Creative Self-Efficacy	4.20	.49				(.70)	-.21	-.37*	.34*	.49**
5. Uncertainty of Senior Management Trustworthiness	1.94	.93					(.92)	.73***	-.53***	-.41**
6. Employment Uncertainty	2.05	.90						(.88)	-.46**	-.51**
7. Organizational Identification	5.30	1.08							(.87)	.40**
8. Job Engagement	4.52	.47								(.92)

Note. N = 42; Cronbach's alphas appear on the diagonal in parentheses.
***$p < .001$. **$p < .01$. *$p < .05$. Two-tailed test.

Table 3

Descriptive statistics for supervisor-rated pilot variables

Variables	*M*	*SD*	1	2	3
1. OCBI	4.01	.58	(.91)	.58***	.30
2. OCBO	4.14	.48		(.88)	.68***
3. Task Performance	4.22	.45			(.89)

Note. N = 36; Cronbach's alphas are on the diagonal in parentheses.
***$p < .001$. Two-tailed test.

Referring to Table 3, OCBI, OCBO, and task performance scales contain high reliabilities and correlations among these three variables were not extremely high. Therefore, these behaviors may be related to one another, but are still distinct constructs. This initial review of the dissertation measures provided support for progressing with the data collection.

Power and Sample Size Estimation

Prior to the dissertation survey administration, I consulted previous research containing two-way interactions between uncertainty and justice to obtain effect sizes for sample size estimations. Two field studies met this interaction criteria allowing me to review multiple R^2 (i.e., coefficient of determination) values. Thau et al. (2009) performed three regressions containing interaction terms between manager style uncertainty and abusive supervision with workplace deviance as the dependent variable. These regressions produced R^2 values including .17, .43, and .33. De Cremer et al. (2010) performed a regression analysis for uncertainty about organizational standing (i.e., certainty about the extent to which employees are held in high regard) as the moderator for the relationships of procedural justice with performance (R^2 = .16) and OCB (R^2 = .09). Although uncertainty did not significantly moderate the relationship of procedural justice with OCBO, this R^2 value may represent the worst case scenario for a regression with OCB as the outcome. Using this conservative effect size estimate, I performed a power analysis (f^2 = .098, α = .05, *Power* = .80, *Number of predictors* = 10) using the G*Power 3 program (Faul, Erdfelder, Lang, & Buchner, 2007), which estimated a required sample size of approximately 174 responses.

The projected sample size (i.e., 174) was consistent with previous research examining models containing both moderation and mediation (e.g., Ng, Ang, & Chan, 2008) as is the case in this dissertation. Some studies have had a usable response of 205 and still tested moderated-

mediation and/or mediated-moderation (e.g., Brown, Jones, & Leigh, 2005). Thus, this sample size appears to be a justified estimate for the proposed research design especially given the need to match subordinate and supervisor rated survey responses which could impact usable response.

Main Study

To determine the reasonableness of the current survey design given the complexity of the dissertation model, I performed a search of articles using moderation and mediation in the same model that were published in the *Journal of Applied Psychology* over a five year period. This search produced only six articles. Ng, Ang, and Chan (2008) had a 2 year separation between predictor and mediator but they examined personality which was likely already collected by the company. Tepper, Henley, Lambert, Giacalone, and Duffy (2008) had a time separation where independent variables were collected at time 1 and both the mediator and dependent variables at time 2. Cole, Walter, and Bruch (2008) and Zhang and Bartol (2010) used the supervisor to assess the dependent variable and all other variables were collected from the subordinate. Bacharach, Bamberger, and Doveh (2008) used the same source for all variables except they were able to aggregate their moderator to the unit-level (which is not being done in this dissertation). Brown, Jones, and Leigh (2005) also did not separate their data collection but did obtain objective sales performance data. Thus, when obtaining attitudinal and perceptual data for these model types, researchers typically use a separate source for their behavioral assessments such as supervisor ratings and allow all other variables to be collected from the focal employee. This search has shown the currently proposed survey design is reflective of other research using similar methodology. Therefore, I utilized this two survey design in this dissertation.

Sample

Data for the dissertation were collected from subordinates and supervisors in two divisions (corporate and non-corporate) of an industrial equipment company located in the Southeastern United States. Corporate office is comprised of business professionals overseeing the operations of the company. The non-corporate office surveyed consisted of sales professionals tasked with establishing new accounts and maintaining high customer service with existing accounts.

Subordinate Measures

The responses were obtained using the same collection methodology as detailed for the pilot study. Patriotism, however, was used in place of creative self-efficacy as the marker variable in the dissertation. Additionally, demographics (i.e., gender, tenure, and race) were gathered from Human Resource archives prior to petitioning employees for participation, so these variables were not included on the actual survey. All responses were kept completely confidential through the data collection process, and coding lists were used to match the subordinate measures with supervisor measure ratings. Once all surveys were completed and matched, any code lists containing names were destroyed, leaving completely anonymous responses prior to data analysis. All subordinate scales were assessed using a Likert rating-scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) unless otherwise noted. The full scales for these self-report variables appear in Appendix A.

Procedural justice and *Interactional justice* were measured using Colquitt's (2001) seven-item and nine-item scales respectively. Both procedural and interactional justice measures represent indirect measures because they do not directly ask participants "how fair" a procedure or their treatment is (Colquitt et al., 2001). Instead, these indirect measures introduce various

statements concerning process control, fair process criteria, interpersonal treatment, and receipt of fair information to indirectly obtain these two justice forms. Indirect measures are typically used for exogenous variables as is the case here. Colquitt's (2001) organizational justice scale was selected because it has been shown to have good fit indices in CFA analyses and represents one of the most popular scales for assessing organizational justice. Items asked participants to indicate the extent they agree with the following statements on a scale ranging from 1 (To a Small Extent) to 5 (To a Great Extent). The procedural justice scale had participants consider the fairness associated with procedures their supervisor use when making decisions. A sample item for procedural justice is "Have those procedures been free of bias?" (α = .93). For the interactional justice scale, four items related to respect and dignity displayed toward subordinates by their supervisor (i.e., interpersonal justice) and five items assessed the fairness linked to information necessary to perform the subordinate's job (i.e., informational justice). Previous research has used items for interpersonal and informational justice to assess interactional justice (Ambrose & Schminke, 2009). A sample item for interactional justice was "Has your supervisor treated you in a polite manner?" (α = .94).

Uncertainty about senior management trustworthiness was assessed using four items drawn from models of motive-based trust in an authority figure (De Cremer & Tyler, 2007; Tyler & Huo, 2002). Items were altered to specify the amount of certainty with the trustworthiness of senior management where participants responded to items on a scale from 1 (Very Uncertain) to 5 (Very Certain). All responses were reverse coded so that high values reflect uncertainty. A sample item was "How certain are you that you can trust senior management here?" (α = .94). Due to De Cremer and Tyler (2007) finding that the original authority trust scale significantly interacted with procedural justice, this scale was chosen for this dissertation.

Employment uncertainty was collected using Caplan, Cobb, French, Van Harrison, and Pinneau's (1975) four-item scale and one item from Johnson, Messe, and Crano's (1984) job security scale. Participants indicated the degree of certainty about the security of their jobs on a scale from 1 (Very Uncertain) to 5 (Very Certain). As was done for uncertainty about senior management trustworthiness, employment uncertainty items were reverse coded. A sample item is "How certain are you about your job security?" (α = .86).

Economic evaluations consist of evaluations of pay and incentives. Six items were drawn from Tyler and Blader's (2000, 2001) four-item pay satisfaction scale (three of the four items) and five-item (three of five items) incentive scale to assess economic evaluations to reduce the overall survey length. These evaluations were chosen because Blader and Tyler (2009) found support for the economic evaluations factor structure using pay and incentive evaluations, which capture the majority of economic incentives received in an organization. Participants were asked to evaluate their satisfaction with their pay and incentives. A sample item is "Overall, I receive excellent pay at this company" (α = .93).

Organizational identification was measured using Mael and Ashforth's (1992) five-item identification scale. This measure has been used extensively in field research with acceptable fit indices in factor analyses providing support for its use in this dissertation (e.g., Blader & Tyler, 2009; Umphress, Bingham, & Mitchell, 2010). On a scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree), participants had to indicate their level of agreement relating to each item. A sample item is "Working at my company is important to the way that I think of myself as a person" (α = .86).

Job engagement was assessed using nine items from Rich, Lepine, and Crawford's (2010) 18-item scale. This scale is meant to determine the extent that participants agree with

items relating to physical, emotional, and cognitive engagement (i.e., the three job engagement subfacets). The nine items chosen consisted of the three highest loading items from each of the three subfacets reported in previous research (Rich et al., 2010). This scale was chosen because other scales have been criticized for not properly capturing Kahn's (1990) three component conceptualization of job engagement. A sample item is "I work with intensity on my job" (α = .90).

Controls consisted of tenure, race, and gender which were collected from archival sources. Tenure (in months) was expected to exert a positive main effect on the mediator (i.e., organizational identification) and outcome variables (i.e., task performance, OCBI, OCBO, and job engagement). Race and gender were also expected to exert effects on these same variables. Racial and gender differences have been found with job performance attributions made by supervisors (Greenhaus & Parasuraman, 1993). Specifically, with respect to racial effects, differences were found for performance evaluations when comparing Blacks and Whites. Thus, to reduce the number of estimated parameters, I collapsed the racial categories into "0" for White and "1" for Non-White (Black, Asian, Hispanic, Pacific-Islander, Other). Gender was also dummy coded (0 = Male; 1 = Female).

Data were collected from two divisions (i.e., corporate and non-corporate) within the surveyed organization, so there could be a divisional effect influencing variable relationships. In other words, the covariance matrices from each division may be different from one another, which could bias the results. *Box's* (1949) *M* test examines the homogeneity of covariance matrices based on the likelihood-ratio test, and the results did show differences between divisions (*Box's M* = 100.37; *F* = 1.38; *df1* = 66; *df2* = 31538; *p* = .02). The assumption of Box's M is that within-group covariance matrices are equal (i.e., null hypothesis), but the test is highly

sensitive when the comparing groups with unequal observations (Stevens, 2002). With these data, 50 responses were non-corporate employees and 111 responses were corporate employees. Thus, this test may be falsely indicating covariance matrix differences because responses within division are not equal. However, when examining variable mean differences between divisions using simple *t*-tests, differences were found for job engagement ($t = 2.24$; $df = 159$; $p < .05$; $Mean_{Corporate} = 4.32$; $Mean_{Non\text{-}Corporate} = 4.51$) and task performance ($t = -2.45$; $df = 159$; $p < .05$; $Mean_{Corporate} = 4.34$; $Mean_{Non\text{-}Corporate} = 4.09$). These mean differences could alter variance within the construct which could potentially bias relationships with these outcome variables. Given these differences, a dummy code for division (1 = Corporate; 0 = Non-Corporate) was included as an additional control.

Marker variables are variables theoretically unrelated to other constructs in the model when variables are collected from the same source. Because all variables excluding supervisor-rated task performance, OCBI, and OCBO were collected from the same source, common method variance (CMV) could bias the results. Self-report data can raise concerns about inflated relationships due to CMV (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Marker variable analysis has been indicated as a means for determining the extent that CMV is problematic in self-report data (Richardson, Simmering, & Sturman, 2009). Lindell and Whitney's (2001) marker variable partial correlation analysis was used for determining the extent of this potentially biasing effect. Patriotism was used as the marker variable and is defined as a positive love of one's own country (Kosterman & Feshbach, 1989). The marker variable was not expected to influence organizational identity and job engagement. A sample item for this scale is "I am proud to be an American" ($\alpha = .89$).

Supervisor Measures

The full scales for all discussed supervisor rated measures appear in Appendix B.

Organizational citizenship behaviors were rated by the supervisor based on observations of the extent subordinates engaged in OCBI and OCBO behaviors. Williams and Anderson's (1991) OCB scale was originally considered for inclusion. However, McNeely and Meglino (1994) criticized prior OCBI and OCBO scales (e.g., Smith, Organ, & Near, 1983; Williams & Anderson, 1991) for not clearly differentiating the intended target of the citizenship behavior. Lee and Allen (2002) were also concerned that certain items within Williams and Anderson (1991) scale may actually assess workplace deviance. Taking these concerns into consideration, I selected Lee and Allen's (2002) 16-item OCB scale. Eight items assess OCBI and eight items assess OCBO. Supervisors rated the frequency of observed behaviors based on each of the 16-items using a Likert scale ranging from 1 (Never) to 5 (Always). A sample item for OCBI is "Helps others who have been absent" (α = .94). A sample item for OCBO is "Keeps up with developments in the organization" (α = .92).

Task performance was assessed using the Podsakoff and Mackenzie's (1989) five-item in-role performance scale. With this scale, supervisors rated the extent they observed subordinates displaying behaviors relating to their job responsibilities on a Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). A sample item is "[This employee] fulfills all responsibilities required by his/her job" (α = .93). This scale was also shown to be distinct from and not highly correlated with OCB in previous research (Andrews, Kacmar, & Harris, 2009).

This chapter describes the methods used in the administration of this dissertation. In summary, two separate organizations were surveyed as part of the pilot and dissertation study. Throughout the survey development, previous research was consulted to ensure the survey

methodology was consistent and aligned with other similar hypothesized models. Chapter 4 details the results of the dissertation study and the analyses utilized for examining the hypotheses.

CHAPTER 4: RESULTS

Responses

Of the 313 subordinates and 77 supervisors contacted for participation from two company divisions, 234 subordinates and 64 supervisors completed the subordinate and supervisor surveys independently. When subordinate and supervisor responses were matched, the dyad generation produced 161 complete subordinate-supervisor matches (51.40% overall response rate) nested under 56 supervisors. The nested subordinates rated by their supervisors ranged in number from 1 to 9 subordinates (*Mean* = 2.88 rated subordinates; *SD* = 1.84). For the 56 supervisors, 10 supervisors had 1 subordinate rating, 20 supervisors had 2 subordinate ratings, 13 supervisors had 3 subordinate ratings, 5 supervisors had 4 subordinate ratings, 4 supervisors had 5 subordinate ratings, 1 supervisor had 6 subordinate ratings, 1 supervisor had 8 subordinate ratings, and 2 supervisors had 9 subordinate ratings.

Upon further review of the 161 subordinate-supervisor matches, there were 24 cases where 1% or less of the data had missing values. To retain these cases, maximum likelihood imputations were performed on these limited missing values (Enders, 2001; Schafer & Graham, 2002). Demographics for this final usable sample consisted of tenure (*Mean* = 106. 40 months; *SD* = 95.33), gender (52.80% Male), and race (88.82% White; 7.45% Black; .62% Asian; 1.86% Hispanic; .62% Pacific Islander; .62% Other). These demographics were obtained from archival sources allowing me to compare respondents with non-respondents on these variables as a way of examining the potential for non-response bias (Werner, Praxedes, & Hyun-Gyu, 2007). Reported results could be biased if respondents held significantly different characteristics from non-respondents. A simple *t*-test was used to examine differences between these groups on

tenure as well as differences between groups on gender and race were tested using chi-squared tests. The results indicated that tenure (t = 1.36; df = 311; p = .18), gender (χ^2 = .62; df = 1; p = .43), and race (χ^2 = 6.68; df = 5; p = .25) did not differ between respondent and non-respondent groups which shows there is little potential for non-response bias with these data.

Descriptive Statistics

Table 4 presents the means, standard deviations, reliabilities, and correlations of all variables. The variables generally related in expected ways. For example, both forms of uncertainty were negatively related with procedural and interactional justice, and procedural and interactional justice were positively related with organizational identification. Although there were few correlations exceeding .65, some correlations are worth noting. The relationships of procedural justice with interactional justice (r = .60), economic evaluations (r = .64), uncertainty about senior management trustworthiness (r = -.59), and employment uncertainty (r = -.67) are high. Additionally, economic evaluations is highly correlated with both forms of uncertainty (both relationships had r = -.58). In addition, OCBI and OCBO are highly related to one another (r = .76). Despite some of these correlates being theoretically distinct (e.g., procedural justice and economic evaluations), models merging these and the aforementioned highly correlated constructs were examined in the CFA.

Table 4

Means, standard deviations, reliabilities, and correlations for dissertation variables

Variables	*M*	*SD*	1	2	3	4	5	6	7	8
1. Corporate(1)/NonCorporate(0)	.69	.46	---	-.13	.29***	.03	.01	.09	-.10	-.08
2. Associate Tenure in Months	106.40	95.33		---	-.10	-.11	-.07	-.13	.03	.15
3. Associate Gender	.47	.50			---	.26**	.00	.05	-.06	-.04
4. White(0)/NonWhite(1)	.11	.32				---	-.13	-.16*	-.05	-.38***
5. Procedural Justice	3.38	.90					(.93)	.60***	.64***	.14
6. Interactional Justice	4.18	.76						(.94)	.40***	.28***
7. Economic Evaluations	3.25	.96							(.93)	.18*
8. Patriotism (Marker Variable)	4.56	.52								(.89)
9. Uncertainty about Senior Management Trustworthiness	2.34	1.09								
10. Employment Uncertainty	2.44	.89								
11. Organizational Identification	5.28	1.08								
12. Job Engagement	4.38	.51								
13. Task Performance	4.26	.63								
14. OCBI	3.95	.77								
15. OCBO	4.00	.72								

Note. N = 161; Cronbach's alphas appear on the diagonal in parentheses.

***$p < .001$. **$p < .01$. *$p < .05$. Two-tailed test.

Table 4

Means, standard deviations, reliabilities, and correlations for dissertation variables (continued)

Variables	9	10	11	12	13	14	15
1. Corporate(1)/NonCorporate(0)	.04	.00	-.07	-.18*	.19*	.00	.04
2. Associate Tenure in Months	-.01	.09	.05	-.05	-.03	-.04	-.01
3. Associate Gender	.06	.04	.02	.00	.07	.01	-.01
4. White(0)/NonWhite(1)	.18*	.14	-.22**	-.08	-.18*	-.19*	-.19*
5. Procedural Justice	-.59***	-.67***	.33***	.34***	.10	.14	.18*
6. Interactional Justice	-.38***	-.57***	.35***	.34***	.25**	.22**	.25**
7. Economic Evaluations	-.58***	-.58***	.37***	.36***	-.10	.05	.10
8. Patriotism (Marker Variable)	-.23**	-.22**	.34***	.31***	.06	.15	.20**
9. Uncertainty about Senior Management Trustworthiness	(.94)	.73***	-.53***	-.40***	.03	-.10	-.13
10. Employment Uncertainty		(.86)	-.51***	-.44***	-.14	-.23**	-.26**
11. Organizational Identification			(.86)	.54***	.10	.19*	.26**
12. Job Engagement				(.90)	.16*	.25**	.34***
13. Task Performance					(.93)	.53***	.48***
14. OCBI						(.94)	.76***
15. OCBO							(.92)

Note. N = 161; Cronbach's alphas appear on the diagonal in parentheses.

***$p < .001$. **$p < .01$. *$p < .05$. Two-tailed test.

Marker Variable Analysis

Prior to proceeding with CFA analyses, a marker variable analysis was performed. Lindell and Whitney's (2001) marker variable analysis tests the extent of CMV among same source variable relationships by partialing out the smallest correlation between the marker variable and another same source variable. Because the marker variable is theoretically unrelated to other same source variables, the smallest correlation is thought to represent common method bias. This effect is partialed out of other same source relationships to determine if CMV is problematic with these data. Two types of correlation corrections are computed for testing CMV: the corrected correlations after partialing out CMV and the disattenuated partial correlations after adjusting for scale reliability. Those equations appear below:

$$r_{Yi \cdot M} = (r_{Yi} - r_S) / (1 - r_S)$$

$$r'_{Yi \cdot M} = ((r_{Yi} / (\sqrt{r_{ii}} * \sqrt{r_{YY}}) - (r_S / (\sqrt{r_{MM}} * \sqrt{r_{YY}})) / (1 - (r_S / (\sqrt{r_{MM}} * \sqrt{r_{YY}}))$$

In the above equation, $r_{Yi \cdot M}$ is the corrected correlation, between the predictor *i* and the criterion variable *Y*, after partialing out any CMV. The zero-order correlation is represented by r_{Yi} and the smallest marker variable correlation is noted as r_S. The disattenuated partial correlation is $r'_{Yi \cdot M}$. The reliabilities of the marker variable, predictor, and criterion variables are represented by r_{MM}, r_{YY}, and r_{ii}, respectively. Zero-order correlations and scale reliabilities for these two adjusted correlations were drawn from Table 4. The smallest variable correlation was found between patriotism and procedural justice (r_S = .14), which was used in the marker variable analysis. With Lindell and Whitney's marker variable test, same source correlations should not be drastically changed when partialing out this small marker variable effect. Therefore, in any cases where a significant correlation becomes non-significant, CMV is

thought to be present. Table 5 displays the results of the marker variable analysis examining unadjusted zero-order correlations along with $r_{Yi \cdot M}$ and $r'_{\text{Yi}\cdot\text{M}}$ values and associated significance levels. None of the same source relationships went from significant to non-significant, so CMV does not appear to be problematic with these data.

Table 5
Assessment of common method variance

Relationships	r	$r_{Yi \bullet M}$	$r'_{\text{Yi}\cdot\text{M}}$
Organizational Identification with			
Procedural Justice	.33***	.22**	.32**
Interactional Justice	.35***	.24**	.34***
Economic Evaluations	.37***	.27***	.37***
Uncertainty about Senior Management Trustworthiness	-.53***	-.45***	-.56***
Employment Uncertainty	-.51***	-.43***	-.56***
Job Engagement	.54***	.47***	.59***
Job Engagement with			
Procedural Justice	.34***	.23**	.33***
Interactional Justice	.34***	.23**	.32**
Economic Evaluations	.36***	.26**	.35***
Uncertainty about Senior Management Trustworthiness	-.40***	-.30***	-.40***
Employment Uncertainty	-.44***	-.35***	-.46***

***$p < .001$. **$p < .01$.

Confirmatory Factor Analysis

I assessed model fit for several theoretically driven confirmatory factor analysis (CFA) models, including the proposed factor structure, using Mplus software (Muthen & Muthen, 2007). Criteria established by Hu and Bentler (1999) were used to determine proper fit and also allowed for comparisons among CFA models. Those fit indices included chi-squared test, comparative fit index (CFI) greater than or equal to .95, standardized root mean squared residual

(SRMR) less than .08, root-mean-square error of approximation (RMSEA) less than .06 with the upper limit of the 90% confidence interval (CI) not exceeding .10.

Due to the high number of parameter estimates, I created item parcels to improve the ratio of participants relative to the number of parameters to be modeled (Little, Cunningham, Shahar, & Widaman, 2002). Item parcels are averages of two or more items that are used as indicators in the CFA. Using item factor loadings for the dissertation measures, parcels were generated by averaging the highest and lowest loading items for a given scale. After the first scale parcel was created, a subsequent parcel was made by averaging the second highest and second lowest items and this process continued until the measure was completely parceled. When a measure had an odd number of items, the last parcel was generated by averaging the remaining three items instead of two items. Landis, Beal, and Tesluk (2000) compared various parceling methods and found using the highest and lowest loading items for parcel creation produced model fits superior to creating parcels from an exploratory factor analysis or from rational content groupings of items.

CFA Model 1 represents the 10-factor hypothesized model, which is comprised of latent factors including procedural justice, interactional justice, uncertainty about senior management trustworthiness, employment uncertainty, economic evaluations, organizational identification, job engagement, task performance, OCBI, and OCBO. CFA Models 2 through 12 are nested factor structures of CFA Model 1 and thus are detailed based on comparable differences in relation to CFA Model 1. CFA Model 2 loaded OCBI and OCBO on one factor. CFA Model 3 loaded task performance, OCBI, and OCBO on one factor. Procedural and interactional justice were modeled on one factor for CFA Model 4. CFA Model 5 combined factor loadings of CFA Models 2 and 4, and CFA Model 6 used factor loadings of CFA Models 3 and 4. CFA Model 7

treated uncertainty about senior management trustworthiness and employment uncertainty as one construct. CFA Model 8 combined the reduced factors found in CFA Models 2 and 7, and CFA Model 9 used the merged factor structures of CFA Models 3 and 7. CFA Model 10 loaded procedural and interactional justice on one factor as well as the two forms of uncertainty. The combining of CFA Model 10 with CFA Model 2, and of CFA Model 10 with CFA Model 3, created the factor structure for CFA Models 11 and 12, respectively. Additional models based on high correlations found in Table 4 were examined in relation to CFA Model 1 but these comparisons did not produce better model fits than the hypothesized factor structure. Because these additional models are not theoretically driven, the results of these comparisons are not reported here.

The hypothesized measurement model (CFA Model 1) had an acceptable fit with the collected data ($\chi^2[360] = 538.96$, $p < .001$; *CFI* = .96; *SRMR* = .04; *RMSEA* = .06, $CI_{90\%}$[.05, .07]). When the other models were compared to the hypothesized model, the Chi-squared distributions for all models were significantly different from the hypothesized model and contained poorer fit indices than the proposed model structure. These fit indices comparisons can be found in Table 6. CFA Model 7 which combined uncertainty about senior management trustworthiness and employment uncertainty did have a strong model fit ($\chi^2[369] = 622.35$, $p < .001$; *CFI* = .95; *SRMR* = .06; *RMSEA* = .07, $CI_{90\%}$[.06, .07]). However, the Chi-squared difference test between CFA Model 7 and the hypothesized model structure was significant ($\Delta\chi^2(9) = 83.39$; $p < .001$), indicating that there were enough differences between these models to justify utilizing the hypothesized structure.

Table 6

CFA model fit indices comparisons

Factor Structure	$\chi^2(df)$	$\Delta\chi^2(df)$	*CFI*	*SRMR*	*RMSEA*	$RMSEA_{90\%CI}$
CFA Model 1	538.96 (360)		.96	.04	.06	(.05, .07)
CFA Model 2	726.9 (369)	187.94 (9)	.93	.05	.08	(.07, .09)
CFA Model 3	906.81 (377)	367.85 (17)	.89	.06	.09	(.09, .10)
CFA Model 4	807.31 (369)	268.35 (9)	.91	.08	.09	(.08, .09)
CFA Model 5	989.40 (377)	450.44 (17)	.88	.08	.10	(.09, .11)
CFA Model 6	1168.49 (384)	629.53 (24)	.84	.09	.11	(.11, .12)
CFA Model 7	622.35 (369)	83.39 (9)	.95	.06	.07	(.06, .07)
CFA Model 8	810.33 (377)	271.37 (17)	.91	.07	.08	(.08, .09)
CFA Model 9	989.87 (384)	450.91 (24)	.88	.07	.10	(.09, .11)
CFA Model 10	883.97 (377)	345.01 (17)	.90	.09	.09	(.08, .10)
CFA Model 11	1071.07 (388)	532.11 (28)	.86	.10	.11	(.10, .11)
CFA Model 12	1249.85 (390)	710.89 (30)	.83	.10	.12	(.11, .12)

Note. All chi-squared difference tests were significant ($p < .001$).

Multi-Level Justification and Preliminary HLM Analyses

Due to the nested nature of subordinates under supervisors, hierarchical linear modeling (HLM), sometimes referred to as random coefficients modeling, was used to test the hypotheses (Raudenbush & Bryk, 2002) using the HLM 6.0 program (Raudenbush, Bryk, Cheong, & Congdon Jr., 2004). HLM allowed me to control for the nested data structure (i.e., subordinates nested under supervisors). In all hypothesis testing, uncentered division, gender, and race as well as grand-mean centered tenure were entered as control variables.

In addition to these controls, group means for task performance, OCBI, and OCBO were entered at level-2 in all models as an additional control for potential nested rater effects (i.e., supervisor) when the same individual-level outcome was examined. For example, when OCBI was tested as a dependent variable, the group average for OCBI was modeled at level-2 to control for any supervisor rater bias. Group means for task performance and OCBO were thus

also entered at level-2 when the associated outcomes were modeled. These level-2 group means were also grand-mean centered. Because job engagement was rated by subordinates, I did not enter group average job engagement at level-2. HLM was still utilized for testing hypotheses with job engagement because it could still vary across groups, and the nested structure would control for this effect. Additionally, all remaining independent variables were grand-mean centered and fixed because all proposed interactions were at level-1, and these paths were not hypothesized to vary across groups.

Prior to hypothesis testing, it is important to test the variability of dependent variables which can be attributed to level-2 variance. Intraclass correlations (ICC) were used to estimate the proportion of variance found between groups or, in this case, supervisors. In two-level models, ICC statistics indicate the percentage of variance in the level-1 outcome that can be attributed to the level-2 intercept (i.e., the supervisor). ICCs are found by dividing the variance at the highest level by the sum of the variances at the highest and lowest levels. For this dissertation, there were only two levels, so ICCs were computed by inputting level-2 variance (σ^2_{u0}) and level-1 variance (σ^2_{e0}) estimates into the following equation:

$$\text{ICC} = \sigma^2_{u0} / (\sigma^2_{u0} + \sigma^2_{e0})$$

Using this equation, five respective null models were created to examine the degree of level-2 variability found in the mediator and outcome variables. Those ICCs were 17.01%, 20.72%, 26.97%, 53.47%, and 52.69% for organizational identification, job engagement, task performance, OCBI, and OCBO, respectively, which supported the use of HLM for hypothesis testing.

It should also be noted that for all hypotheses containing procedural justice and interactional justice as independent variables, these two justice types were modeled separately to

reduce the potential influence of multicollinearity on the results. Multicollinearity is a statistical phenomenon where regression coefficient estimates are less reliable when two or more independent variables are highly correlated (Cohen, Cohen, West, & Aiken, 2003). As a result of multicollinearity, estimates can have large standard errors leading to non-significant or even biased findings. Because procedural and interactional justice are highly correlated ($r = .60$; $p < .001$), analyzing the hypotheses with these variables separately reduced the potential for this biasing effect.

In addition to multicollinearity, data were collected from two separate divisions which had significantly different covariance matrices among study variables according to the Box's M test. The two divisions also contained significant mean differences in job engagement and task performance. Despite including division as a control variable, it is possible that this control may not fully account for these mean differences. By merging these two divisions while mean differences exist, variable variances may be increased or decreased. Because regression aims to explain outcome variance, path coefficients for models containing these outcomes may be influenced by these variance changes. Therefore, all hypotheses were also tested using standardized data by division to account for these mean difference effects. However, these results were only reported if the coefficients differed when using the unstandardized and standardized data.

To standardize the data by division, *Z* transformations were applied to all study variables by mean-centering the data within each division and dividing these centered variables by the division's standard deviation. Once divisional data were standardized, these data were merged. Additionally, when analyses were run using the standardized data, the division control was not included because divisional effects are removed by standardizing focal variables by division.

Hypothesis Testing for Hypotheses 1a-d

Hypotheses 1a-d stated organizational identification will mediate the positive relationships of procedural and interactional justice with (a) task performance, (b) OCBI, (c) OCBO, and (d) job engagement. HLM models associated with Hypotheses 1a-d were run using Baron and Kenny's (1986) causal steps framework which provided justification for examining indirect effects using the Sobel (1982) test. For mediation to exist with the Baron and Kenny method, several steps must be taken. First, the predictor variable must be related to the outcome or criterion. Second, the predictor variable must be related with the mediator as well as the mediator with the outcome. Finally, once these relationships are found, a final regression of the outcome on both the predictor and mediator is performed. If the predictor-outcome relationship no longer is significant while controlling for the mediator, then full mediation is supported. Specified causal paths using HLM analyses are displayed in Table 7 (Hypothesis 1a), Table 8 (Hypothesis 1b), Table 9 (Hypothesis 1c), and Table 10 (Hypothesis 1d). As can be seen in Tables 7 through 10, procedural justice was positively related with organizational identification (β = .35; *SE* = .08; $p < .001$) and interactional justice was related with organizational identification (β = .44; *SE* = .11; $p < .001$). Organizational identification however was not significantly related with task performance, OCBI, and OCBO, so Hypotheses 1a-c were not supported. The path coefficient between organization identification and job engagement was significant (β = .22; *SE* = .03; $p < .001$). Thus, I proceeded with testing the mediation effect for Hypothesis 1d.

Table 7
Organizational identification mediation for the justice-task performance relationship (Hypothesis 1a)

	Dependent Variables											
	OI				Task Performance				Task Performance			
	b	*SE*	*B*	*SE*	*B*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
Intercept, β_0												
Intercept, δ_{00}	5.30***	.17	5.35***	.16	4.24***	.02	4.24***	.02	4.23***	.02	4.24***	.02
Mean Performance, δ_{01}					.99***	.03	.98***	.03	.99***	.03	.98***	.03
For Division slope, β_1												
Intercept, δ_{10}	-.04	.20	-.11	.20	-.02	.03	-.02	.03	-.02	.03	-.02	.03
For Tenure slope, β_2												
Intercept, δ_{20}	.00	.00	.00	.00	-.00	.00	-.00	.00	-.00	.00	-.00	.00
For Gender slope, β_3												
Intercept, δ_{30}	.17	.16	.14	.16	.04	.06	.03	.05	.03	.05	.03	.05
For Race slope, β_4												
Intercept, δ_{40}	-.75*	.28	-.68*	.28	-.06	.15	-.05	.15	-.05	.15	-.05	.15
For PJ slope, β_5												
Intercept, δ_{50}	.35***	.08			.01	.04			.00	.04		
For IJ slope, β_6												
Intercept, δ_{60}			.44***	.11			.03	.07			.03	.07
For OI slope, β_7												
Intercept, δ_{70}									.01	.04	.01	.03

Note. PJ = Procedural Justice; IJ = Interactional Justice; OI = Organizational Identification.
***$p < .001$ *$p < .05$

Table 8
Organizational identification mediation for the justice-OCBI relationship (Hypothesis 1b)

	Dependent Variables											
	OI				OCBI				OCBI			
	b	*SE*	*b*	*SE*	*B*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
Intercept, β_0												
Intercept, δ_{00}	5.30***	.17	5.35***	.16	4.00***	.03	4.01***	.03	4.00***	.03	4.01***	.03
OCBI, δ_{01}					.99***	.02	.98***	.02	.99***	.02	.97***	.02
For Division slope, β_1												
Intercept, δ_{10}	-.04	.20	-.11	.20	.01	.02	-.01	.02	.01	.02	.00	.02
For Tenure slope, β_2												
Intercept, δ_{20}	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
For Gender slope, β_3												
Intercept, δ_{30}	.17	.16	.14	.16	-.03	.06	-.03	.06	-.03	.06	-.04	.06
For Race slope, β_4												
Intercept, δ_{40}	-.75*	.28	-.68*	.28	-.15	.14	-.14	.14	-.13	.14	-.13	.14
For PJ slope, β_5												
Intercept, δ_{50}	.35***	.08			.11**	.04			.10*	.04		
For IJ slope, β_6												
Intercept, δ_{60}			.44***	.11			.13**	.05			.12**	.04
For OI slope, β_7												
Intercept, δ_{70}									.03	.03	.03	.03

Note. PJ = Procedural Justice; IJ = Interactional Justice; OI = Organizational Identification.
***$p < .001$ **$p < .01$ *$p < .05$

Table 9

Organizational identification mediation for the justice-OCBO relationship (Hypothesis 1c)

	Dependent Variables											
	OI				OCBO				OCBO			
	b	*SE*	*b*	*SE*	*B*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
Intercept, β_0												
Intercept, δ_{00}	5.30***	.17	5.35***	.16	4.04***	.03	4.05***	.03	4.04***	.03	4.05***	.03
OCBO, δ_{01}					.98***	.02	.97***	.02	.97***	.02	.96***	.02
For Division slope, β_1												
Intercept, δ_{10}	-.04	.20	-.11	.20	-.00	.02	-.01	.03	.01	.03	-.00	.03
For Tenure slope, β_2												
Intercept, δ_{20}	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
For Gender slope, β_3												
Intercept, δ_{30}	.17	.16	.14	.16	.03	.05	.03	.06	.02	.05	.02	.05
For Race slope, β_4												
Intercept, δ_{40}	-.75*	.28	-.68*	.28	-.17	.15	-.16	.15	-.14	.15	-.13	.15
For PJ slope, β_5												
Intercept, δ_{50}	.35***	.08			.10*	.04			.08	.04		
For IJ slope, β_6												
Intercept, δ_{60}			.44***	.11			.12**	.05			.10*	.05
For OI slope, β_7												
Intercept, δ_{70}									.04	.03	.04	.03

Note. PJ = Procedural Justice; IJ = Interactional Justice; OI = Organizational Identification.

***$p < .001$ **$p < .01$ *$p < .05$

Table 10

Organizational identification mediation for the justice-job engagement relationship (Hypothesis 1d)

	Dependent Variables											
	OI				Job Engagement				Job Engagement			
	b	*SE*	*b*	*SE*	*B*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
Intercept, β_0												
Intercept, δ_{00}	5.30***	.17	5.35***	.16	4.47***	.07	4.50***	.07	4.47***	.06	4.49***	.06
For Division slope, β_1												
Intercept, δ_{10}	-.04	.20	-.11	.20	-.18*	.09	-.21*	.09	-.18*	.08	-.20*	.08
For Tenure slope, β_2												
Intercept, δ_{20}	.00	.00	.00	.00	-.00	.00	-.00	.00	-.00	.00	-.00	.00
For Gender slope, β_3												
Intercept, δ_{30}	.17	.16	.14	.16	.09	.08	.07	.08	.05	.07	.04	.07
For Race slope, β_4												
Intercept, δ_{40}	-.75*	.28	-.68*	.28	-.09	.13	-.06	.14	.08	.12	.09	.12
For PJ slope, β_5												
Intercept, δ_{50}	.35***	.08			.18***	.04			.11**	.04		
For IJ slope, β_6												
Intercept, δ_{60}			.44***	.11			.23***	.04			.13***	.04
For OI slope, β_7												
Intercept, δ_{70}									.22***	.03	.22***	.03

Note. PJ = Procedural Justice; IJ = Interactional Justice; OI = Organizational Identification.

***$p < .001$ **$p < .01$ *$p < .05$

Sobel's (1982) test was used in the analysis which estimates the sampling variance of the indirect or mediated effect as

$$\sigma_{(ab)}^2,\ \sigma_{(ab)}^2 = b^2\,\sigma_a^2 + a^2\,\sigma_b^2 + \sigma_a^2\,\sigma_b^2$$

where *a* is the coefficient corresponding to the effect of the independent variable on the mediator; *b* is the coefficient corresponding to the effect of the mediator on the dependent variable while partialing out the effect of the independent variable; σ_a^2 and σ_b^2 are the variances associated with *a* and *b* path coefficients.

Using this approach, I tested the critical ratio to determine mediational significance as follows:

$$z = ab \,/\, \sqrt{[\ \sigma`_{(ab)}^2 = b^2\,\sigma_a^2 + a^2\,\sigma_b^2 + \sigma_a^2\,\sigma_b^2]}$$

where *ab* is the product of the two coefficients and represents the indirect effect of the independent variable on the dependent variable through the mediator. The ratio can then be compared to a standard normal distribution for establishing statistical significance (Preacher & Hayes, 2004). Because *ab* tends to non-normal in small samples, the assumption of a normal distribution under the null hypothesis for the Sobel test is violated. Therefore, I used the PASW macro from Preacher and Hayes (2004) to estimate the indirect effect by bootstrapping 1,000 samples from the original 161 responses. This technique produces bias corrected confidence intervals for the indirect effect and because the samples are large, the normality assumption for *ab* is not violated.

For Hypothesis 1d, a significant indirect effect was found for organizational identification mediating the relationships of procedural justice (*Sobel* = .09; *SE* = .02; *z* = 3.66; $CI_{99\%}$[.04, .15]) and interactional justice (*Sobel* = .11; *SE* = .03; *z* = 3.84; $CI_{99\%}$[.05, .19]) with job engagement. Referring to Table 10, the paths between procedural justice and job engagement (β = .11; *SE* =

.04; $p < .01$) as well as interactional justice and job engagement ($\beta = .13$; $SE = .04$; $p < .001$) remain significant when controlling for organizational identification. Therefore, organizational identification showed partial mediation for these relationships and these significant indirect effects provided support for Hypothesis 1d.

Hypothesis Testing for Hypotheses 2a-d

Hypotheses 2a-d stated organizational identification will mediate the positive relationships of economic evaluations with (a) task performance, (b) OCBI, (c) OCBO, and (d) job engagement. Using the same approach as performed for Hypotheses 1a-d, a series of HLM models were generated for Hypotheses 2a-d, which are displayed in Tables 11 (Hypothesis 2a), 12 (Hypothesis 2b), 13 (Hypothesis 2c), and 14 (Hypothesis 2d). As shown in Tables 11 through 14, economic evaluations was positively related with organizational identification ($\beta = .39$; $SE = .09$; $p < .001$). Organizational identification however was not significantly related with task performance, OCBI, and OCBO, but it was positively related with job engagement ($\beta = .22$; $SE = .02$; $p < .001$). Although the results for job engagement did not change when using the standardized data, organizational identification was found to significantly relate with OCBO ($\beta = .10$; $SE = .05$; $p < .05$) when using the standardized data. Because significant paths were found for OCBO using the standardized data, those results are reported. Table 15 shows the results of the standardized HLM analyses for the OCBO outcome. Based on the emergence of an effect with OCBO, Hypotheses 2c and 2d were analyzed using standardized data. Because organizational identification did not relate with task performance and OCBI, Hypotheses 2a-b were not supported.

Again, I used the PASW macro from Preacher and Hayes (2004) to estimate the indirect effect using 1,000 bootstrapped samples generated from the original 161 responses. For

Hypothesis 2c (refer to Table 15), an indirect effect for organizational identification was found for the relationship between economic evaluations and OCBO (*Sobel* = .10; *SE* = .04; *z* = 2.63; $CI_{99\%}$[.01, .20]), but economic evaluations did not have a significant direct relationship with OCBO (β = .03; *SE* = .05; *p* > .05). Research has found the significant direct effect requirement of the Baron and Kenny method to create high Type II error (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). The high error potential has led some researchers to relax the predictor-outcome relationship requirement especially when using small sample sizes. There is also the possibility that mediation effects can be indirect-only mediation where the predictor only relates with the outcome through the mediator (Zhao, Lynch Jr, & Chen, 2010). Therefore, based on a significant indirect effect, Hypothesis 2c was supported. When examining the indirect effect of organizational identification on the relationship of economic evaluations with job engagement for Hypothesis 2d, there was a significant indirect effect (*Sobel* = .18; *SE* = .04; *z* = 4.00; $CI_{99\%}$[.07, .30]). The path between economic evaluations and job engagement remains significant when controlling for organizational identification with the standardized (β = .17; *SE* = .07; *p* < .05) and unstandardized (refer to Table 14, β = .10; *SE* = .04; *p* < .01) data, exhibiting a partial mediation effect, so Hypothesis 2d was supported.

Table 11
Organizational identification mediation for the economic evaluations-task performance relationship (Hypothesis 2a)

	Dependent Variables					
	OI		Task Performance		Task Performance	
	b	*SE*	*b*	*SE*	*b*	*SE*
Intercept, β_0						
Intercept, δ_{00}	5.26***	.15	4.24***	.02	4.24***	.03
Mean Performance, δ_{01}			.99***	.03	.98***	.03
For Division slope, β_1						
Intercept, δ_{10}	.00	.19	-.03	.03	-.02	.03
For Tenure slope, β_2						
Intercept, δ_{20}	-.00	.00	-.00	.00	-.00	.00
For Gender slope, β_3						
Intercept, δ_{30}	.22	.15	.03	.06	.03	.05
For Race slope, β_4						
Intercept, δ_{40}	-.83**	.25	-.07	.15	-.05	.15
For EE slope, β_5						
Intercept, δ_{50}	.39***	.09	-.04	.05	-.05	.05
For OI slope, β_6						
Intercept, δ_{60}					.03	.04

Note. EE = Economic Evaluations; OI = Organizational Identification.

***$p < .001$ **$p < .01$

Table 12
Organizational identification mediation for the economic evaluations-OCBI relationship (Hypothesis 2b)

	Dependent Variables					
	OI		OCBI		OCBI	
	b	*SE*	*b*	*SE*	*b*	*SE*
Intercept, β_0						
Intercept, δ_{00}	5.26***	.15	3.99***	.02	3.99***	.03
Mean OCBI, δ_{01}			.99***	.02	.99***	.02
For Division slope, β_1						
Intercept, δ_{10}	.00	.19	.02	.02	.02	.02
For Tenure slope, β_2						
Intercept, δ_{20}	-.00	.00	-.00	.00	-.00	.00
For Gender slope, β_3						
Intercept, δ_{30}	.22	.15	-.02	.06	-.03	.06
For Race slope, β_4						
Intercept, δ_{40}	-.83**	.25	-.19	.15	-.16	.14
For EE slope, β_5						
Intercept, δ_{50}	.39***	.09	.06	.04	.04	.04
For OI slope, β_6						
Intercept, δ_{60}					.04	.03

Note. EE = Economic Evaluations; OI = Organizational Identification.
***$p < .001$ **$p < .01$

Table 13
Organizational identification mediation for the economic evaluations-OCBO relationship (Hypothesis 2c)

	Dependent Variables					
	OI		OCBO		OCBO	
	b	*SE*	*b*	*SE*	*b*	*SE*
Intercept, β_0						
Intercept, δ_{00}	5.26***	.15	4.04***	.02	4.04***	.02
Mean OCBO, δ_{01}			.99***	.01	.97***	.02
For Division slope, β_1						
Intercept, δ_{10}	.00	.19	.00	.02	.01	.02
For Tenure slope, β_2						
Intercept, δ_{20}	-.00	.00	.00	.00	.00	.00
For Gender slope, β_3						
Intercept, δ_{30}	.22	.15	.04	.06	.02	.05
For Race slope, β_4						
Intercept, δ_{40}	-.83**	.25	-.21	.15	-.16	.15
For EE slope, β_5						
Intercept, δ_{50}	.39***	.09	.03	.04	.00	.04
For OI slope, β_6						
Intercept, δ_{60}					.06	.03

Note. EE = Economic Evaluations; OI = Organizational Identification.
***$p < .001$ **$p < .01$

Table 14
Organizational identification mediation for the economic evaluations-job engagement relationship (Hypothesis 2d)

	Dependent Variables					
	OI		Job Engagement		Job Engagement	
	b	*SE*	*b*	*SE*	*b*	*SE*
Intercept, β_0						
Intercept, δ_{00}	5.26***	.15	4.45***	.07	4.46***	.06
For Division slope, β_1						
Intercept, δ_{10}	.00	.19	-.16	.09	-.17*	.08
For Tenure slope, β_2						
Intercept, δ_{20}	-.00	.00	-.00*	.00	-.00*	.00
For Gender slope, β_3						
Intercept, δ_{30}	.22	.15	.11	.07	.06	.07
For Race slope, β_4						
Intercept, δ_{40}	-.83**	.25	-.14	.12	.04	.12
For EE slope, β_5						
Intercept, δ_{50}	.39***	.09	.18***	.04	.10**	.04
For OI slope, β_6						
Intercept, δ_{60}					.22***	.02

Note. EE = Economic Evaluations; OI = Organizational Identification.
***$p < .001$ **$p < .01$ *$p < .05$

Table 15
Organizational identification mediation for the economic evaluations-OCBO relationship with standardized data (Hypothesis 2c)

	Dependent Variables					
	OI		OCBO		OCBO	
	b	*SE*	*b*	*SE*	*b*	*SE*
Intercept, β_0						
Intercept, δ_{00}	-.02	.10	.06	.04	.06	.04
Mean OCBO, δ_{01}			.99***	.01	.97***	.02
For Tenure slope, β_1						
Intercept, δ_{10}	-.00	.08	.03	.04	.02	.05
For Gender slope, β_2						
Intercept, δ_{20}	.22	.13	.05	.07	.02	.07
For Race slope, β_3						
Intercept, δ_{30}	-.77**	.24	-.30	.20	-.23	.20
For EE slope, β_4						
Intercept, δ_{40}	.35***	.08	.03	.05	-.01	.06
For OI slope, β_5						
Intercept, δ_{50}					.10*	.05

Note. EE = Economic Evaluations; OI = Organizational Identification.
***$p < .001$ **$p < .01$ *$p < .05$

Hypothesis Testing for Hypotheses 3a-d

Hypotheses 3a-d stated uncertainty about senior management trustworthiness will moderate the positive relationships of procedural and interactional justice with (a) task performance, (b) OCBI, (c) OCBO, and (d) job engagement, such that the relationships will be stronger when uncertainty is high than when uncertainty is low. Table 16 displays the results of the HLM analyses using the unstandardized data. For all justice relationships associated with dissertation outcomes, uncertainty about senior management trustworthiness was found only to moderate the relationships of procedural justice (β = -.11; *SE* = .03; $p < .001$) and interactional justice (β = -.09; *SE* = .03; $p < .01$) with job engagement. The lack of significant interactions for the other three outcomes (task performance, OCBI, and OCBO) provided no support for Hypotheses 3a-c. Figures 4 and 5 display the significant moderating effects on the relationships of procedural and interactional justice with job engagement respectively.

Table 16

The moderating effect of uncertainty about senior management trustworthiness (Hypotheses 3a-d)

	Dependent Variables															
	Task Performance				OCBI				OCBO				Job Engagement			
	b	*SE*	*b*	*SE*	*b*	*SE*	*B*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
Intercept, β_0																
Intercept, δ_{00}	4.23	.03	4.24	.02	3.97	.03	3.99	.03	4.04	.12	4.05	.03	4.39	.07	4.45	.07
Mean Performance, δ_{01a}	.98	.03	.97	.03												
Mean OCBI, δ_{01b}					1.00	.02	.99	.02								
Mean OCBO, δ_{01c}									.78	.10	.97	.02				
For Division slope, β_1																
Intercept, δ_{10}	-.01	.03	-.02	.03	.01	.02	.00	.02	-.08	.13	-.01	.03	-.19*	.09	-.20*	.09
For Tenure slope, β_2																
Intercept, δ_{20}	-.00	.00	-.00	.00	-.00	.00	.00	.00	-.00	.00	.00	.00	-.00**	.00	-.00*	.00
For Gender slope, β_3																
Intercept, δ_{30}	.04	.06	.03	.06	-.02	.06	-.03	.06	.02	.09	.03	.05	.14	.07	.08	.07
For Race slope, β_4																
Intercept, δ_{40}	-.08	.16	-.07	.16	-.14	.14	-.13	.14	-.22	.17	-.14	.15	-.03	.11	-.00	.12
For PJ slope, β_5																
Intercept, δ_{50}	.03	.04			.10	.05			.11	.06			.09*	.04		
For IJ slope, β_6																
Intercept, δ_{60}			.06	.06			.12**	.04			.10*	.05			.17***	.04

Table 16

The moderating effect of uncertainty about senior management trustworthiness (Hypotheses 3a-d; continued)

	Dependent Variables															
	Task Performance				OCBI				OCBO				Job Engagement			
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
For UMT, β_7																
Intercept, δ_{70}	.03	.04	.03	.03	-.04	.04	-.05*	.02	-.03	.04	-.03	.03	-.18***	.04	-.15***	.03
For PJ*UMT, β_8																
Intercept, δ_{80}	-.00	.02			-.04	.04			-.05	.05			-.11***	.03		
For IJ*UMT, β_9																
Intercept, δ_{90}			-.02	.03			-.05	.04			.01	.04			-.09**	.03

Note. PJ = Procedural Justice; IJ = Interactional Justice; UMT = Uncertainty about Senior Management Trustworthiness. All intercepts and level-2 controls were significant at $p < .001$.

***$p < .001$ **$p < .01$ *$p < .05$

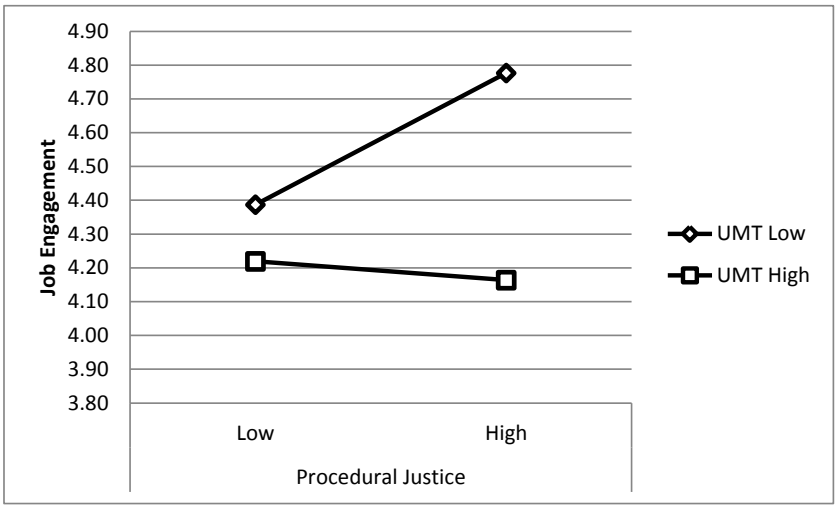

Figure 4. The moderating effect of uncertainty about senior management trustworthiness on the relationship of procedural justice with job engagement.
Note. UMT = Uncertainty about senior management trustworthiness.

Figure 5. The moderating effect of uncertainty about senior management trustworthiness on the relationship of interactional justice with job engagement.
Note. UMT = Uncertainty about senior management trustworthiness.

To further examine these significant moderating effects, I performed a simple slopes test of high (+1 *SD*) and low (-1 *SD*) values of the moderator (Preacher, Curran, & Bauer, 2006). For the relationship between procedural justice and job engagement (Refer to Figure 4), the slope for high uncertainty of senior management trustworthiness was not significant (β = -.03; t = -.55; p >

.05), whereas the slope for low uncertainty was significant (β = .22; t = 5.14; p < .05). In the same way for the relationship of interactional justice with job engagement (Refer to Figure 5), the slope for high uncertainty was null (β = .07; t = 1.52; p > .05), and the slope was significant when uncertainty was low (β = .27; t = 4.48; p < .05). These interactions were opposite of proposed direction: high uncertainty was proposed to strengthen the justice relationships. Thus, despite significant findings, Hypothesis 3d was not supported.

Hypothesis Testing for Hypotheses 4a-d

Hypotheses 4a-d stated employment uncertainty will moderate the positive relationships of procedural and interactional justice with (a) task performance, (b) OCBI, (c) OCBO, and (d) job engagement, such that the relationships will be stronger when uncertainty is high than when uncertainty is low. HLM models were run to examine these moderation effects and Table 17 displays the results of these analyses. For all justice relationships associated with the four outcomes, employment uncertainty only moderated the relationships of procedural justice (β = -.11; *SE* = .03; p < .001) and interactional justice (β = -.09; *SE* = .04; p < .05) with job engagement. These results were consistent with those found for Hypotheses 3a-c, lending no support for Hypotheses 4a-c. Running the same analyses using standardized data did not change the results when task performance, OCBI, and OCBO were outcomes. However, with the standardized data, employment uncertainty no longer moderated the relationship between interactional justice and job engagement (β = -.10; *SE* = .05; p > .05).

Because the moderation effect for interactional justice was non-significant with the standardized data, it may be that the interaction was unduly influenced by division mean differences. Therefore, I only examined the significant interaction for procedural justice with the unstandardized data. Figure 6 displays the significant interaction of employment uncertainty and

procedural justice. For the procedural justice-job engagement simple slopes analysis, when employment uncertainty is high, the slope is not significant (β = -.03; t = -.42; p > .05) and when employment uncertainty is low, the slope is significant (β = .17; t = 3.41; p < .05). Instead of high employment uncertainty strengthening the positive relationship of procedural justice with job engagement, no relationship existed. In fact, only when employment uncertainty was low did procedural justice relate with job engagement. The interaction was opposite of the proposed direction so Hypothesis 4d was not supported.

Figure 6. The moderating effect of employment uncertainty on the relationship of procedural justice with job engagement.
Note. EU = Employment uncertainty.

Table 17

The moderating effect of employment uncertainty (Hypotheses 4a-d)

	Dependent Variables															
	Task Performance				OCBI				OCBO				Job Engagement			
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
Intercept, β_0																
Intercept, δ_{00}	4.24***	.03	4.25***	.03	3.99***	.03	4.00***	.03	4.04***	.03	4.06***	.03	4.43***	.08	4.46***	.08
Mean Performance, δ_{01a}	.99***	.03	.98***	.03												
Mean OCBI, δ_{01b}					.98***	.02	.97***	.02								
Mean OCBO, δ_{01c}									.97***	.02	.96***	.02				
For Division slope, β_1																
Intercept, δ_{10}	-.01	.03	-.01	.03	.01	.02	.00	.03	.00	.02	.00	.03	-.21*	.09	-.21*	.09
For Tenure slope, β_2																
Intercept, δ_{20}	-.00	.00	-.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	-.00	.00	-.00	.00
For Gender slope, β_3																
Intercept, δ_{30}	.04	.05	.03	.05	-.02	.06	-.02	.06	.03	.05	.03	.05	.10	.07	.08	.07
For Race slope, β_4																
Intercept, δ_{40}	-.06	.15	-.06	.16	-.14	.14	-.13	.14	-.16	.15	-.16	.15	-.04	.12	-.01	.12
For PJ slope, β_5																
Intercept, δ_{50}	-.03	.05			.07	.05			.06	.05			.07	.05		
For IJ slope, β_6																
Intercept, δ_{60}			-.02	.09			.08	.05			.05	.06			.15*	.06

Table 17

The moderating effect of employment uncertainty (Hypotheses 4a-d; continued)

	Dependent Variables															
	Task Performance				OCBI				OCBO				Job Engagement			
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
For EU slope, β_7																
Intercept, δ_{70}	-.05	.05	-.04	.04	-.08*	.04	-.08**	.02	-.06	.04	-.08*	.03	-.24***	.06	-.19***	.04
For PJ*EU, β_8																
Intercept, δ_{80}	.01	.03			-.02	.04			.01	.04			-.11***	.03		
For IJ*EU, β_9																
Intercept, δ_{90}			.06	.06			-.00	.05			.05	.05			-.09*	.04

Note. PJ = Procedural Justice; IJ = Interactional Justice; EU = Employment Uncertainty.

***$p < .001$ **$p < .01$ *$p < .05$

Hypothesis Testing for Hypotheses 5a-d and 6a-d

Hypotheses 5a-d stated uncertainty about senior management trustworthiness will moderate the strength of the mediated relationships of procedural and interactional justice with (a) task performance, (b) OCBI, (c) OCBO, and (d) job engagement via organizational identification, such that when uncertainty is high, the strength of the mediation effect will increase. Hypotheses 6a-d proposed the same first stage moderation model as Hypotheses 5a-d except employment uncertainty was the moderator. Tables 18 (Hypotheses 5a and 6a), 19 (Hypotheses 5b and 6b), 20 (Hypotheses 5c and 6c), and 21 (Hypotheses 5d and 6d) display the results of the HLM analyses for these two sets of hypotheses. As can be seen in these tables, uncertainty about senior management trustworthiness (β = -.07; *SE* = .06; $p > .05$) and employment uncertainty (β = -.08; *SE* = .06; $p > .05$) did not significantly moderate the relationship of procedural justice with organizational identification. Uncertainty about senior management trustworthiness (β = .06; *SE* = .09; $p > .05$) and employment uncertainty (β = .05; *SE* = .13; $p > .05$) were also found to not significantly moderate the interactional justice-organizational identification relationship. Therefore, despite organizational identification having a significant relationship with job engagement (Refer to Table 21), the lack of moderating effects did not provide support for examining the first stage moderation model. Therefore, Hypotheses 5a-d and 6a-d were not supported.

Table 18

The combined model for the justice-task performance relationship (Hypotheses 5a and 6a)

	Dependent Variables											
	Organizational Identification								Task Performance			
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
Intercept, β_0												
Intercept, δ_{00}	5.23***	.13	5.32***	.13	5.26***	.14	5.32***	.15	4.24***	.03	4.24***	.02
Mean Performance, δ_{01}									.97***	.04	.96***	.03
For Division slope, β_1												
Intercept, δ_{10}	-.05	.17	-.09	.17	-.08	.17	-.07	.17	-.02	.03	-.02	.03
For Tenure slope, β_2												
Intercept, δ_{20}	.00	.00	.00	.00	.00	.00	.00	.00	-.00	.00	-.00	.00
For Gender slope, β_3												
Intercept, δ_{30}	.24	.13	.21	.13	.22	.14	.19	.13	.02	.06	.02	.05
For Race slope, β_4												
Intercept, δ_{40}	-.57*	.26	-.49	.26	-.63**	.23	-.61**	.23	-.04	.15	-.04	.15
For PJ slope, β_5												
Intercept, δ_{50}	-.02	.11			-.10	.11			.06	.04		
For IJ slope, β_6												
Intercept, δ_{60}			.16	.12			.03	.14			.06	.06
For EE, β_7												
Intercept, δ_{70}	.11	.11	.08	.09	.14	.11	.12	.09	-.09	.06	-.07	.05

Table 18

The combined model for the justice-task performance relationship (Hypotheses 5a and 6a; continued)

	Dependent Variables											
	Organizational Identification								Task Performance			
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
For UMT, β_8												
Intercept, δ_{80}	-.45***	.10	-.39***	.08								
For EU, β_9												
Intercept, δ_{90}					-.59***	.08	-.49***	.09				
For OI, β_{10}												
Intercept, δ_{100}									.03	.04	.02	.04
For PJ*UMT, β_{11}												
Intercept, δ_{110}	-.07	.06										
For IJ*UMT, β_{12}												
Intercept, δ_{120}			.06	.09								
For PJ*EU, β_{13}												
Intercept, δ_{130}					-.08	.06						
For IJ*EU, β_{14}												
Intercept, δ_{140}							.05	.13				

Note. PJ = Procedural Justice; IJ = Interactional Justice; EE = Economic Evaluations; UMT = Uncertainty about Senior Management Trustworthiness; EU = Employment Uncertainty; OI = Organizational Identification.

***$p < .001$ **$p < .01$ *$p < .05$

Table 19

The combined model for the justice-OCBI relationship (Hypotheses 5b and 6b)

	Dependent Variables											
	Organizational Identification								OCBI			
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
Intercept, β_0												
Intercept, δ_{00}	5.23***	.13	5.32***	.13	5.26***	.14	5.32***	.15	4.00***	.03	4.00***	.03
Mean OCBI, δ_{01}									.99***	.02	.98***	.02
For Division slope, β_1												
Intercept, δ_{10}	-.05	.17	-.09	.17	-.08	.17	-.07	.17	.01	.03	.00	.02
For Tenure slope, β_2												
Intercept, δ_{20}	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
For Gender slope, β_3												
Intercept, δ_{30}	.24	.13	.21	.13	.22	.14	.19	.13	-.03	.06	-.04	.06
For Race slope, β_4												
Intercept, δ_{40}	-.57*	.26	-.49	.26	-.63**	.23	-.61**	.23	-.13	.13	-.13	.13
For PJ slope, β_5												
Intercept, δ_{50}	-.02	.11			-.10	.11			.12*	.06		
For IJ slope, β_6												
Intercept, δ_{60}			.16	.12			.03	.14			.11**	.04
For EE, β_7												
Intercept, δ_{70}	.11	.11	.08	.09	.14	.11	.12	.09	-.02	.05	.01	.04

Table 19

The combined model for the justice-OCBI relationship (Hypotheses 5b and 6b; continued)

	Dependent Variables											
	Organizational Identification								OCBI			
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
For UMT, β_8												
Intercept, δ_{80}	-.45***	.10	-.39***	.08								
For EU, β_9												
Intercept, δ_{90}					-.59***	.08	-.49***	.09				
For OI, β_{10}												
Intercept, δ_{100}									.03	.03	.02	.03
For PJ*UMT, β_{11}												
Intercept, δ_{110}	-.07	.06										
For IJ*UMT, β_{12}												
Intercept, δ_{120}			.06	.09								
For PJ*EU, β_{13}												
Intercept, δ_{130}					-.08	.06						
For IJ*EU, β_{14}												
Intercept, δ_{140}							.05	.13				

Note. PJ = Procedural Justice; IJ = Interactional Justice; EE = Economic Evaluations; UMT = Uncertainty about Senior Management Trustworthiness; EU = Employment Uncertainty; OI = Organizational Identification.

***$p < .001$ **$p < .01$ *$p < .05$

Table 20

The combined model for the justice-OCBO relationship (Hypotheses 5c and 6c)

	Dependent Variables											
	Organizational Identification								OCBO			
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
Intercept, β_0												
Intercept, δ_{00}	5.23***	.13	5.32***	.13	5.26***	.14	5.32***	.15	4.05***	.04	4.05***	.03
Mean OCBO, δ_{01}									.97***	.02	.96***	.02
For Division slope, β_1												
Intercept, δ_{10}	-.05	.17	-.09	.17	-.08	.17	-.07	.17	-.00	.03	-.01	.03
For Tenure slope, β_2												
Intercept, δ_{20}	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
For Gender slope, β_3												
Intercept, δ_{30}	.24	.13	.21	.13	.22	.14	.19	.13	.02	.05	.01	.05
For Race slope, β_4												
Intercept, δ_{40}	-.57*	.26	-.49	.26	-.63**	.23	-.61**	.23	-.12	.14	-.13	.14
For PJ slope, β_5												
Intercept, δ_{50}	-.02	.11			-.10	.11			.13*	.05		
For IJ slope, β_6												
Intercept, δ_{60}			.16	.12			.03	.14			.11**	.04
For EE, β_7												
Intercept, δ_{70}	.11	.11	.08	.09	.14	.11	.12	.09	-.07	.05	-.03	.04

Table 20

The combined model for the justice-OCBO relationship (Hypotheses 5c and 6c; continued)

	Dependent Variables											
	Organizational Identification								OCBO			
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
For UMT, β_8												
Intercept, δ_{80}	-.45***	.10	-.39***	.08								
For EU, β_9												
Intercept, δ_{90}					-.59***	.08	-.49***	.09				
For OI, β_{10}												
Intercept, δ_{100}									.06	.03	.05	.04
For PJ*UMT, β_{11}												
Intercept, δ_{110}	-.07	.06										
For IJ*UMT, β_{12}												
Intercept, δ_{120}			.06	.09								
For PJ*EU, β_{13}												
Intercept, δ_{130}					-.08	.06						
For IJ*EU, β_{14}												
Intercept, δ_{140}							.05	.13				

Note. PJ = Procedural Justice; IJ = Interactional Justice; EE = Economic Evaluations; UMT = Uncertainty about Senior Management Trustworthiness; EU = Employment Uncertainty; OI = Organizational Identification.

***$p < .001$ **$p < .01$ *$p < .05$

Table 21

The combined model for the justice-job engagement relationship (Hypotheses 5d and 6d)

	Dependent Variables											
	Organizational Identification								Job Engagement			
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
Intercept, β_0												
Intercept, δ_{00}	5.23***	.13	5.32***	.13	5.26***	.14	5.32***	.15	4.47***	.06	4.47***	.07
For Division slope, β_1												
Intercept, δ_{10}	-.05	.17	-.09	.17	-.08	.17	-.07	.17	-.17*	.08	-.18*	.08
For Tenure slope, β_2												
Intercept, δ_{20}	.00	.00	.00	.00	.00	.00	.00	.00	-.00	.00	-.00	.00
For Gender slope, β_3												
Intercept, δ_{30}	.24	.13	.21	.13	.22	.14	.19	.13	.05	.06	.05	.07
For Race slope, β_4												
Intercept, δ_{40}	-.57*	.26	-.49	.26	-.63**	.23	-.61**	.23	.06	.12	.07	.12
For PJ slope, β_5												
Intercept, δ_{50}	-.02	.11			-.10	.11			.07	.05		
For IJ slope, β_6												
Intercept, δ_{60}			.16	.12			.03	.14			.10*	.05
For EE, β_7												
Intercept, δ_{70}	.11	.11	.08	.09	.14	.11	.12	.09	.05	.05	.07	.04

Table 21

The combined model for the justice-job engagement relationship (Hypotheses 5d and 6d; continued)

	Dependent Variables											
	Organizational Identification								Job Engagement			
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
For UMT, β_8												
Intercept, δ_{80}	-.45***	.10	-.39***	.08								
For EU, β_9												
Intercept, δ_{90}					-.59***	.08	-.49***	.09				
For OI, β_{10}												
Intercept, δ_{100}									.22***	.03	.21***	.02
For PJ*UMT, β_{11}												
Intercept, δ_{110}	-.07	.06										
For IJ*UMT, β_{12}												
Intercept, δ_{120}			.06	.09								
For PJ*EU, β_{13}												
Intercept, δ_{130}					-.08	.06						
For IJ*EU, β_{14}												
Intercept, δ_{140}							.05	.13				

Note. PJ = Procedural Justice; IJ = Interactional Justice; EE = Economic Evaluations; UMT = Uncertainty about Senior Management Trustworthiness; EU = Employment Uncertainty; OI = Organizational Identification.

***$p < .001$ **$p < .01$ *$p < .05$

Post hoc Analysis

The proposed hypotheses did not have substantial support, especially when examining organizational identification as the mediator in a first stage moderation model. In the current study, the lack of results in connection with organizational identification may be due to needing a particular situation to activate expected behaviors (i.e., situated identity; Alexander & Wiley, 1981). There may be situational cues which increase identity-information processing leading to employees displaying identity-related behaviors (Cropanzano, James, & Citera, 1992). Essentially, certain contexts activate organizational identities, which then lead employees to display performance behaviors for those with high organizational identification. Farmer and Van Dyne (2010) were able to find support for the situated identity perspective, where high industrious work identity (i.e., extent individuals view consistency and discipline in following organizational routines as part of their self-concept) influenced task performance for full time workers but not for part time workers. The deeper role occupancy for full time workers was expected to create stronger networks and access to resources which should activate the particular identity leading to increases in task performance. Organizational identification may simply not be primed in this organizational context so it does not relate with performance behaviors as expected. Although I did not examine such situational cues in this dissertation, I explored the possibility that job engagement may explain the fair process effect relationships in the same way expected for organizational identification.

Job engagement represents an investment of physical, cognitive, and emotional energies into the work roles employees occupy (Kahn, 1990). It is a multidimensional motivational construct that may also explain the relationships between justice and performance. When employees are engaged, they invest their cognitive energy in the work roles they occupy. This

cognitive investment in work is similar to the cognitive connection found in organizational identification. Engagement, however, also represents the investment of emotional and physical energies in work not found with organizational identification. The simultaneous investment of these three energies may represent a stronger motivating force than organizational identification if this identity is inactive. Research has shown job engagement mediates the relationships of individual characteristics and organizational factors (e.g., perceptions of organizational support) with task performance and OCB (Rich et al., 2010). Thus, many of the drivers of performance can be explained by increases in job engagement, which may explain the fair process effect relationships studied here.

As noted in the literature review, Saks (2006) did not find a significant relationship between procedural justice and engagement in a study with MBA students. These null findings could indicate that certain contexts are needed to activate the relationship between fairness and job engagement. According to UMT (Lind & Van den Bos, 2002), high uncertainty increases the relationship strength between justice and performance. The intensification of the fair process effect may be explained by employees becoming engaged or increasing their work motivation. However, the results of the present study indicated the opposite. Uncertainty about senior management trustworthiness and employment uncertainty were both found to moderate the relationships of procedural and interactional justice with job engagement, such that the relationships were only significant when these uncertainties were low. For these uncertainty forms, employees must not have perceived fair treatment as a coping mechanism.

Uncertainty has been shown to increase the appeal of *want* over *should* actions (Milkman, 2012). Uncertainty is a stressor which alters individuals likelihood of *want* (e.g., leave work early) over *should* (e.g., work diligently throughout the day) choices. When stressors are

introduced, individuals experience increased negative thoughts and emotions regarding the uncertainty. For example, uncertainty about senior management trustworthiness may cause the employee to become angry and consumed with whether or not senior management can ever be trusted. Likewise, employment uncertainty could lead employees to be more worried about the security of their jobs than with decisions to react to fair treatment as they *should*. Individuals may attempt to suppress these negative thoughts and emotions which decreases the likelihood they are able to exert self-control (i.e., self-control theory; Muraven & Baumeister, 2000). In self-control theory, selecting *should* options over *wants* requires active effort on the individual's part which is easier when uncertainty is low. Therefore, high uncertainty about senior management trustworthiness and employment uncertainty may lead employees to question the sincerity of the fair treatment supplied to them, and not become engaged and act as they *should*.

Should actions such as reacting to fair treatment by becoming engaged may reflect the motivation found in favorable social exchange relationships. Employees form social relationships at work with the employing organization as well as their supervisor and coworkers, which motivate employee work behaviors. These entities can exchange intangible assets such as fair treatment which will increase the likelihood employees will reciprocate with performance. Social exchange relationships have been found to explain associations of procedural and interactional justice with performance behaviors (e.g., Masterson, Lewis, Goldman, & Taylor, 2000). Employees are thus willing to engage in these *should* behaviors upon receiving favorable treatment found in procedural and interactional justice. This willingness to display these behaviors can be captured in higher job engagement.

Viewing these social exchanges as desirable *should* behaviors within a self-control theory framework (Muraven & Baumeister, 2000), I suggest that employees may only be able to exhibit

the necessary self-control required to perform the *should* action when uncertainty is low. Employees understand the exchange relationship they hold with their employer and the expected performance behaviors. When uncertainty about senior management trustworthiness and employment uncertainty are low, employees are motivated in reaction to fair treatment to act as they *should* and ultimately increase their performance behaviors. On the other hand, if they experience high uncertainty about senior management trustworthiness and employment uncertainty, employees may be unable to sustain the necessary effort to act as they *should*.

This weakening of self-control may happen with these two uncertainties because they reduce trust in the organization and cause fair treatment to be viewed as insincere. Because fair treatment is no longer trusted, employees do not react to fair treatment by increasing job engagement, which then leads to performance increases. Thus, the research question I investigated for the *post hoc* analysis is whether uncertainty (i.e., uncertainty about senior management trustworthiness, employment uncertainty) would moderate the strength of the mediated relationships of procedural and interactional justice with (a) task performance, (b) OCBI, and (c) OCBO via job engagement, such that when uncertainty is low, mediation will exist. Figure 7 displays the model for the proposed *post hoc* analysis. Support for the *post hoc* analysis was only found with uncertainty about senior management trustworthiness for the mediated relationships of procedural justice with task performance and OCBO. Table 22 summarizes the HLM analyses for these significant relationships which were used for testing these first stage moderation models.

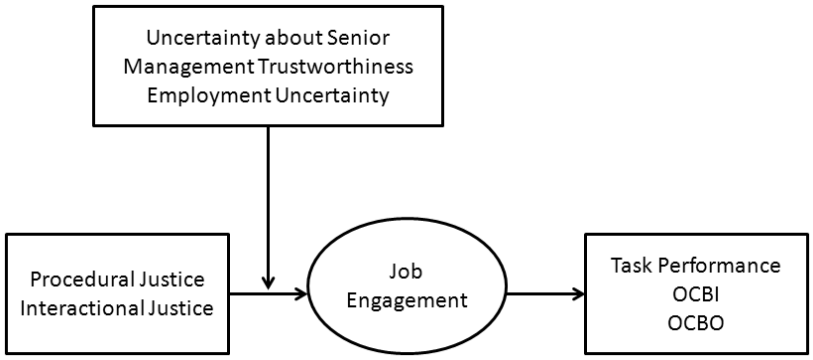

Figure 7. *Post hoc* analysis model.

As can be seen in Table 22, uncertainty about senior management trustworthiness moderated the relationships of procedural justice (β = -.11; *SE* = .03; $p < .001$) and job engagement. Job engagement was also found to positively relate with task performance (β = .15; $p < .05$) and OCBO (β = .20; $p < .01$). Because the purpose of the *post hoc* analysis was to determine the first stage moderation and indirect effects through job engagement, first stage and indirect effects are reported for the justice-performance relationships at both high (+1 *SD*) and low (-1 *SD*) values of uncertainty about senior management trustworthiness. To give further support for these significant effects at high and low uncertainty values, first stage and indirect differences were also analyzed as detailed by Edwards and Lambert (2007).

For the mediated relationship of procedural justice with task performance via job engagement, when uncertainty about senior management trustworthiness was low, the first stage effect (*Mean* = .17; $CI_{95\%}$[.04, .29]) and indirect effect (*Mean* = .03; $CI_{95\%}$[.00, .07]) were significant. When uncertainty was high, the first stage effect (*Mean* = -.03; $CI_{95\%}$[-.16, .10]) and indirect effect (*Mean* = -.00; $CI_{95\%}$[-.04, .01]) were not significant. The first stage effect (*Diff.* = -.20; $CI_{95\%}$[-.34, -.04]) and indirect effect (*Diff.* = -.00; $CI_{95\%}$[-.09, -.00]) also significantly differed from each at high and low uncertainty values. Such results indicate procedural justice

was indirectly related with task performance via job engagement when uncertainty about senior management trustworthiness was low.

For the procedural justice-OCBO relationship, the first stage effect (*Mean* =.17; $CI_{95\%}$[.04, .29]) and indirect effect (*Mean* = .03; $CI_{95\%}$[.00, .08]) were significant when uncertainty about senior management trustworthiness was low. When uncertainty was high, the first stage effect (*Mean* = -.03; $CI_{95\%}$[-.16, .10]) and indirect effect (*Mean* = -.00; $CI_{95\%}$[-.04, .01]) were not significant. When differences were examined between high and low values of uncertainty about senior management trustworthiness, the first stage effect (*Diff.* = -.20; $CI_{95\%}$[-.34, -.04]) and indirect effect (*Diff.* = -.01; $CI_{95\%}$[-.10, -.01]) were both significant. Therefore, procedural justice indirectly related with OCBO via job engagement only when uncertainty about senior management trustworthiness was low.

Uncertainty about senior management trustworthiness may be a more salient uncertainty form than employment uncertainty concerning the fairness of policies in relation to an employee's engagement at work. It was found to moderate the mediated paths of procedural justice with task performance and OCBO via job engagement. The first stage moderation effects for these two models were strong, but were not found when employment uncertainty was a moderator. Additionally, no first stage moderation effects were found for the relationships of interactional justice with task performance and OCBO via job engagement. Job engagement may increase only from reactions to fair policies and procedures when uncertainty about senior management trustworthiness is low and not from reactions to fair interpersonal treatment with the same uncertainty.

Table 22

HLM post hoc analyses for task performance and OCBO

	Dependent Variables					
	Job Engagement		Task Performance		OCBO	
	b	*SE*	*b*	*SE*	*b*	*SE*
Intercept, β_0						
Intercept, δ_{00}	4.38***	.07	4.22***	.03	4.03***	.04
Mean Performance, δ_{01a}			.95***	.03		
OCBO, δ_{01b}					.95***	.02
For Org. slope, β_1						
Intercept, δ_{10}	-.19*	.09	.01	.03	.03	.04
For Tenure slope, β_2						
Intercept, δ_{20}	-.00**	.00	-.00	.00	.00	.00
For Gender slope, β_3						
Intercept, δ_{30}	.14	.07	.02	.06	.01	.05
For Race slope, β_4						
Intercept, δ_{40}	-.03	.11	-.05	.15	-.15	.14
For PJ slope, β_5						
Intercept, δ_{50}	.08	.06	.05	.04	.12*	.05
For EE, β_6						
Intercept, δ_{60}	.03	.06	-.10	.06	-.08	.05
For UMT, β_7						
Intercept, δ_{70}	-.17***	.03				
For JE, β_9						
Intercept, δ_{90}			.15*	.07	.20**	.07
For PJ*UMT, β_{10}						
Intercept, δ_{100}	-.11***	.03				

Note. PJ = Procedural Justice; EE = Economic Evaluations; UMT = Uncertainty about Senior Management Trustworthiness; Org = Organization.

***$p < .001$ **$p < .01$ *$p < .05$

This chapter examined the results of the dissertation analyses. Table 25 summarizes these results when testing GEM (Hypotheses 1a-d and 2a-d) and UMT (Hypotheses 3a-d and 4a-d) independently as well as a combined model of these two theories (Hypotheses 5a-d and 6a-d). The results only had limited support for GEM and the moderation effects for UMT were not in the proposed directions. Additionally, the combined model of GEM and UMT was not supported. The lack of support for the dissertation hypotheses led me to examine an alternative model which advances theory in a *post hoc* fashion. The results of the *post hoc* analysis along with the dissertation hypotheses are addressed in the discussion that follows.

Table 23
Summary of hypothesis testing results

Hypothesis	Results
H1a: Organizational identification will mediate the positive relationships of procedural and interactional justice with task performance.	Not Supported
H1b: Organizational identification will mediate the positive relationships of procedural and interactional justice with OCBI.	Not Supported
H1c: Organizational identification will mediate the positive relationships of procedural and interactional justice with OCBO.	Not Supported
H1d: Organizational identification will mediate the positive relationships of procedural and interactional justice with job engagement.	Supported
H2a: Organizational identification will mediate the positive relationship of economic evaluations with task performance.	Not Supported
H2b: Organizational identification will mediate the positive relationship of economic evaluations with OCBI.	Not Supported
H2c: Organizational identification will mediate the positive relationship of economic evaluations with OCBO.	Supported
H2d: Organizational identification will mediate the positive relationship of economic evaluations with job engagement.	Supported
H3a: Uncertainty about senior management trustworthiness will moderate the positive relationships of procedural and interactional justice with task performance, such that the relationship will be stronger when uncertainty is high than when uncertainty is low.	Not Supported

Table 23

Summary of hypothesis testing results (continued)

Hypothesis	Results
H3b: Uncertainty about senior management trustworthiness will moderate the positive relationships of procedural and interactional justice with OCBI, such that the relationship will be stronger when uncertainty is high than when uncertainty is low.	Not Supported
H3c: Uncertainty about senior management trustworthiness will moderate the positive relationships of procedural and interactional justice with OCBO, such that the relationship will be stronger when uncertainty is high than when uncertainty is low.	Not Supported
H3d: Uncertainty about senior management trustworthiness will moderate the positive relationships of procedural and interactional justice with job engagement, such that the relationship will be stronger when uncertainty is high than when uncertainty is low.	Not Supported
H4a: Employment uncertainty will moderate the positive relationships of procedural and interactional justice with task performance, such that the relationship will be stronger when uncertainty is high than when uncertainty is low.	Not Supported
H4b: Employment uncertainty will moderate the positive relationships of procedural and interactional justice with OCBI, such that the relationship will be stronger when uncertainty is high than when uncertainty is low.	Not Supported
H4c: Employment uncertainty will moderate the positive relationships of procedural and interactional justice with OCBO, such that the relationship will be stronger when uncertainty is high than when uncertainty is low.	Not Supported
H4d: Employment uncertainty will moderate the positive relationships of procedural and interactional justice with job engagement, such that the relationship will be stronger when uncertainty is high than when uncertainty is low.	Not Supported
H5a: Uncertainty about senior management trustworthiness will moderate the strength of the mediated relationships of procedural and interactional justice with task performance via organizational identification, such that when uncertainty is high, the strength of the mediation effect will increase.	Not Supported
H5b: Uncertainty about senior management trustworthiness will moderate the strength of the mediated relationships of procedural and interactional justice with OCBI via organizational identification, such that when uncertainty is high, the strength of the mediation effect will increase.	Not Supported

Table 23

Summary of hypothesis testing results (continued)

Hypothesis	Results
H5c: Uncertainty about senior management trustworthiness will moderate the strength of the mediated relationships of procedural and interactional justice with OCBO via organizational identification, such that when uncertainty is high, the strength of the mediation effect will increase.	Not Supported
H5d: Uncertainty about senior management trustworthiness will moderate the strength of the mediated relationships of procedural and interactional justice with job engagement via organizational identification, such that when uncertainty is high, the strength of the mediation effect will increase.	Not Supported
H6a: Employment uncertainty will moderate the strength of the mediated relationships of procedural and interactional justice with task performance via organizational identification, such that when uncertainty is high, the strength of the mediation effect will increase.	Not Supported
H6b: Employment uncertainty will moderate the strength of the mediated relationships of procedural and interactional justice with OCBI via organizational identification, such that when uncertainty is high, the strength of the mediation effect will increase.	Not Supported
H6c: Employment uncertainty will moderate the strength of the mediated relationships of procedural and interactional justice with OCBO via organizational identification, such that when uncertainty is high, the strength of the mediation effect will increase.	Not Supported
H6d: Employment uncertainty will moderate the strength of the mediated relationships of procedural and interactional justice with job engagement via organizational identification, such that when uncertainty is high, the strength of the mediation effect will increase.	Not Supported

CHAPTER 5: DISCUSSION

Organizational justice continues to be a popular topic of study due to its association with job performance and other important organizational outcomes. The performance-enhancing influence of justice is particularly strong when reacting to fair policies and procedures. Fair treatment supplied through the enactment of policies and procedures is thought to carry information for evaluating relationship quality (Tyler & Lind, 1992). When employees witness this fair treatment in the form of procedural and interactional justice, they react by increasing job performance.

Meta-analytic results have supported positive correlations of procedural and interactional justice with performance-related behaviors and positive work attitudes (Cohen-Charash & Spector, 2001; Colquitt et al., 2001). This fairness-outcome relationship has been referred to as the fair process effect (Folger et al., 1979). The group engagement model (GEM) and uncertainty management theory (UMT) represent two fair process effect theories examined in this dissertation that explain the psychology behind this effect. GEM proposes that individuals form social identities with the group providing the fair treatment which ultimately explain why the fair process effect occurs (Tyler & Blader, 2003). Whereas GEM explains why, UMT explains when the fairness matters by indicating that fair treatment serves as coping mechanism for uncertainty-related stress. Thus, when uncertainty is high, the fair process effect is stronger (Lind & Van den Bos, 2002).

Using these psychological explanations of the fair process effect, I examined both GEM and UMT independently prior to testing a combined model of these two theories. These theoretical frameworks aim to give further insight into the relationships of fair treatment (i.e.,

procedural and interactional justice) with performance (i.e., task performance, OCBI, OCBO) and motivation (i.e., job engagement). Using these fair process effect relationships as the basis for analysis, I organized this final chapter in the following manner. First, results are summarized for testing GEM and UMT independently and as a combined model. These results did not always align with theory, so further explanations are also given to explain any unexpected findings. Second, *post hoc* analyses were performed in light of the dissertation findings and those results are also discussed. Finally, this chapter ends with potential areas for future research as well as listing any study limitations.

Group Engagement Model

Social identity theory states that people categorize themselves as group members and these cognitive connections can serve as powerful motivators of behavior based on the adoption of group values and expectations (Tajfel & Turner, 1986). These social identities can be found both in personal and work life. Ashforth and Mael (1989) applied this social identity premise to the workplace by introducing organizational identification, which represents the cognitive connection between employees and the organization. Through many years of research, organizational identification has been shown to be a powerful workplace motivator (Haslam, 2004). GEM argues that individuals' social identities explain the fair process effect (Tyler & Blader, 2003). This dissertation proposed organizational identification to mediate the relationships of procedural justice, interactional justice, and economic evaluations with task performance, OCBI, OCBO, and job engagement.

Previous research has found relationships of procedural justice and economic evaluations of pay with extra-role behavior were mediated by organizational identification (Blader & Tyler, 2009). This dissertation only found organizational identification explained the relations of

economic evaluations with OCBO providing only limited support for GEM. This dissertation did not find this mediating effect for relationships of justice with performance behaviors despite organizational identification being a critical motivating force for work behaviors and attitudes (Ashforth & Mael, 1989). However, identities are often positioned as distal to actual behavior and require situational cues to become active (Cropanzano et al., 1992). Alexander and Wiley (1981) described the situated identity as one which only becomes active in certain relevant contexts. Supporting this premise, research has found situational cues do activate the relationships between identities and actual behavior.

Farmer and Van Dyne (2010) examined the relationship between industrious work identity (i.e., organizational work routines are viewed as part of an individual's self-concept) and task performance, and found this relationship was only significant for full time workers when compared with part time workers. Full time workers were thought to have better networks and resources than part time workers, which reinforced their identities. The particular role created contextual salience, stimulating the situated identity effect. One reason identity-related effects posited in this dissertation did not occur could be due to unmeasured situational influences in the examined organization. Unfortunately, I did not focus on potential environmental cues that might have affected organizational identification's salience.

Although organizational identification did not mediate justice-performance relations, it was found to mediate the relationships of procedural justice, interactional justice, and economic evaluations with job engagement. Employees did become engaged in their work when they identified with the organization. Perceptions of fair treatment and favorable pay/benefits may have created a secure feeling that employees are valued assets. The security and positive esteem supplied to employees through these effects increased their organizational identity, which in turn

promoted job engagement. Because the social identity mediation hypothesis was significant for job engagement but not supervisor-rated behaviors, job engagement may represent a stronger motivator for exhibiting performance behaviors than organizational identification in this organization. Corporate was also comprised of business professionals whereas the non-corporate contained sales associates. The differing means for evaluating performance may have also influenced the results here.

Uncertainty Management Theory

For UMT, previous research has shown uncertainty to strengthen the relationships of justice with behavioral reactions and job attitudes (e.g., De Cremer et al., 2010; Diekmann et al., 2004; Tangirala & Alge, 2006; Thau et al., 2009). Fairness perceptions serve as a means for coping with uncertainty leading to this strengthening effect (Lind & Van den Bos, 2002). When employees perceive high uncertainty, they react more strongly to fair treatment by exhibiting higher performance and motivation because they trust that similar treatment will ensue in the future.

The two forms of uncertainty examined in this dissertation were uncertainty about senior management trustworthiness (i.e., the degree of certainty senior management can be trusted) and employment uncertainty (i.e., the degree of certainty employees hold with respect to the security of their jobs from potential job loss). Neither of these uncertainties significantly moderated the relationships of procedural and interactional justice with task performance, OCBI, and OCBO. Uncertainty about senior management trustworthiness did significantly moderate the relationships of procedural and interactional justice with job engagement. Additionally, employment uncertainty moderated the relationship of procedural justice with job engagement but not the relationship between interactional justice and job engagement.

Unexpectedly, for all significant interactions, high uncertainty did not strengthen relationships between justice and motivation as suggested by UMT. Justice only significantly related with job engagement when uncertainty was low. Uncertainty about senior management trustworthiness and employment uncertainty may represent two uncertainty forms that do not increase the importance of fair treatment.

When employees are uncertain about the trustworthiness of senior management or the security of their jobs, they may not trust the entity which they feel is causing the uncertainty. These two uncertainty forms may be too closely linked to the organization supplying the fair treatment to trust the organization's motives. Employees may view fair treatment as nevertheless insincere and not react in theoretically expected ways because they no longer trust the organization. Individuals need to feel secure prior to increasing job engagement because this motivation requires substantial effort on the employee's part. Therefore, employees need to trust the fairness supplying entity in order to react to fair treatment by becoming engaged.

Colquitt, Piccolo, LePine, Zapata, and Rich (2012) showed that employees react to fair treatment by increasing their trust in the supervisor (i.e., a willingness of the trustor to be vulnerable to the trustee; Mayer, Davis, & Schoorman, 1995), which lowers general work uncertainty (i.e., an overall assessment of the degree uncertainty exists at work) leading to favorable performance. This study was able to show the causal relationships among justice, trust, general work uncertainty, and performance. For the justice-performance relationship to be effective, employees must trust the fairness supplying entity. Therefore, it is possible that some uncertainties damage employee trust in the organization and fairness no longer motivates employees evident in no relationship with job engagement. Employees may blame uncertainty about senior management trustworthiness and employment on the organization, which could

diffuse the benefits normally expected from fair treatment. In essence, these uncertainties reduce trust more than broadly defined work uncertainty forms (e.g., general work uncertainty).

In reviewing UMT studies, I noticed most research used general measures of uncertainty. Such operationalizations might not reduce trust to the extent found with uncertainty about senior management trustworthiness and employment uncertainty. When I compared uncertainty about senior management trustworthiness and employment uncertainty with uncertainties in published UMT studies, the uncertainties I examined in this dissertation were more closely tied to the fairness employing entity than those found in published works. De Cremer et al (2010) examined uncertainty about employee standing in the organization. Employees may view this uncertainty as simply a self-perception of standing based on their relationships with coworkers, which would be less detrimental to organizational trust. Tangirala and Alge (2006) compared computer-mediated groups with face-to-face groups on the relationship between interpersonal treatment and overall fairness. The computer-mediated groups were thought to have more uncertainty about other group members than found with face-to-face groups, leading to the strengthening of the interpersonal treatment-fairness relationship. Again, the organization may not be blamed for causing the uncertainty because it was part of their work assignment.

Diekmann, Barsness, and Sondak (2004) found uncertainty about information relating to work performance (i.e., uncertainty about work information) to moderate the positive relationship between overall fairness and job satisfaction, such that when uncertainty was high, the relationship was stronger. This informational uncertainty type may simply be tapping into a lack of informational justice and employees can use other forms of fair treatment to substitute when this information is absent. Previous justice research has shown that procedural and distributive fairness interact to influence employees' system-referenced outcomes (e.g., Folger et

al., 1983). Procedural and distributive fairness are thought to interact because one form of justice can substitute for a lack of information on the other. In the same way, when employees cannot confidently evaluate informational justice perceptions, they may use their overall fairness evaluations more to determine job satisfaction.

Although many UMT studies used more general forms of uncertainty, one study did use a manager-related uncertainty similar to the dissertation's uncertainty about senior management trustworthiness. Thau et al. (2009) showed that when uncertainty about management style (i.e., certainty associated with the predictability of management behavior) was high, the relationship between abusive supervision (i.e., unfair supervisor treatment) and deviant work behaviors was stronger. These findings did support UMT, but the tested outcome was deviant behavior rather than the positive work behaviors I examined. Unfair treatment by a supervisor in the presence of high uncertainty about management style may serve as justification for seeking retribution by increasing deviant behavior. With this uncertainty, fairness does not serve as a coping mechanism.

Recent research shows that uncertainty can induce *want* over *should* actions (Milkman, 2012). Individuals in general have *want* and *should* actions, and their self-control allows them to exhibit *should* over *want* actions. For example, employees may *want* to seek revenge for unfair treatment but know they *should* perform their job roles and ignore the negative treatment. Under normal conditions, they are able to exhibit the self-control necessary to restrain themselves from seeking retribution. In self-control theory, it is thought that individuals must actively employ psychological resources toward preventing themselves from pursuing *want* actions. When uncertainty is present, however, it is difficult to put forth the effort required to pursue *should* choices because psychological resources are directed toward coping with the uncertainty

(Muraven & Baumeister, 2000). This use of psychological resources diminishes their ability to react as they *should* to fair treatment by becoming engaged.

Applying self-control theory (Muraven & Baumeister, 2000) to Thau et al.'s (2009) study, employees may understand that despite being treated poorly by their supervisor, they *should* not react by engaging in deviant behaviors even if they *want* to. Normally, they are able to exhibit the self-control necessary to restrain themselves from pursuing deviant behaviors directed at the source of their abusive treatment. However, when uncertainty is high, their self-control is reduced, as evidenced by a stronger relationship between abusive supervision and deviant behavior. I view *should* actions as performance behaviors and *wants* as behaviors that are not work-related.

Should actions are based on social exchange relationships employees hold at work such as reacting to fair treatment by increasing motivation (e.g., job engagement) or performance (e.g., task performance). Employees form social relationships at work with the employing organization as well as their supervisor and coworkers, which motivate employee work behaviors. Social exchange theory (Blau, 1964) indicates that individuals engage in exchanges of intangible assets such as respect which develop social exchange relationships. When employees perceive nontangible assets such as respect and status supplied to them by their organization, they become more willing to exert the effort necessary to increase job engagement. Employees are thus viewing the fair treatment as the intangible asset that is part of the social exchange relationship. Procedural and interactional justice carry relational information such as respect and the relationship of these justice types with performance has been found to be mediated by these social exchange relationships (e.g., Masterson et al., 2000).

Employees understand fair treatment is supplied with expectations of performance increases representing how they *should* act. Some organizational theories maintain employees do not naturally desire to work and may need to be directed toward proper performance behaviors (Kopelman, Prottas, & Falk, 2010; McGregor, 1960). Thus, performance behaviors might not represent *want* actions. Instead, it takes conscious effort on the employees' part to direct efforts towards work behaviors when reacting to fair treatment. The organization directs these actions towards these behaviors through the development of social exchange relationships. Under low uncertainty conditions, employees understand the expectations and view the fair treatment as part of the exchange as sincere, evident in this dissertation by increases in job engagement. When uncertainties are tied to the fairness-supplying entity rather than general work uncertainties, trust in the fairness supplying entity or organization is damaged. Without trust, employees may not be able to supply the effort necessary to become engaged in reaction to fair treatment (*should* actions) and instead pursue non-work actions (*want* actions), because they are no longer able to exert self-control.

Uncertainty about senior management trustworthiness and employment may represent uncertainty forms that are too closely linked to the organization supplying the fair treatment to view this treatment as sincere. If the employees participating in my study did not naturally *want* to work, favorable social exchange relationships might have motivated them only when the exchanges were viewed as sincere. If these two types of uncertainty diminished the social exchange relationships, then fair treatment would supply information to cope with high uncertainty about senior management trustworthiness and employment uncertainty. Thus, employees may have acted as they *should* by increasing job engagement only when these uncertainties were low because they could trust the procedural and interactional justice supplied

by the organization. These dissertation findings supply potential boundary conditions to UMT. The two uncertainty forms studied here represent uncertainties that are potentially linked to organizational actions. As already stated, previous research has utilized more general work uncertainties. Future research is thus needed to determine the primary range and types of uncertainties facing organizations and their employees.

The Combined Model of GEM and UMT and Post Hoc Analyses

Based on group engagement and uncertainty management arguments, I proposed that uncertainty should strengthen the mediating effect of organizational identification on the relationships of procedural and interactional justice with performance and motivation. This first stage moderation model was not supported. Organizational identification may be a situated identity requiring certain cues to activate the relationships between identity and performance. Because several justice relationships were significant with job engagement, job engagement may represent a stronger motivator than organizational identification when situational cues are not present. Given the close connection between the measured uncertainties (i.e., uncertainty about senior management trustworthiness, employment uncertainty) and the organization, the mediating effect for job engagement is thought to only be present when these uncertainties are low. In other words, the relationships of procedural and interactional justice with performance are only expected to be mediated by job engagement when uncertainty about senior management trustworthiness and employment uncertainty are low.

According to self-control theory (Muraven & Baumeister, 2000), individuals may only be able to exert the self-control required for exhibiting *should* over *want* choices when uncertainty is low. Uncertainty about senior management trustworthiness and employment uncertainty are expected to consume employees' psychological resources with thoughts and concerns about the

uncertainty. For example, employees who witness high uncertainty about senior management trustworthiness are more concerned with why these upper level employees have not interacted more with lower level employees in an attempt to limit these uncertainty perceptions. High employment uncertainty should also increase employee worries about their job security. These thoughts take cognitive effort which would limit the extent that reacting to fair treatment would increase job engagement. Employees may also question the sincerity of the fair treatment which would further limit their willingness to become engaged. Only when these uncertainties are low would employees have the available psychological resources to devote to reacting as they *should*, evident by an increase in their work motivation or job engagement. *Should* actions are thus a result of a willingness to trust the entity supplying the fair treatment as part of the social exchange relationship.

Uncertainty about senior management trustworthiness and employment uncertainty may both be two forms of uncertainty which damage the social exchange relationship. When this damage occurs, employees are more prone to engage in behaviors that may not be work-related (i.e., *want* choices). Kahn (1990) stated that individuals desire a safe and secure place to invest their engagement energies. When these uncertainty forms are low, employees perceive the organization as trustworthy so they can safely react to fair treatment by becoming engaged. This increase in motivation then translates into performance increases, an idea that served as the premise behind the *post hoc* analysis.

The results of the *post hoc* analysis were somewhat congruent with self-control theory tenets. Uncertainty about senior management trustworthiness moderated the mediated paths of procedural justice with task performance and OCBO via job engagement such that mediation was only found when uncertainty was low. Employees can become engaged (i.e., *should* action)

when they can trust senior management and the fair treatment supplied to them. Low uncertainty about senior management trustworthiness increases the likelihood of *should* actions (e.g., procedural justice-task performance relationship, procedural justice-OCBO relationship) which can be explained by increases in motivation or job engagement. When employees no longer view the fairness of procedures as sincere because they are unable to trust senior managers who develop these procedures, they are unwilling to exert the effort for becoming engaged at work. This damages the ultimate influence of procedural justice relating with task performance and OCBO. In other words, fair treatment does not relate to these work behaviors through job engagement when uncertainty about senior management is high.

Although a first stage moderation model was found for task performance and OCBO, there was no relationship found between job engagement and OCBI, which was necessary for examining the first stage moderation model. Because job engagement represents the simultaneous investment of physical, cognitive, and emotional energies into work, employees may focus more on activities relating to their job such as task performance and OCBO. The effort needed to become engaged may limit employees' social awareness of co-worker needs, which would lead to less altruistic and courteous actions directed towards these co-workers. Instead, engaged employees are more focused on behaviors directly impacting their work than with individually-directed extra-role behaviors.

Overall, the *post hoc* results suggest some forms of uncertainty may reduce the likelihood of *should* actions and instead lead to the pursuit of *want* behaviors. This process may be explained by job engagement. Employees may perceive uncertainty about senior management trustworthiness as a form of uncertainty that reduces organizational trust, limiting their ability to exert the self-control necessary to reciprocate on fair treatment supplied to them. When

psychological resources are not directed to sustaining self-control, employees may not react to fairness as they *should* by becoming engaged. Only when this uncertainty form is low can employees react to fair treatment by becoming engaged and exhibiting task performance and OCBO.

Future Research Implications

Individuals have been shown to react to fair policies and procedures by forming social identities with entities supplying these favorable treatments (Blader & Tyler, 2009). From a GEM perspective, these identities create a willingness to engage in performance-related behaviors desired by the group and ultimately explain the relationship between justice and performance. This dissertation was able to show the mediating effect of organizational identification on the relationships of procedural justice, interactional justice, and economic evaluations with job engagement. The mediating effect was also found for the relationship between economic evaluations and OCBO, but organizational identification did not mediate any other relationships with performance behaviors rated by supervisors.

I argue that organizational identification may be a situated identity, where situational cues activate identity-relevant information necessary for witnessing relationships between identity and work behaviors such as task performance. Future research may examine how certain job roles (i.e., full time versus part time workers) trigger the relationship between organizational identification and performance. Of course, employees hold multiple identities within an organization including organization and workgroup identities (Riketta & Van Dick, 2005). Certain situational cues may also be different for these identity forms. For example, full time status may only influence relationships between organizational identification and task performance, but may not induce saliency for workgroup identity. Thus, additional research is

needed to build upon these potential reasons for the lack of significant findings here, which would further extend GEM theory.

Another important theory in the fair process effect literature is UMT. There was no support for the examined uncertainties moderating justice-performance relationships as specified by UMT. Unexpectedly, I found that procedural and interactional justice only related with job engagement when both uncertainty about senior management trustworthiness and employment uncertainty were low. These results were in opposition to UMT arguments. Uncertainty about senior management trustworthiness and employment uncertainty may represent two uncertainty forms that employees believe are caused by the organization so they blame the organization for these stressful contexts. For example, if senior management doesn't seem concerned with lower level workers and rarely interacts with these employees, perceptions concerning this uncertainty are the fault of upper management rather than the employee. Strategic actions taken by the organization may also be blamed for creating uncertainty about the security of employee jobs (i.e., high employment uncertainty).

Attribution theory provides a framework for explaining how individuals assign the cause of a personal offense (Shaver, 1985). If employees blame the organization for uncertainty about senior management trustworthiness and employment uncertainty, moderation effects may be opposite of those prescribed by UMT. Bies, Tripp, and Kramer's (1997) theory of revenge states the more individuals blame the offender, the more likely they are to not forgive and instead engage in revenge. Employees who blame the organization for causing these two uncertainties may be more concerned with seeking revenge than with displaying performance-enhancing behaviors. Therefore, it is only in the absence of these uncertainties that employees become engaged and exhibit higher performance.

Previous research supporting UMT used more general forms of uncertainty. These uncertainties, such as general work uncertainty, may not be blamed on the organization and therefore lead to the strengthening of the fair process effect. Future research is needed to examine if blame causes moderating effects opposite those expected by UMT. For example, employment uncertainty may more likely be blamed to actions made by the organization than would be found with a general work uncertainty. Research could examine these and other uncertainties while capturing the degree of blame attributed to the organization for a particular uncertainty. When blame is low, uncertainty should moderate the fair process effect as expected by UMT. The results of this future research should further refine UMT where not all uncertainties induce a strengthening effect.

Additionally, recent research has examined supervisor trust as a means of reducing general work uncertainty in relation to task performance (Colquitt et al., 2012). Although blame could explain the dissertation findings, uncertainty about senior management trustworthiness and employment uncertainty may reduce trust to greater extents than found with general work uncertainties. Trust is necessary for fairness to serve as a coping mechanism in UMT. Employees react more strongly to fair treatment in the presence of high uncertainty because they trust the organization will continue this treatment in the future as long as they react as expected (Lind & Van den Bos, 2002). Therefore, it is important that the uncertainty does not damage employees' trust in the organization supplying the fair treatment. Future research is thus needed to examine how different forms of workplace uncertainties negatively influence trust. Certain forms, such as uncertainty about senior management trustworthiness, should have stronger negative relationships with trust than general work uncertainties do. Additional research on the

uncertainty-trust relationship would give management scholars further insight into UMT (Lind & Van den Bos, 2002).

Despite hypotheses regarding the combined model of GEM and UMT not being supported, interesting *post hoc* analyses emerged. Kahn's (1990) theory of engagement indicated that workplace antecedents such as procedural justice which promote job performance can be explained by job engagement. Rich et al. (Rich et al., 2010) were able to show this mediating effect of job engagement on the relationships of organizational factors including perceptions of support with performance. Although research has supported relationships of these factors with job engagement, previous research has not found a significant relationship between justice and engagement (Saks, 2006). Fair treatment should create a safe feeling for employees to be willing to become engaged, which in turn increases performance. However, there may be certain contexts which limit this willingness to become engaged and only under these conditions does justice relate with performance via job engagement. This dissertation suggests extending job engagement theory by pointing to high uncertainty about senior management trustworthiness as a context where procedural justice does not relate with job engagement. In this dissertation, it was only when uncertainty about senior management trustworthiness was low that job engagement mediated the relationships of procedural justice with task performance and OCBO. Future research should examine other relationships that might be affected by uncertainty about senior management trustworthiness. In addition to this uncertainty, research could also examine uncertainties that strengthen the mediated relationships examined here.

Study Limitations

Despite theory driving the direction of proposed relationships, this dissertation does have some limitations worth noting. First, the sample size of 161 employees may have led to some

relationships with supervisor-rated behaviors being undetected. Although this dissertation obtained 161 responses which was considered a sufficient sample size based on power analysis results (i.e., 174 respondents), some relationships may have remained undetected especially when moderation was involved. Cashen and Geiger (2004) reviewed mainstream management journals and found most studies had low power. Future research should reexamine the model presented here with larger sample sizes to validate these findings. Second, this study examined a company in the industrial manufacturing sector. Results found here may only generalize to other manufacturing firms, and additional research is needed for testing this model in other industries such as retail to enhance the generalizability of the results. Third, all variables excluding supervisor-rated task performance, OCBI, and OCBO were collected from the same source. Relationships among same source variables could be inflated creating problems with common method bias (Podsakoff et al., 2003). To limit this potential bias, I performed Lindell and Whitney's (2001) marker variable analysis which did not indicate that CMV was problematic with these data. Future research may still benefit by separating data collections of independent (e.g., procedural and interactional justice) and mediator (e.g., organizational identification) variables at two time periods to further limit the potential of CMV.

Conclusion

GEM and UMT have found substantial support as psychological explanations of why and when the fair process effect matters. This dissertation examined independent tests and a combined model for these two prominent theories. The results indicated only limited support for GEM, and for UMT, the significant moderation results were opposite of expected directions. Also, no support was found for the GEM - UMT combined model. *Post hoc* analyses revealed that job engagement explained the relationships of procedural with task performance and OCBO

only when uncertainty about senior management trustworthiness was low. These results provided support for self-control theory which introduces a potential new direction for fair process effect literature. Continued research into the understanding of the role of uncertainty in the justice-performance relationship is needed as well as the use of self-control theory as a way to further explain the fair process effect.

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APPENDIX A

Subordinate Survey Items

Procedural Justice (1 = To a Small Extent to 5 = To a Great Extent; Colquitt, 2001)
The following items refer to the procedures used to arrive at all organizational outcomes or decisions. To what extent:

1. Have you been able to express your views and feelings during those procedures?
2. Have you had influence over the outcomes arrived at by those procedures?
3. Have those procedures been applied consistently?
4. Have those procedures been free of bias?
5. Have those procedures been based on accurate information?
6. Have you been able to appeal the outcomes arrived at by those procedures?
7. Have those procedures upheld ethical and moral standards?

Interactional Justice (1 = To a Small Extent to 5 = To a Great Extent; Colquitt, 2001)
The following items refer to (the authority figure who enacted the procedure). To what extent:

1. Has your supervisor treated you in a polite manner?
2. Has your supervisor treated you with dignity?
3. Has your supervisor treated you with respect?
4. Has your supervisor refrained from improper remarks or comments?
5. Has your supervisor been candid in his/her communications with you?
6. Has your supervisor explained the procedures thoroughly?
7. Were your supervisor's explanations regarding the procedures reasonable?
8. Has your supervisor communicated details in a timely manner?
9. Has your supervisor seemed to tailor his/her communications to individuals' specific needs?

Evaluations of pay (1 = Strongly Disagree to 5 = Strongly Agree; Tyler & Blader, 2000, 2001)

1. Overall, I receive excellent pay at this company.
2. I am satisfied with my pay.
3. I am well compensated for the work I do.

Incentives (1 = Strongly Disagree to 5 = Strongly Agree; Tyler & Blader, 2000, 2001)

1. The benefits I get are directly linked to the effort I put into my job.
2. Rewards are distributed among employees according to the effort that they put into their jobs.
3. Employees are rewarded based on how well they do their jobs, not how well they maneuver through office politics.

Uncertainty about Senior Management Trustworthiness (1 = Very Uncertain to 5 = Very Certain; Tyler & Huo, 2002)

1. How certain are you that you can trust senior management here?
2. How certain are you that senior management tries to do the right thing by you?
3. How certain are you that senior management takes your needs into account?

4. How certain are you that senior management cares about your concerns?

Employment Uncertainty (1 = Very Uncertain to 5 = Very Certain; Caplan et al., 1975; Johnson et al., 1984)

1. How certain are you about your future career picture looks like in your organization?
2. How certain are you of the opportunities for promotion and advancement that will exist in the next few years?
3. How certain are you about your job security?
4. How certain are you about what your job responsibilities will be six months from now?
5. How certain are you that if you do good work, your job will be safe?

Creative Self-Efficacy (1 = Strongly Disagree to 5 = Strongly Agree; Tierney & Farmer, 2002)

1. I feel that I am good at generating novel ideas.
2. I have confidence in my ability to solve problems creatively.
3. I have a knack for further developing the ideas of others.

Patriotism (1 = Strongly Disagree to 5 = Strongly Agree; Kosterman & Feshbach, 1989)

1. I am proud to be an American.
2. I am emotionally attached to America and emotionally affected by its actions.
3. Although at times I may not agree with the government, my commitment to the U.S. always remains strong.
4. The fact that I am an American is an important part of my identity.
5. In general, I have respect for the American people.

Organizational Identification (1 = Strongly Disagree to 7 = Strongly Agree; Mael & Ashforth, 1992)

1. Working at my company is important to the way that I think of myself as a person.
2. When someone praises the accomplishments of my company, it feels like a personal compliment to me.
3. When someone from outside criticizes my company, it feels like a personal insult.
4. The place I work says a lot about who I am as a person.
5. I think I am similar to the people who work at my company.

Job Engagement (1 = Strongly Disagree to 5 = Strongly Agree; Rich et al., 2010)

1. I exert my full effort to my job.
2. I try my hardest to perform well on my job.
3. I strive as hard as I can to complete my job.
4. I am enthusiastic in my job.
5. I feel energetic at my job.
6. I am excited about my job.
7. At work, I pay a lot of attention to my job.
8. At work, I focus a great deal of attention on my job.
9. At work, I am absorbed by my job.

APPENDIX B

Supervisor Survey Items

OCBI (1 = Never to 5 = Always; Lee & Allen, 2002)

1. [This employee] helps others who have been absent.
2. [This employee] willingly gives his/her time to help others who have work-related problems.
3. [This employee] adjusts his/her work schedule to accommodate other employees' requests for time off.
4. [This employee] goes out of the way to make newer employees feel welcome in the work group.
5. [This employee] shows genuine concern and courtesy toward coworkers, even under the most trying business or personal situations.
6. [This employee] gives up time to help others who have work or nonwork problems.
7. [This employee] assists others with their duties.
8. [This employee] shares personal property with others to help their work.

OCBO (1 = Never to 5 = Always; Lee & Allen, 2002)

1. [This employee] attends functions that are not required but that help the organizational image.
2. [This employee] keeps up with developments in the organization.
3. [This employee] defends the organization when other employees criticize it.
4. [This employee] shows pride when representing the organization in public.
5. [This employee] offers new ideas to improve the functioning of the organization.
6. [This employee] expresses loyalty toward the organization.
7. [This employee] takes action to protect the organization from potential problems.
8. [This employee] demonstrates concern about the image of the organization.

Task Performance (1 = Strongly Disagree to 5 = Strongly Agree; Podsakoff & MacKenzie, 1989)

1. [This employee] always completes the duties specified in his/her job description.
2. [This employee] meets all the formal performance requirements of his/her job.
3. [This employee] fulfills all responsibilities required by his/her job.
4. [This employee] never neglects aspects of the job that he/she is obligated to perform.
5. [This employee] successfully performs essential duties.

APPENDIX C

Subordinate Email Content

Dear [SUBORDINATE NAME],

My name is Jeffrey Haynie and I am a graduate student in the Department of Management at Auburn University. I would like to invite you to participate in my research study to assess climate and other organizational variables relating to your job and the organization. You are being contacted because you are an employee at this company.

Participants will be asked to complete a short online survey which should take approximately 20 to 30 minutes to complete. Your responses will be matched with performance and behavioral evaluations rated by your supervisor. To match these responses, a coding list was created which leaves the potential for a breach of confidentiality. However, I am the only one who has access to the coding list. The coding list will also be destroyed prior to any analysis or departmental averages created for organizational reports.

If you would like to know more information about this study, an information letter can be obtained by clicking on the following link: [INSERT WEBLINK HERE]. If you decide to participate after reading the letter, you can access the survey from a link in the letter.

If you have any questions, please contact me at PH: 334-844-6540; EMAIL: jjh0002@auburn.edu or my advisor, Dr. Kevin Mossholder, at PH: 334-844-6529; EMAIL: kwm0003@auburn.edu.

Thank you for your consideration,

Jeffrey J. Haynie
Doctoral Student
Auburn University
Department of Management
PH: 334-844-6540; FAX: 334-844-5159
EMAIL: jjh0002@auburn.edu

Subordinate Information Letter

INFORMATION LETTER
For a Research study entitled
"A Combined Model of Uncertainty Management Theory and the Group Engagement Model of Identity"

You are invited to participate in a study to assess climate and other organizational variables relating to your job and the organization. You were chosen as a potential participant because you are an employee at this company. The study is being conducted by Mr. Jeffrey Haynie, a doctoral student, under the direction of Dr. Kevin Mossholder, a full professor in the Auburn University Department of Management.

Your participation is completely voluntary. If you decide to participate in this research study, you will be asked to complete a short online survey, where the survey link follows the proposal you are currently reading. Your total time commitment will be approximately 20 to 30 minutes.

The only risk associated with the study is a breach of confidentiality. However, it is important that you understand measures have been taken to keep all collected information completely confidential. This study requires your responses be matched to performance and behavioral assessments rated by your supervisor. To be able to match these responses, a code list has been created and is necessary so that the independent surveys are appropriately linked. The coding list will only be accessible to Jeffrey Haynie and no company personnel will be able to view this file. Management will only be given a case report with departmental averages of survey responses and no individual identities will be part of the report. To further protect your identity, all coding lists and other identifiers will be removed after the surveys are matched and prior to producing any reports.

If you participate in the study, you can expect to voice your level of agreement with statements concerning your job and the organization. These voice opportunities may point out departmental shortfalls for managerial actions based on departmental averages of responses by you and fellow employees generated by Jeffrey Haynie.

I**f you change your mind about participating**, you can withdraw at any time by closing your browser window. If you choose to withdraw, your data can be withdrawn as long as it is identifiable. Once data has had direct identifiers removed, it cannot be withdrawn since it will be unidentifiable. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with Auburn University, the Department of Management or your organization.

Any data obtained in connection with this study will remain confidential. We will protect your privacy and the data you provide by deleting any identifying information prior to analysis and the generation of any reports. No data in group sizes less than 10 will be presented to the company. Information collected through your participation may be used to assess the current organizational climate from departmental averages, to fulfill the Ph.D. requirements at Auburn University for Jeffrey Haynie, and will lead to manuscripts presented at conferences and published in academic journals.

If you have any questions about this study, please contact
Mr. Jeffrey Haynie at PH: 334-844-6540; EMAIL: jjh0002@auburn.edu
or Dr. Kevin Mossholder at PH: 334-844-6529; EMAIL: kwm0003@auburn.edu.

If you have any questions about your rights as a research participant, you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by phone (334) 844-5966 or e-mail at hsubjec@auburn.eduor IRBChair@auburn.edu.

Jeffrey J. Haynie	09/15/2011
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PRIMARY INVESTIGATOR	DATE
Kevin W. Mossholder	09/15/2011
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CO-INVESTIGATOR	DATE

The Auburn Institutional Review Board has approved this document for use from September 23, 2011 to September 22, 2012. Protocol #11-285 EP 1109.

HAVING READ THE INFORMATION ABOVE, YOU MUST DECIDE IF YOU WANT TO PARTICIPATE IN THIS RESEARCH PROJECT. IF YOU DECIDE TO PARTICIPATE, PLEASE CHECK THE RESPONSE NEXT TO 'YES' AND CLICK ON THE LINK BELOW. YOU MAY PRINT A COPY OF THIS LETTER TO KEEP.

Supervisor Email Content

Dear [SUPERVISOR NAME],

My name is Jeffrey Haynie and I am a graduate student in the Department of Management at Auburn University. I would like to invite you to participate in my research study to examine climate and other organizational variables at your company. You are being contacted to rate performance and behavioral evaluations on your subordinates as part of my dissertation study.

These subordinate ratings should take approximately 5 to 10 minutes per subordinate to complete. These ratings are necessary so that attitudinal and perceptual evaluations by subordinates can be matched with actual behavioral outcomes rated by you. To match these responses, a coding list was created which leaves the potential for a breach of confidentiality. However, I am the only one who has access to the coding list. The coding list will also be destroyed prior to any analysis or departmental averages created for organizational reports.

If you would like to know more information about this study, an information letter can be obtained by clicking on the following link: [INSERT WEBLINK HERE]. If you decide to participate after reading the letter, you can access the survey from a link in the letter.

If you have any questions, please contact me at PH: 334-844-6540; EMAIL: jjh0002@auburn.edu or my advisor, Dr. Kevin Mossholder, at PH: 334-844-6529; EMAIL: kwm0003@auburn.edu.

Thank you for your consideration,

Jeffrey J. Haynie
Doctoral Student
Auburn University
Department of Management
PH: 334-844-6540; FAX: 334-844-5159
EMAIL: jjh0002@auburn.edu

Supervisor Information Letter

INFORMATION LETTER
For a Research study entitled
"A Combined Model of Uncertainty Management Theory and the Group Engagement Model of Identity"

You are invited to participate in a study to assess climate and other organizational variables based on concerns voiced by your subordinates and others at this company. You were chosen as a potential participant because you supervise surveyed employees and can properly evaluate behavioral displays (e.g., task performance, helping behaviors) by these employees. The study is being conducted by Mr. Jeffrey Haynie, a doctoral student, under the direction of Dr. Kevin Mossholder, a full professor in the Auburn University Department of Management.

Your participation is completely voluntary. If you decide to participate in this research study, you will be asked to complete a short online survey, where the survey link follows the proposal you are currently reading. Your total time commitment will be approximately 5 to 10 minutes per subordinate. These responses are critical to determine the importance of subordinate responses based on their associations of collected variables with performance and other behaviors.

The only risk associated with the study is a breach of confidentiality. However, it is important that you understand measures have been taken to keep all collected information completely confidential. This study requires your subordinate ratings to be matched with subordinate evaluations of their job and the organization. To be able to match these responses, a code list has been created and is necessary so that the independent surveys are appropriately linked. The coding list will only be accessible to Jeffrey Haynie and no company personnel will be able to view this file. Managers, such as yourself, will be given a case report with departmental averages of survey responses and no individual identities will be part of the report. To further protect any participant identities, all coding lists and other identifiers will be removed after the surveys are matched and prior to producing any reports.

If you participate in the study, you can expect to rate your level of agreement with statements assessing performance and behavioral displays on each of your subordinates. These ratings will determine which subordinate attitudes and perceptions are critical based on their associations with behavioral ratings. Once the importance of these attitudes and perceptions is established, the departmental averages of subordinate responses computed by Jeffrey Haynie will have meaning.

If you change your mind about participating, you can withdraw at any time by closing your browser window. If you choose to withdraw, your data can be withdrawn as long as it is identifiable. Once data has had direct identifiers removed, it cannot be withdrawn since it will be unidentifiable. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with Auburn University, the Department of Management or your company.

Any data obtained in connection with this study will remain confidential. We will protect your privacy and the data you provide by deleting any identifying information prior to analysis and the generation of any reports. No data in group sizes less than 10 will be presented to the company. Information collected through your participation may be used to assess the current organizational climate from departmental averages, to fulfill the Ph.D. requirements at Auburn University for Jeffrey Haynie, and will lead to manuscripts presented at conferences and published in academic journals.

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If you have any questions about your rights as a research participant, you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by phone (334) 844-5966 or e-mail at hsubjec@auburn.edu or IRBChair@auburn.edu.

Jeffrey J. Haynie	07/01/2011
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PRIMARY INVESTIGATOR	DATE
Kevin W. Mossholder	07/01/2011
---	---
CO-INVESTIGATOR	DATE

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