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Organizational perceptions and their relationships to job attitudes effort, performance and organizational citizenship behaviors

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ORGANIZATIONAL PERCEPTIONS AND THEIR RELATIONSHIPS TO JOB ATTITUDES, EFFORT, PERFORMANCE, AND ORGANIZATIONAL CITIZENSHIP BEHAVIORS

A Dissertation

Submitted to the Graduate Faculty of the Louisiana State University and Agricultural and Mechanical College in partial fulfillment of the requirements for the degree of Doctor of Philosophy

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The Department of Psychology

by

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ABSTRACT

This study integrates and expands two models of organizational support perceptions, job attitudes, effort, and employee behavior (i.e., Brown & Leigh, 1996; Netemeyer, Boles, McKee, & McMurrian, 1997). An integrated model was hypothesized, in which Perceived Organizational Support and Perceived Opportunity for Reward impacted job satisfaction, organizational commitment, and job involvement, which in turn influenced effort (work intensity and time commitment), which subsequently impacted Organizational Citizenship Behaviors (OCBs) and in-role performance. Employee–supervisor dyads were surveyed (n = 279), and structural equation modeling was used to test the hypothesized model and several alternative models. Results indicated that the hypothesized model fit the data well, and fit better than several a priori developed alternatives. Inspection of specific parameter estimates indicated that POS and POR impacted job satisfaction, job involvement, and affective organizational commitment. In turn, job satisfaction influenced work intensity, whereas job involvement influenced time commitment. Contrary to predictions, employee effort did not significantly impact in-role performance or OCBs. Limitations, contributions, and practical implications are discussed.
INTRODUCTION

The antecedents and consequences of job attitudes (i.e., job satisfaction, job involvement, organizational commitment) have been of great interest to behavioral scientists for much of the last century (Dipboye, Smith & Howell, 1994). Practitioners and researchers have gone to great lengths to understand and influence employee attitudes because of their relationships with important employee and organizational outcomes. For example, research indicates links between job attitudes and absenteeism (Cheloha & Farr, 1980), employee turnover, internal motivation (Brown, 1996), and effort (Brown & Leigh, 1996). In addition to these correlates, job attitudes are of particular interest to practitioners and researchers because of their assumed link to job performance (Staw, 1986) and Organizational Citizenship Behaviors (OCBs) (Organ & Ryan, 1995).

Although job attitudes are assumed to relate to in-role job performance, research generally has not supported these seemingly intuitive relationships. Different studies have observed either positive, negative, or no relationships between job attitudes and in-role job performance. Specifically, several reviewers have discussed these differing relationships between job performance and job satisfaction (Iaffaldano & Muchinsky, 1985), job involvement (Brown, 1996; Diefendorff, Brown, Kamin & Lord, 2002), and organizational commitment (Mathieu & Zajac, 1990).

In addition to investigating the relations between job attitudes and in-role performance, there has been a related stream of research investigating the relations between job attitudes and organizational citizenship behaviors (OCBs). Research indicates, for instance, that job attitudes are more strongly related to OCBs than to in-role performance in many contexts (Organ & Ryan, 1995). In-role performance has alternately
been conceptualized as “task performance” (encompassing those behaviors relating specifically to the job and core job duties), whereas OCBs have been alternately conceptualized as “contextual performance” (performance in areas impacting social, cultural, and environmental factors in the workplace where task performance occurs) (Borman & Motowidlo, 1993). Both in-role performance and OCBs are of interest to researchers and practitioners because they impact organizational effectiveness (MacKenzie, Podsakoff & Fetter, 1993; Organ, 1988a). In this paper we use the term “employee behavior” to refer to both in-role performance and OCBs.

In an attempt to better understand the factors affecting job attitudes and employee behavior, researchers have turned their attention to organizational and individual factors that might influence these relationships (e.g., Brown & Leigh, 1996; Cherrington, Reitz & Scott, 1971; Jacobs & Solomon, 1977; Netemeyer, Boles, McKee & McMurrian, 1997; Randall, Cropanzano, Bormann & Birjulin, 1999; Sims & Szilagyi, 1975). One approach to test relationships between job attitudes and employee behavior has been to develop and test theoretical models that simultaneously incorporate multiple factors that may influence job attitudes and their relations to job performance and OCBs. Understanding these complex relations is important to researchers from a theoretical point of view and of interest to practitioners from a financial and applied perspective. After all, as our understanding of the complex relations between factors influencing employee behavior increases, so does our ability to influence these factors, which likely translates into organizational effectiveness and profitability (Makin, Cooper & Cox, 1996). To this end, the purpose of the current study is to integrate key aspects of two models of employee behavior (Brown and Leigh’s model of job performance and Netemeyer et al.’s model of
OCBs) and to include an additional attitude, affective organizational commitment, to provide a more comprehensive assessment and understanding of the factors that may impact job attitudes and employee behavior. These studies were chosen because of their focus on perceptions of organizational support, which may be key antecedents to job attitudes and employee behavior via initiation of social exchange relationships (Randall et al.).

This paper begins by briefly highlighting and discussing the underlying theories upon which the two above-mentioned studies and the current study are based. After this foundation is established, Brown and Leigh’s (1996) model of job performance and Netemeyer et al.’s (1997) model of OCBs are reviewed. Next, integrating key aspects of these two models, a hypothesized model is presented. Finally, the method used to test the hypothesized model is presented, followed by results and a discussion of findings from the study. Finally, contributions and limitations of the study are discussed.

Theoretical Background

One framework proposed to explain factors affecting the relationships between job attitudes and employee behavior is social exchange theory (Konovsky & Pugh, 1994). This theory’s basic tenet is that individuals feel obligated to reciprocate in some way when others treat them well or reward them. This concept is also contained in the “norm of reciprocity”: when an organization treats employees well, the employees reciprocate in some way (Bateman & Organ, 1983; Schnake, 1991). In an organizational context, organizations treat employees well via opportunities for reward, kind treatment, or showing commitment towards the employees (Brown & Leigh, 1996; Netemeyer et al., 1997). Employees who recognize this positive support then have more favorable attitudes
(e.g., higher job satisfaction, job involvement, or organizational commitment) and may reciprocate through effort exerted towards performing well on the job or serving the organization. This notion of exchange also is central to psychological contract theory, which takes the reciprocal nature of these relationships one step further, suggesting that employees are bound by an unspoken contract to return in kind the benefits bestowed upon them by the organization for which they work (Schein, 1965). Eisenberger, Armeli, Rexwinkel, Lynch, and Rhoades (2001) found evidence in support of this reciprocal exchange in employee-organization relationships. Specifically, these authors investigated the relationship of Perceived Organizational Support (POS) and several outcome variables (i.e., job attitudes and in-role performance), and found that POS was positively related to employees’ feelings of obligation to support their organization, which in turn related to affective organizational commitment and in-role performance. These theories centering on reciprocity in organizational relationships served as a framework for the two studies that were the basis of the hypothesized model in the current study. Each of these studies is discussed below.

Brown and Leigh’s (1996) Model

Brown and Leigh (1996) examined how organizational support variables and employee effort affect the relationship between job involvement and job performance. The authors developed their model based on the premise that positive perceptions of the organizational environment (i.e., how the organization treats employees) lead employees to attach personal meaning to the organization and to reciprocate this positive treatment toward the organization through their actions. Brown and Leigh referred to employees’ perceptions of the organizational environment as psychological climate. Psychological
climate encompasses perceptions of the extent to which management is seen as supportive and accommodating, role clarity, freedom of expression, contribution toward company goals, recognition, and challenge in the job. Brown and Leigh theorized that when employees perceive the organizational environment positively, they will be more involved in their jobs and will exert more effort, which leads to higher job performance. In contrast, when employees perceive the organizational environment negatively, they will be less involved and exert less effort, resulting in decreased job performance. Note that Brown and Leigh focused on employee perceptions of the organizational environment rather than objective characteristics of the situations based on the belief that employee perceptions of the organization are more important than actual characteristics of the environment. This is because perceptions of the environment may not match up with the actual characteristics of the organizational environment, and it is ultimately these individual perceptions, regardless of reality, that impact job attitudes and employee behavior (James, Hater, Gent & Bruni, 1978; James & Jones, 1974).

To test these hypotheses, Brown and Leigh (1996) used a modeling approach, investigating the relationships between psychological climate, job involvement, effort, and job performance (see Figure 1). Brown and Leigh found support for their model such that psychological climate had a direct impact on job involvement. In turn, job involvement had a direct impact on effort, which had a direct impact on one’s in-role job performance. The authors proposed a direct path between psychological climate and effort, but the link was not statistically significant. Their model accounted for 13% of the variance in job performance, and indicated that psychological climate impacts job performance indirectly through job involvement and the amount of effort one exerts. This study is important
Note - Significant paths (p < .05) indicated by underline.

Figure 1. Brown and Leigh’s (1996) model of psychological climate, job involvement, effort, and job performance.
because it is one of the few empirically tested models that has incorporated both antecedent and intervening variables affecting job involvement’s relation with employee job performance, thereby providing a more complete picture of the interplay among factors influencing job involvement and job performance. Another recent model developed by Netemeyer et al. (1997) complements Brown and Leigh’s model, in that Netemeyer et al. included antecedent variables of a different job attitude (i.e., job satisfaction) relating to a different aspect of employee behavior (i.e., OCBs). This study is discussed next.

Netemeyer et al.’s (1997) Model

Netemeyer et al. (1997) developed a model to investigate how leadership support, person-organization fit, and fairness in reward allocation influence OCBs through job satisfaction. Drawing upon the earlier mentioned themes found in social exchange theory (e.g., Konovsky & Pugh, 1994), psychological contract theory (e.g., Robinson & Morrison, 1995), and the “norm of reciprocity” (Bateman & Organ, 1983; Schnake, 1991), Netemeyer et al. theorized that employees engage in behaviors conducive to the organization (i.e., OCBs) when they are satisfied with the organization and with their jobs. That is, employees who perceive themselves to be treated well by their organization and who like their jobs will respond in kind through their own behaviors.

Netemeyer et al. (1997) tested their model linking person-organization fit, leadership support, and fairness in reward allocation indirectly to OCBs through job satisfaction (see Figure 2) with two samples. In study 1, the model provided a good fit to the data—the total amount of variance explained in job satisfaction by leader support, fairness in reward allocation, and person-organization fit was 63%, and the amount of variance explained in OCBs was 9%. In study 2, the model also provided a good fit to the
Note - Path coefficients are reported in the following format in the above diagram: Study 1 (Study 2). Significant paths (p < .05) indicated by underline.

Figure 2. Netemeyer, Boles, McKee, and McMurrian’s (1997) model of person-organization fit, leadership support, fairness in reward allocation, job satisfaction, and OCBs.
data—leadership support, person-organization fit, and fairness in reward allocation explained 32% of the variance in job satisfaction, and, along with job satisfaction, explained 22% of the variance in OCBs.

Although the model hypothesized by Netemeyer et al. (1997) provided a good fit to the data in both samples, there were some observed differences in the significance of paths between the two samples. Specifically, the authors found that all paths in the model were statistically significant in both samples with the exception of the path from fairness in reward allocation to job satisfaction in study 1, and with the exception of the path from leadership support to job satisfaction in study 2. The authors noted that age and maturity differences between the two samples might have led to these differences. Specifically, participants in study 2 (mean age = 48) were older than participants in study 1 (mean age = 29). As such, Netemeyer et al. hypothesized that older employees in the second study may have been less affected by leadership support than younger participants because younger workers may need more leadership support for job-related advice, guidance, and mentoring at a presumably early point in their careers than older workers. Likewise, older workers may have been more affected by perceptions of reward allocation than younger workers because of greater concerns over financial security at a later stage in their lives. Although some differences in the significance of paths were observed, given the theoretical foundation of, and overall support for the model, the authors concluded that the hypothesized model received the most support and is the most appropriate model. Netemeyer et al.’s study is of interest because it provides support for the theory that perceptions of leadership support affect job satisfaction directly, and affect OCBs indirectly. This is important because OCBs likely are more under the control of
employees than is in-role performance (Johns, 1991; Organ & Ryan, 1995), and therefore relationships between job attitudes and OCBs may be more readily observed. Moreover, this study indicates that perceptions of support and reward policies in organizations are important precursors to job attitudes and employee behavior. Finally, this study included a measure of fairness in reward allocation and demonstrated its usefulness beyond perceptions of support of a more interactional nature (i.e., person-organization fit and leadership support) in a model of factors affecting job satisfaction and OCBs. Although the Netemeyer et al. and Brown and Leigh (1996) studies have provided interesting and worthwhile insight into the effects of employee perceptions and how they relate to job attitudes, effort, and employee behavior, both studies have several limitations as discussed below.

**Limitations of Existing Models**

Both Brown and Leigh’s (1996) and Netemeyer et al.’s (1997) studies suffer from three general limitations. First, the studies by Brown and Leigh (measuring job performance) and Netemeyer et al. (measuring OCBs) each assessed only one aspect of employee behavior. As a result, these studies do not reveal information about how perceptions of the organization and job attitudes simultaneously relate to both types of employee behavior (in-role performance and OCBs). Including both in-role performance and OCBs in a model of organizational perceptions, attitudes, effort, and employee behavior is important because both aspects of employee behavior are important to an organization’s bottom line (MacKenzie et al., 1993; Organ, 1988a). Furthermore, OCBs and in-role performance both should be included in models of employee behavior to more
fully and appropriately investigate these factors as outcomes of employee perceptions, job attitudes, and effort.

A second limitation of these studies is that Brown and Leigh (1996) and Netemeyer et al. (1997) each examined only one job attitude; as a result little is known about how different job attitudes simultaneously relate to their antecedents and to employee behaviors. Specifically, Brown and Leigh only included job involvement, and Netemeyer et al. only included job satisfaction in their models. Research indicates that the major job attitudes (i.e., job satisfaction, job involvement, and organizational commitment), although correlated with one another, are factorially distinct (Brooke, Russell & Price, 1988; Mathieu & Farr, 1991) and account for unique variance in criteria (Tett & Meyer, 1993). Therefore, simultaneously including additional job attitudes might increase the amount of variance explained in employee behavior, and thereby provide more information to increase understanding of the relationships between job attitudes and employee behavior.

A third general limitation of this research is that these studies only explained a small portion of the variance in employee behavior. Brown and Leigh’s (1996) model only accounted for 13% of the variance in one’s job performance and Netemeyer et al.’s (1997) model only explained 9% - 22% of the variance in OCBs, indicating that important explanatory factors likely were left out of their models. As mentioned earlier, understanding more of the variability in employee behavior is important from both theoretical and practical perspectives. By integrating the two models discussed above to expand the set of variables that likely are important in the relationships between employee perceptions, job attitudes, and employee behavior, new understanding can be gained
regarding how these factors relate to one another. Further, as we develop an understanding of these factors, we increase our capacity to predict and influence them. Having discussed the limitations of these models of job attitudes and employee behavior, the hypothesized model in this study, which attempts to address these limitations, is discussed next.

**Hypothesized Model**

As shown in Figure 3, the hypothesized model integrates and expands upon concepts from both the Brown and Leigh (1996) model and the Netemeyer et al. (1997) model. Note that this hypothesized model includes some exact constructs and some conceptually similar constructs included in these two previous models. The exact constructs included in both the previous studies and the current one are job involvement, job satisfaction, effort, in-role performance, and OCBs. The conceptually similar concepts are perceived organizational support (POS) (similar to Brown and Leigh’s psychological climate and Netemeyer et al.’s leadership support), and perceived opportunity for reward (POR) (similar to Netemeyer et al.’s fairness in reward allocation). Person-organization fit (included in Netemeyer et al.’s model) was not included in the proposed model because the focus of this study is on how perceptions of organizational support influence attitudes and behavior, rather than on perceptions of how one’s values match those of one’s organization. However, a third job attitude, organizational commitment, that was not included in either previous study is included in the present model. Organizational commitment was included in the present study for two reasons. First, research generally has supported three distinct job attitudes: organizational
Figure 3. Proposed model of POS, POR, job attitudes, effort and employee behavior.
commitment, job involvement and job satisfaction. Second, organizational commitment has been shown to contribute uniquely to variance explained in employee behavior over job satisfaction and job involvement in several studies (Mathieu & Farr, 1991; Tett & Meyer, 1993).

The purpose of the current study is to test the appropriateness of the hypothesized model (see Figure 3). It is hypothesized that this model will fit the data in this study well. Each of the constructs of this hypothesized model will be described in the following paragraphs, along with their paths in the model. Additionally, the advantages of the constructs used in this study over the conceptually similar constructs used in the previous studies are discussed in their respective sections below.

Perceived Organizational Support

POS is defined as an individual’s belief that the organization for which one works values one’s contributions and cares for one’s well-being (Eisenberger, Huntington, Hutchison & Sowa, 1986). POS is affected by employees’ interactions with their organization with regard to the receipt of praise, support, or approval (Shore & Tetrick, 1991). POS was used in the current study rather than leadership support or psychological climate for several reasons. First, POS is widely used in contemporary organizational research. Second, POS is a concise measure conceptually related to both leadership support and psychological climate. Third, POS represents a unidimensional assessment of the degree of perceived support from one’s organization. Fourth, POS specifically assesses employees’ perceptions of support from the organization, whereas psychological climate is a measure of more general perceptions of the organizational environment (e.g., challenge of the job, role clarity) in which employees work. Finally, POS may also
capture cleaner information than leadership support. Several authors (e.g., Levinson, 1965, as cited in Lynch, Eisenberger & Armeli, 1999) have noted that when organizational policies are enforced by representatives of the organization, they are viewed as indications of the organization’s intent more than that of the particular individual carrying out the policy.

As with psychological climate and leadership support, the relationships between POS and job attitudes can be described in the context of a marketplace at work, wherein each time the organization gives an employee something, the employee reciprocates in some fashion (Rusbult & Farrell, 1983). These relationships also are consistent with the norm of reciprocity (Bateman & Organ, 1983), social exchange (Konovsky & Pugh, 1994), and psychological contract theories (Robinson & Morrison, 1995; Schein, 1965), as well as with empirical evidence from recent literature (e.g., Eisenberger et al., 2001). Specifically, research has indicated that individuals who perceive that their organization supports them are more likely to be satisfied with (Eisenberger, Cummings, Armeli & Lynch, 1997), involved with (O’Driscoll & Randall, 1999) and committed to their jobs (Eisenberger et al., 2001; Hutchison, 1997; O’Driscoll & Randall, 1999, Randall et al., 1999; Settoon, Bennett & Liden, 1996). As such, the following paths were proposed:

Path 1: POS will have a positive direct impact on job satisfaction.
Path 2: POS will have a positive direct impact on job involvement.
Path 3: POS will have a positive direct impact on organizational commitment.

**Perceived Opportunity for Reward**

POR is defined as employees’ beliefs about their opportunities for obtaining rewards in their organizations. Included in this are beliefs about the fairness of rewards,
their availability, and the belief that if one works hard, one will be appropriately rewarded (Sims & Szilagyi, 1975). POR was included rather than fairness in reward allocation because POR assesses perceptions of fairness of reward allocation and perceptions of the availability of opportunities for rewards. This is important because an individual working for a fair organization that has few opportunities to be rewarded may have different perceptions of his or her organization, and as such, may behave differently and develop different attitudes than would an individual working for a fair organization where there is an abundance of opportunities for reward. POR is also an important counterpart to POS, because past research has shown that perceptions of organizational support and reward behavior each contribute uniquely to variance in job attitudes (Netemeyer et al., 1997).

From a theoretical viewpoint, the norm of reciprocity mentioned earlier (e.g., Bateman & Organ, 1983) indicates that positive organizational perceptions positively affect job attitudes (i.e., job satisfaction). For example, in Netemeyer et al.’s (1997) study, fairness in reward allocation (similar to POR) was related to job satisfaction. Because of the significant conceptual overlap between POR and fairness in reward allocation, the path stemming from fairness in reward allocation to job satisfaction in Netemeyer et al.’s study was hypothesized to remain for the related construct of POR. Moreover, perceived opportunity for reward should, according to social exchange and reciprocity theory, be positively related to job satisfaction, and should positively impact affective organizational commitment and job involvement as well. All of these factors led to the following paths in the hypothesized model:

Path 4: POR will have a positive direct impact on job satisfaction.

Path 5: POR will have a positive direct impact on job involvement.
Path 6: POR will have a positive direct impact on organizational commitment.

Netemeyer et al.’s (1997) study indicated a significant correlation between leadership support and fairness in reward allocation. This makes sense given that employees who perceive fairness in reward allocation are likely to feel that their leaders and/or organization support them in many cases. As mentioned above, two constructs similar to these (POS and POR) were included in the current model and also were expected to correlate significantly with one another. The current model therefore contained the following path:

Path 7: POS and POR will be positively related.

Job Attitudes

The three most commonly considered job attitudes (i.e., job satisfaction, job involvement, organizational commitment) were included in the current study. One’s job satisfaction, job involvement and (affective) organizational commitment are all likely to be higher as a result of perceiving more support and opportunities for reward from one’s organization, as indicated by past research (Brown & Leigh, 1996; Netemeyer et al., 1997). As discussed earlier, and as observed in Brown and Leigh’s and Netemeyer et al.’s studies, perceptions of support from the organization or perceptions of opportunities for reward related to employees’ more positive job attitudes. Also, all three job attitudes were included because of this study’s goal of addressing limitations in previous research, which has at times failed to include them all. Each attitude is discussed below, along with its related paths in the hypothesized model.

Job Involvement. Job involvement is defined as the extent to which one identifies psychologically with one’s work (Kanungo, 1982). Theoretically, individuals who are
more involved in their jobs should exert more effort (Brown & Leigh, 1996). As discussed earlier, Brown and Leigh found that job involvement was positively related to job performance through effort. Therefore, the hypothesized model contained this relationship:

Path 8: Job involvement will have a positive direct impact on effort.

**Job Satisfaction.** Job satisfaction is most often conceptualized as a positive emotional state relating to one’s job (Seashore, Lawler, Mirvis & Camman, 1983). As discussed above, job satisfaction was significantly related to OCBs in Netemeyer et al.’s (1997) study, though Netemeyer et al. did not include effort in their model. Brown and Leigh (1996) included effort in their model, and showed that effort mediated the relationship between job involvement and in-role performance. Likewise, reciprocity theory (Bateman & Organ, 1983; Schnake, 1991) and social exchange theory (Konovsky & Pugh, 1994) suggest that individuals who are more satisfied with their jobs should exert more effort and perform at a higher level than individuals with lower job satisfaction. This also corresponds with goal setting theory (i.e., the High Performance Cycle), where individuals who have higher job satisfaction as a result of success at past performance have higher motivation (and consequently exert more effort) to perform well than individuals who do not have it (Locke & Latham, 1990). The current model included the following path:

Path 9: Job satisfaction will have a positive direct impact on effort.

**Affective Organizational Commitment.** Affective organizational commitment is defined as an affective attachment to remain with one’s organization (Meyer, Allen & Smith, 1993). Although organizational commitment was not included in either of the
models upon which the current model is based, it was included in the current study in order to assess the impact of multiple job attitudes on effort and employee behavior. This is important because these effects are largely unknown, given that past research infrequently has integrated all three major job attitudes (Brooke et al., 1988). Understanding how these different job attitudes relate to one another and to other constructs will allow researchers to develop more comprehensive theories of job attitudes and their effects on employee behavior. Organizational commitment theoretically should positively relate to effort, because individuals who are more committed to their organization should by nature of this commitment exert more effort (e.g., work more intently) (Meyer et al., 1993). Based on the theoretical rationale stemming from social exchange, psychological contract and reciprocity theories, the hypothesized model included the following path:

Path 10: Organizational commitment will have a positive direct impact on effort.

Previous studies have shown substantial correlations ($r = .37 - .70$) between the job attitudes included in this study (e.g., Brooke et al., 1988; Brown, 1996; Keller, 1997; Mathieu & Farr, 1991; O’Driscoll & Randall, 1999; Randall et al., 1999). Specifically, Brooke et al. and Mathieu and Farr found that job involvement, job satisfaction and organizational commitment were significantly correlated with each other, although they contributed unique variance to outcome measures. Furthermore, previous studies have allowed variables that typically correlate together to correlate within the structural model (e.g., Barling, Zacharatos & Hepburn, 1999; Masterson, 2001). For this reason, three additional paths were included in the hypothesized model:

Path 11: Job involvement and job satisfaction will be positively related.
Path 12: Job involvement and affective organizational commitment will be positively related.

Path 13: Job satisfaction and affective organizational commitment will be positively related.

**Effort**

Effort is defined as level of time commitment and work intensity committed to achieving performance [Brown and Leigh (1996) used averages of these facets as indicators of an over-arching effort factor], and has been conceptualized as the process by which motivation is processed into achieved work (Brown & Leigh, 1996). In the hypothesized model, effort mediates the relationships between job attitudes and both job performance and OCBs. Several studies have supported these relationships between effort and job performance (e.g., Blau, 1993; Brown & Leigh, 1996; Gardner, Dunham, Cummings & Pierce, 1989). Netemeyer et al. (1997) found that job satisfaction positively affected OCBs, but did not include effort in their model. However, based on Brown and Leigh’s findings and the basic notion that higher effort will lead to more favorable employee behavior, the hypothesized model included the following paths:

Path 14: Effort will have a positive direct impact on in-role performance.

Path 15: Effort will have a positive direct impact on OCBs.

Finally, as with other measures included in this model, in-role performance and OCBs have been found to correlate with one another (e.g., Diefendorff et al., 2002; Randall et al., 1999). For this reason, a final path was included in the hypothesized model:

Path 16: In-role performance and OCBs will be positively related.
Note that Netemeyer et al. (1997) evaluated a combined measure of OCBs in their model. Additionally, a recent meta-analytic evaluation of the dimensionality of OCBs concluded that relationships between correlates of OCBs and an overall OCB dimension did not differ substantially from those between these correlates and five separate OCB factors (LePine, Erez & Johnson, 2002). Essentially, the researchers concluded that keeping OCBs separate for analysis did not result in differential conclusions from keeping OCBs as an overall construct and advocated using a single OCB dimension in research. However, some research has separated OCBs into 5 distinct dimensions: altruism, sportsmanship, courtesy, civic virtue, and conscientiousness (e.g., Diefendorff et al., 2002; Podsakoff, MacKenzie, Moorman & Fetter, 1990), or into 2 dimensions representing individual and organization-affected behaviors (e.g., Randall et al., 1999; Williams & Anderson, 1991). In the current context paths are hypothesized from effort to a combined measure of OCBs (similar to Netemeyer et al.’s approach, and consistent with conclusions from LePine et al.’s meta-analysis) and to in-role performance. Ultimately, however, measurement characteristics of the data will determine whether OCBs are best represented by an overall (averaged) OCB construct or separate latent variables in data analysis.

Alternative Models

The hypothesized model was tested against several alternative models. Comparing the proposed model to alternative models is important to eliminate the possibility that any other model might better fit the data (McCallum & Austin, 2000; Schumacker & Lomax, 1996).
• **Alternative Model 1:** The first alternative model (see Figure 4) contains all paths and variables from the first hypothesized model, with two additional paths leading from POS and POR directly to effort.

This alternative model was developed based on Brown and Leigh’s (1996) model, which contained links from the organizational perception variable (psychological climate) directly to effort. This link makes sense theoretically because, as Brown and Leigh argue, effort may be sensitive to perceptions of the organization directly as well as through job involvement, because it is essentially totally under the volition of the employee that effort is exerted. Similarly, POR may directly impact effort for this same reason.

• **Alternative Model 2:** In addition to the paths in the first hypothesized model, alternative model 2 (see Figure 5) contains paths directly from job satisfaction, job involvement and organizational commitment to in-role performance and OCBs.

The paths in alternative model 2 were proposed because although employee behaviors likely are affected by attitudes through effort, some degree of employee behavior may be explained by job attitudes directly, and not by the employee’s appraisal of the amount of effort exerted. Additionally, these paths were proposed because many studies have indicated direct links between job attitudes and employee behavior (e.g., Diefendorff et al., 2002; Mathieu & Farr, 1991; Mathieu & Zajac, 1990; Netemeyer et al., 1997; Shore & Wayne, 1993; Williams & Anderson, 1991).
Figure 4. Alternative model #1 of POS, POR, job attitudes, effort and employee behavior.
Figure 5. Alternative model #2 of POS, POR, job attitudes, effort and employee behavior.
METHOD

Participants

Participants in this study were full-time, working adults and their supervisors. This study surveyed 750 supervisor-subordinate dyads (i.e., 1500 potential respondents). Although no explicit sample size requirements exist for structural equation modeling (SEM), many researchers have provided general guidelines for appropriate minimum requirements. Specifically, Ding, Velicer and Harlow (1995) note that 100-150 participants are sufficient to conduct SEM. Based on the number of matched dyads with complete data in this study (n = 279), this yielded a sufficiently large sample for the use of structural equation modeling.

Employees returned 346 surveys (46.1% response rate), of which 342 were usable (several were not included in analysis for reasons discussed below). Supervisors returned 339 surveys (45.2% response rate), of which 335 were usable. A total of 685 out of the 1500 surveys were returned (overall response rate = 44.7%). Of these surveys, 316 pairs out of 750 possible dyads (42.13%) matched up as employee-supervisor dyads (of the others that were returned, either the employee or supervisor did not return the corresponding survey). These dyads had worked together for an average of 4.03 years (SD = 4.81). Dyads came from a variety of types of organizations including: Service Industry (23.2%), Government (22.9%), Human Services (16.6%), Manufacturing (13.4%), Financial (6.4%) and Transportation (2.5%).

Employees in the matched dyad sample had an average age of 39.37 years (SD = 10.16), had an average of 16.8 years work experience (SD = 10.33) and had been employed at their current organization an average of 8.08 years (SD = 7.91). Almost half
(46.5%) of the matched employees reported that a high school degree was their highest level of education; 32.9% had bachelor degrees, 7.6% had graduate degrees. Males comprised 32.3% of the matched employee sample. Twenty-one percent of the matched employees reported their organizational level as non-management, 33% first-line supervisor, 33.9% middle management and 11.4% upper management.

Supervisors in the paired dyad sample were an average of 44.57 years of age ($SD = 9.69$), had an average of 22.16 years work experience ($SD = 9.97$) and had an average tenure of 13.10 years with their current employer ($SD = 9.51$). Twenty-three percent of supervisors in the paired dyad sample reported a graduate degree as their highest level of education, 36.7% had bachelor’s degrees and 26.6% reported that high school was their highest level of education completed. Supervisors in the matched sample had an average of 24.74 subordinates ($SD = 92.62$, $Mdn = 8$). Most supervisors in this subgroup were male (55.4%). Twenty-three percent of matched dyad supervisors reported their level in the organization as first-line supervisor, 32.8% middle management and 43.7% upper management.

Measures

Employee Measures

Employees responded to items measuring each of the constructs below.

Employees responded to all items on a 5-point Likert-type scale (1 = strongly disagree to 5 = strongly agree). All employee measures are located in Appendix A.

Perceived Organizational Support (POS). Perceived organizational support is one’s belief that one’s organization values one’s contributions and cares for one’s welfare (Eisenberger et al., 1986). POS was measured using the 8-item Survey of Perceived
Organizational Support (SPOS) (Eisenberger et al., 1986). Sample items include “My organization cares about my opinions,” and “Help is available from my organization when I have a problem.”

**Perceived Opportunity for Reward (POR).** POR represents an employee’s perceptions of how available reward opportunities are, and of the fairness with which they are distributed in one’s organization. No measure of POR could be located in the existing literature, and therefore POR was measured by six items developed for this study. The six items developed for this study are based on the scale located that was most conceptually similar, Sims and Szilagyi’s (1975) Leader Reward Behavior Instrument (LRBI). The LRBI measured perceptions of reward and punitive behaviors engaged in by leaders as viewed by their subordinates. In the current study, the referent in the POR items was extracted to the organizational level rather than supervisory level (as it is in the LRBI), and a subset of the most relevant items (those measuring perceptions of reward behavior) was used. This was done because of this study’s focus on individuals’ perceptions toward their organizations, rather than those focused on any one individual (e.g., a supervisor). Sample items include “The reward procedures in my organization are fair,” and “I have plenty of opportunities to be rewarded for the work I do.”

**Overall Job Satisfaction.** Job satisfaction is defined as a positive state of emotion relating to one’s job (Seashore et al., 1983). Overall job satisfaction was measured using the 3-item Michigan Organizational Assessment Questionnaire Job Satisfaction Subscale (Cammann, Fichman, Henkins & Klesh, 1979). Sample items include “All in all I am satisfied with my job,” and “In general, I like working here.”
Job Involvement. Job involvement represents the extent to which someone identifies psychologically with one’s work (Brown, 1996). Job involvement was measured with Kanungo’s (1982) 10-item Job Involvement Questionnaire (JIQ). Kanungo’s scale originally used a 6-point Likert-type scale. However in this study, for consistency in the survey, a 5-point scale with the same anchors was used. This scale has been called “the clearest and most precise conceptualization of [job involvement]” (Brown, 1996, p. 236). Sample items for the JIQ include “The most important things that happen to me involve my job,” and “I live, eat, and breathe my job.”

Affective Organizational Commitment. Organizational commitment is defined as an affective attachment leading one to remain with one’s organization (Meyer et al., 1993). Organizational commitment was measured using Meyer et al.’s Affective Organizational Commitment Scale (AOCS). This 6-item scale measures commitment or desire to stay with an organization out of want, rather than need or pressure to conform (Meyer et al., 1993). Sample items include “I would be happy to spend the rest of my career with my organization,” and “I feel as if my organization’s problems are my own.”

Perceived Effort. Effort is defined as the means by which motivation is converted to work (Brown & Leigh, 1996). As conceptualized, effort consists of two dimensions, time commitment and work intensity. Effort was measured using a scale developed by Brown and Leigh (1996). Their scale is composed of the two factors mentioned above: time commitment and work intensity. The time commitment scale consists of five items assessing employee’s persistence and tendency to work extended hours. Work intensity consists of five items assessing tendency to work hard and expend energy while at work (Brown & Leigh, 1996). Sample items for the effort scale include “Other people know me
by the long hours I keep,” (time commitment) and “When there’s a job to be done, I devote all my energy to getting it done” (work intensity).

**Supervisor Measures**

Supervisors appraised employees’ in-role performance and OCBs. All responses were made on a 7-point Likert-type scale ranging from 1 = disagree very much to 7 = agree very much. Complete item listings for the supervisor survey are located in Appendix B.

**In-role Performance.** In-role performance is defined as the level of achievement at assigned job duties (Williams & Anderson, 1991). Williams and Anderson’s (1991) 7-item measure of in-role performance was used in this study. Sample items include “Adequately completes assigned duties”, and “Meets formal performance requirements of the job”.

**Organizational Citizenship Behaviors (OCBs).** OCBs are behaviors performed beyond the regular or expected scope of one’s job (Podsakoff et al., 1990). OCBs were measured with Podsakoff et al.’s (1990) Organizational Citizenship Behavior Questionnaire (OCBQ) consisting of the five factors identified by Organ (1988b): altruism (5 items), courtesy (5 items), civic virtue (4 items), sportsmanship (5 items) and conscientiousness (5 items). Sample items include “Helps others who have heavy workloads” (altruism), and “Tries to avoid creating problems for coworkers” (courtesy).

**Procedure**

Trained undergraduate students at a southeastern university solicited participants for inclusion in this study. These students were given extra credit for identifying qualified participants (i.e., full-time working adults) and distributing survey packets to them. The
survey packets in this study consisted of two parts – employee surveys and supervisor surveys. A letter describing the purpose of the study to participants, informing participants of their rights in accordance with Institutional Review Board requirements, and instructing participants on how to complete and return the survey accompanied each survey (see Appendix C for employee instructions and Appendix D for supervisor instructions).

Each employee was given a survey packet containing an instruction letter (see Appendix C), an employee survey packet (see Appendix E) and a supervisor survey packet (see Appendix F). Employees were instructed to give the supervisor survey to their immediate supervisors. Supervisors received their survey packet from a participating employee. Within this packet was an instruction letter (see Appendix D) and a supervisor survey (see Appendix F).

Participants were instructed to complete their survey and return it in its own postage-paid envelope. All surveys were coded so that employee - supervisor dyads could be matched once surveys were received. To ensure independence of data, supervisors were asked to respond only once to the survey (an item in the survey also asked employees and supervisors whether they had previously completed the survey; four employee and four supervisor surveys were eliminated which contained affirmative answers to this question). As an additional measure of assuring data quality, approximately 5% (n=30) of respondents were called to verify their responses. All respondents contacted verified their participation in this study. This student-distributed survey procedure is further elaborated upon in the discussion section.
RESULTS

Overview

Consistent with recommendations from Bollen (1989) and Schumacker and Lomax (1996), this study used a two-step approach in testing the proposed measurement and structural models. In this two-step approach, confirmatory factor analyses were first conducted to determine an appropriate measurement model. After identifying a satisfactory measurement model, item groupings (i.e., testlets) were loaded onto their respective latent constructs. Next, the relationships of these latent constructs were tested via structural equation modeling to determine the fit of the data to the hypothesized structural models. Consistent with this process, this section is organized into four main sections. The first section provides results of the confirmatory factor analyses (CFA). The second section discusses the final scales used in the study and presents their descriptive statistics. The third section describes the tests of the hypothesized structural models and alternative models. Finally, the last section of the results discusses exploratory analyses.

Before presenting the results, a discussion of the metrics used in the evaluation and comparison of model fit is relevant. Three different types of metrics frequently are used in evaluating structural equation models: chi-square statistics, fit indices and parameter estimates. Among these, only the chi-square statistic allows for traditional hypothesis testing to determine statistical significance. It is important to note that in model testing the null hypothesis states that the model fits the data well, contrary to many other significance tests (e.g., t-tests, F values) used in behavioral science research (MacCallum, Browne & Sugawara, 1996). One disadvantage of the chi-square statistic is that it is
inflated as models become more complex or as sample size increases (Garson, 2002b). Chi-square values therefore frequently do not provide an accurate assessment of the absolute fit of a model; they are, however, useful as a relative comparator. That is, chi-square difference tests allow researchers to evaluate significant differences in model fit between alternative models (i.e., whether one model fits the data significantly better than an alternative) based on the chi-square statistic (Schumacker & Lomax, 1996). Another limitation of chi-square comparisons is that only nested models can be compared using chi-square values (nested models are more-or-less restricted versions of latent variable relationships based upon a complete, common set of indicator variables) (Rindskopf & Rose, 1988).

Beyond the chi-square metric, several fit indices are available from structural equation modeling output, and many researchers have argued the merits of various combinations of these in interpreting model fit. Unfortunately, no consensus has been reached as to which set of fit indices or measurement metrics constitutes the best fit (Gerbing & Anderson, 1993; Tanaka, 1993; Vandenberg & Lance, 2000). However, Vandenberg and Lance (2000) recommended a set of modified guidelines based on Hu and Bentler’s (1999) recommendations for evaluating model fit. Hu and Bentler suggest that if CFI, SRMR and RMSEA fit indices reach acceptable levels of fit, the conclusion should be drawn that the model adequately fits the data. Consistent with these recommendations, but using conventional cutoff values recommended by Vandenberg and Lance, cutoff criteria considered for evaluation of fit in this study are: for CFI, .90 (equal to or greater than), for RMSEA, .08 (equal to or less than), and for SRMR, .10 (equal to or less than). Lastly, for overall assessment of fit, the Chi-square-to-degrees of freedom ratio
is considered (ratios under 3:1 typically are considered to represent reasonable fit; Carmines & McIver, 1981). In sum, several fit indices are reported and evaluated in the context of detailing the results from this study.

Parameter estimates provide added information beyond overall fit indices because they represent the strength of individual relationships between variables in a structural model, rather than only an assessment of the overall fit of the model (Fan & Wang, 1998). For this reason, parameter estimates are noted in discussing model fit. Additionally, parameter estimates are useful as sources of information because they may suggest other alternative models that may better fit the data (for example, a model with paths that have nonsignificant parameter estimates may better fit the data when the path(s) is removed) (Jöreskog & Sörbom, 1993).

**Measurement Model**

The measurement and structural models in this study were evaluated using LISREL 8.51 (Jöreskog & Sörbom, 2001). Models were tested using covariance matrices obtained via PRELIS (the data preparation component of LISREL), and all analyses used maximum likelihood estimation (ML). The confirmatory factor analysis was completed for all matched dyad cases (n = 279 after listwise deletion for missing responses). In the present study, testlets, or item parcels, were formed randomly within each scale to increase stability of parameter estimates. This approach has become conventional as a method to maximize parameter estimate stability (e.g., Chen, Gully, Whiteman & Kilchullen, 2000; Williams & Anderson, 1994). The use of testlets (rather than having each item serve as an indicator for the latent construct) serves to minimize the number of parameters in the model, resulting in increased indicator reliabilities, more stable
parameter estimates, and as a result, more solid construct measurement (Mavondo & Farrell, 2000; Russell, Kahn, Spoth & Altmaier, 1998; Takahashi & Nasser, 1996). Consistent with this methodology, testlets of two to four items were assembled for all scales (scales were composed of one to three testlets, depending on number of observed variables). For example, the POS scale was broken into two testlets of four items each, one consisting of items POS1, POS2, POS3 & POS8, and the other consisting of items POS4, POS5, POS6 & POS7 (see Appendix G for a complete listing of item-testlet relationships). Each of these testlets then served as indicators to the POS latent variable. Consistent with recommendations from recent literature (Schumacker & Lomax, 1996), factor loading parameters of one indicator (that with the highest loading) from each scale were set to 1.0. Applying this constraint allowed LISREL to report loadings on a consistent relative scale for each latent factor. A singular exception to this rule (setting highest factor loading to 1.0) involved the job satisfaction scale used in this study, which contained only three items and therefore could not readily be broken into testlets. Instead this scale was formed into a singular testlet that loaded as an indicator to the latent variable of job satisfaction. Consistent with recent research, the factor loading of this testlet onto the latent variable was set equal to the square root of its reliability coefficient, and the error variance of the parameter was set equal to 1 minus the reliability of the scale, multiplied by the variance (Chen et al., 2000).

The hypothesized measurement model contained eight latent factors: perceived organizational support (POS), perceived opportunity for reward (POR), job involvement, job satisfaction, affective organizational commitment, effort, in-role performance and OCBs. CFA results for the hypothesized measurement model indicated that this model
did not fit the data well (RMSEA = .091; CFI = .84; SRMR = .08; $\chi^2$/df = 3.30:1). Fit indices for this hypothesized measurement model are presented in Table 1.

Several other alternative measurement models were tested to identify an appropriately fitting, theoretically sound alternative model. For instance, one measurement model was tested wherein POS and POR (the two constructs dealing with organizational perceptions) were collapsed into one factor, keeping all other characteristics of the hypothesized model. This model was tested to evaluate whether POS and POR were more appropriately considered as distinct factors or as a more general organizational perception factor. This model did not meet the requirements for good fit (RMSEA = .100; CFI = .81; SRMR = .08; $\chi^2$/df = 3.77:1) and fit significantly worse than the hypothesized model ($\Delta\chi^2 (7) = 148.30, p < .001$).

A second alternative model was tested with all job attitudes (job satisfaction, job involvement and affective organizational commitment) collapsed into an overall job attitude (again keeping all other characteristics of the hypothesized model). This model also was included to evaluate whether individual job attitudes or a general attitude factor more appropriately fit the data. This model did not satisfy all of the criteria for good fit (RMSEA = .116; CFI = .81; SRMR = .09; $\chi^2$/df = 4.75:1); it also fit the data significantly worse than the hypothesized model ($\Delta\chi^2 (12) = 445.75, p < .001$).

A third alternative measurement model was tested that separated effort into two latent variables according to the two factors of effort measured, time commitment and work intensity. This step was taken to evaluate whether a two-factor conceptualization of effort was more appropriate than a single factor, because while Brown and Leigh (1996) averaged the two dimensions together in their study, they found that the two components
were distinct. This Two Effort model, retaining all other characteristics from the hypothesized model, but separating effort into two latent variables, fit the data reasonably well (RMSEA = .077; CFI = .89; SRMR = .06; $\chi^2/df = 2.66:1$). It also fit the data significantly better than the hypothesized model ($\Delta \chi^2 (8) = 200.85, p < .001$).

Table 1

GOF Measures for CFA/Measurement Model

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>$\chi^2/df$</th>
<th>p</th>
<th>RMSEA</th>
<th>CFI</th>
<th>SRMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyp. Model</td>
<td>903.72</td>
<td>272</td>
<td>3.32:1</td>
<td>.00</td>
<td>.091</td>
<td>.84</td>
<td>.08</td>
</tr>
<tr>
<td>1 Org. Percep.</td>
<td>1052.02</td>
<td>279</td>
<td>3.77:1</td>
<td>.00</td>
<td>.100</td>
<td>.81</td>
<td>.08</td>
</tr>
<tr>
<td>1 Attitude</td>
<td>1349.47</td>
<td>284</td>
<td>4.75:1</td>
<td>.00</td>
<td>.116</td>
<td>.76</td>
<td>.09</td>
</tr>
<tr>
<td>2 Effort Model</td>
<td>702.87</td>
<td>264</td>
<td>2.66:1</td>
<td>.00</td>
<td>.077</td>
<td>.89</td>
<td>.06</td>
</tr>
<tr>
<td>2 Effort,5 OCB Model</td>
<td>301.71</td>
<td>222</td>
<td>1.36:1</td>
<td>.00</td>
<td>.036</td>
<td>.98</td>
<td>.04</td>
</tr>
<tr>
<td>2 Effort,2 OCB Model</td>
<td>603.54</td>
<td>255</td>
<td>2.37:1</td>
<td>.00</td>
<td>.070</td>
<td>.91</td>
<td>.06</td>
</tr>
<tr>
<td>1 Factor</td>
<td>4989.46</td>
<td>299</td>
<td>16.69:1</td>
<td>.00</td>
<td>.238</td>
<td>.32</td>
<td>.19</td>
</tr>
<tr>
<td>OCB 5 Factor*</td>
<td>37.42</td>
<td>25</td>
<td>1.50:1</td>
<td>.05</td>
<td>.039</td>
<td>.99</td>
<td>.02</td>
</tr>
<tr>
<td>OCB Higher-Order*</td>
<td>50.90</td>
<td>30</td>
<td>1.70:1</td>
<td>.01</td>
<td>.047</td>
<td>.98</td>
<td>.03</td>
</tr>
<tr>
<td>Final Meas. Model</td>
<td>280.24</td>
<td>154</td>
<td>1.82:1</td>
<td>.00</td>
<td>.054</td>
<td>.96</td>
<td>.05</td>
</tr>
</tbody>
</table>

Note. The hypothesized measurement model contains 1 Effort and 1 OCB factor. The 1 Org. Percep. model collapsed POS and POR into a single factor. The 1 Attitude model collapsed JJ, JS & AOC into a single attitude factor. The 2 Effort model broke effort into separate factors of Time Commitment and Work Intensity. The 5 OCB model separated OCBs into the five scale factors. The 2 OCB model separated OCBs into individual & organizational components. The 1 Factor model represents method bias. * Indicates the two models of OCB scales evaluated for higher-order factor analysis. The OCB 5 Factor model contained only OCB scale indicators loading onto their respective factors, and the OCB Higher-Order model contained these paths with a higher-order OCB factor. The Final Measurement Model contained OCB averaged scales as indicators onto a higher-order OCB.

Researchers have frequently disagreed about whether the OCB scales (altruism, conscientiousness, courtesy, civic virtue and sportsmanship) should be evaluated as a single OCB factor (such as in the hypothesized measurement model), or whether these five scales load on multiple OCB factors (LePine et al., 2002). Although Netemeyer et al. (1997) formed an overall OCB dimension from several OCB factors in their study, other researchers have conceptualized OCBs differently. Some researchers (Randall et al., 1999; Williams & Anderson, 1991) have grouped OCB constructs into two factors, those
benefiting individuals (altruism and courtesy) and those benefiting the organization (sportsmanship, conscientiousness and civic virtue). Others have shown that OCBs are best conceptualized as five factors representing each of the scales mentioned above (e.g., Diefendorff et al., 2002; Podsakoff et al., 1990). For this reason, alternate conceptualizations of OCBs were evaluated to identify the most appropriate factor structure for structural analysis.

One model was tested wherein OCBs were separated into the five underlying factors that composed the general OCB variable: altruism, courtesy, sportsmanship, civic virtue and conscientiousness (this model is referred to as the 2-effort, 5-OCB model, because it maintained all other characteristics of the previous best-fitting Two Effort measurement model). This model fit the data well (RMSEA = .036; CFI = .98; SRMR = .04; $\chi^2/df = 1.36:1$) and fit significantly better than the Two Effort model ($\Delta \chi^2 (42) = 401.16, p < .001$). Another model was tested that categorized the OCB dimensions into two factors, organizational and individual, as mentioned above. This model fit the data well, (RMSEA = .070; CFI = .91; SRMR = .06; $\chi^2/df = 2.37:1$), but fit significantly worse than the 2-effort, 5-OCB alternative ($\Delta \chi^2 (33) = 301.83, p < .001$).

A one-factor model was also tested to evaluate the possibility that all items were loading on an overarching construct due to mono-method bias. This possibility exists because all measures were collected via a common survey, and respondents could conceivably possess an overarching positive or negative attitude in filling out the survey. This “method factor” model did not fit the data well (RMSEA = .238; CFI = .32; SRMR = .19; $\chi^2/df = 16.69:1$), and its fit was significantly worse than that of the 2-effort, 5-OCB
model ($\Delta \chi^2 (77) = 4687.75, p < .001$). Results from all tested measurement models are presented in Table 1.

**Additional Measurement Model Analyses**

Frequently, conceptually-related latent variables can be factorially distinct, yet be summarized by a smaller number of latent factors (Rindskopf & Rose, 1988). As an additional evaluative step, a higher-order factor analysis was conducted on the set of OCB items to assess whether the five OCB latent variables loaded onto a single higher-order OCB factor. Higher-order CFAs have been advocated in recent literature as an appropriate technique to determine whether higher-order factor structures fit the data well (Rindskopf & Rose, 1988). Fit statistics for both models (OCBs categorized as five separate dimensions or as five dimensions with an overarching OCB dimension) were good according to the established fit criteria (with five factors: RMSEA = .039, CFI = .99, SRMR = .02, $\chi^2/df = 1.50:1$; with higher-order OCB factor: RMSEA = .047, CFI = .98, SRMR = .03, $\chi^2/df = 1.70:1$).

Note that this higher-order analysis technique was not viable for the effort construct because of identification issues in LISREL. Specifically, a higher-order factor structure could not be tested for effort because there was an insufficient number of variables (i.e., two – time commitment and work intensity) loading onto what would be a higher-order effort construct. Such a higher-order factor structure with two indicators would be underidentified; that is, fewer known than unknown data points would be present in the model, preventing comparison between the two-factor and the higher-order factor structures (Bollen, 1989; Frone, 1997; Rindskopf & Rose, 1988).
Overall, both the five-factor structure for OCBs and the higher-order factor structure fit the data well. However, because the higher-order factor analysis of the OCB measures fit the data well, because all five OCB factors were significantly correlated with each other, and in the interest of model parsimony, all OCB factors were allowed to load onto a higher-order OCB dimension. Additionally, because previous research has advocated looking at OCBs as a single dimension (see LePine et al., 2002; Netemeyer et al., 1997), this approach facilitated comparison between the present study and past research. Accordingly, consistent with a technique used by Judge, Locke, Durham and Kluger (1998), each OCB scale (e.g., altruism, conscientiousness) was averaged, and the average of each scale then served as an indicator of an OCB dimension. This technique allows for the inclusion of a pseudo-higher-order arrangement of constructs within the measurement and structural models. A measurement model including this higher-order arrangement of the OCB variables, along with POS, POR, job satisfaction, job involvement, affective organizational commitment, time commitment, work intensity and in-role performance fit the data well (RMSEA = .054, CFI = .96, SRMR = .05, $\chi^2$/df = 1.82:1). Therefore, this measurement model was retained for use in structural analysis.

**Descriptive Statistics**

Table 2 presents scale means and standard deviations, along with correlations among all scales for the matched dyad sample. All scales exhibited acceptable reliabilities as used in the final measurement model; coefficient alphas ranged from $\alpha = .75$ to .90. Scale reliabilities and means were consistent with those from past studies (Brown & Leigh, 1996; Eisenberger, Cummings, Armeli & Lynch, 1997; Jex & Gudanowski, 1992; Kanungo, 1982; Meyer et al., 1993; O’Driscoll & Randall, 1999; Podsakoff et al., 1990;
Table 2

Descriptive Statistics and Correlations Among Scales

| Scale | Mean | SD  | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  | 21  |
|-------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| POS   | 3.73 | .73 | .90 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| POR   | 3.11 | .84 | .53 | .83 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| JI    | 2.84 | .70 | .28 | .34 | .86 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| AOC   | 3.55 | .73 | .63 | .49 | .51 | .81 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| JS    | 4.16 | .64 | .56 | .42 | .30 | .59 | .84 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| EFFORT| 3.48 | .54 | .18 | .13 | .40 | .34 | .29 | .82 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| WI    | 4.10 | .71 | .73 | .33 | .38 | .66 | .88 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| TC    | 2.87 | .83 | .09 | .11 | .36 | .22 | .11 | .86 | .17 | .86 |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| SUP WI| 6.11 | .95 | .14 | .07 | .12 | .16 | .21 | .19 | .20 | .11 | .94 |    |    |    |    |    |    |    |    |    |    |    |    |    |
| SUP TC| 4.44 | 1.48 | .03 | -.02 | .10 | .09 | .07 | .37 | .14 | .40 | .44 | .91 |    |    |    |    |    |    |    |    |    |    |    |    |
| OCBs  | 5.86 | .76 | .19 | .05 | .08 | .19 | .20 | .08 | .07 | .71 | .42 | .91 |    |    |    |    |    |    |    |    |    |    |    |    |
| ALT   | 6.08 | .83 | .09 | -.00 | .05 | .13 | .12 | .10 | -.02 | .14 | .38 | .39 | .80 | .83 |    |    |    |    |    |    |    |    |    |    |
| COURT | 5.82 | .98 | .17 | .00 | .06 | .07 | .10 | .00 | .02 | -.02 | .52 | .26 | .81 | .64 | .77 |    |    |    |    |    |    |    |    |    |    |
| SPORT | 5.66 | .28 | .10 | .10 | -.03 | .11 | .17 | .02 | -.01 | -.01 | .41 | .72 | .76 | .48 | .81 | .82 |    |    |    |    |    |    |    |    |    |
| CIVIC | 5.60 | .99 | .17 | .01 | .13 | .17 | .11 | .09 | .06 | .07 | .54 | .42 | .69 | .80 | .42 | .29 | .75 |    |    |    |    |    |    |    |    |
| CONSC | 6.15 | .89 | .22 | .07 | .13 | .28 | .25 | .22 | .10 | .75 | .41 | .53 | .53 | .57 | .47 | .49 | .79 |    |    |    |    |    |    |    |    |
| PERF  | 6.31 | .69 | .01 | -.03 | .05 | .09 | .11 | .03 | .02 | .02 | .71 | .33 | .52 | .52 | .51 | .56 | .42 | .64 | .80 |    |    |    |    |
| Age   | 39.37 | 10.16 | -.04 | -.09 | .03 | .11 | .11 | .02 | .08 | -.03 | .13 | .01 | .08 | .06 | .07 | -.01 | .07 | .19 | .12 | -- |    |    |    |
| Work Exp. | 16.80 | 10.33 | -.04 | -.07 | .05 | .13 | .11 | .03 | .02 | .03 | .07 | .01 | -.01 | -.01 | -.01 | -.09 | .02 | .10 | .07 | .86 | -- |    |    |
| Tenure | 8.08 | 7.91 | -.05 | -.14 | .10 | .11 | -.05 | -.05 | .11 | .01 | .05 | .06 | -.01 | -.02 | -.01 | -.03 | -.00 | .09 | .12 | .52 | .48 | -- |    |
| Yrs. Sup. | 4.03 | 4.81 | -.18 | -.18 | .10 | .20 | .07 | .04 | .05 | .03 | .15 | .02 | .05 | .06 | .03 | -.03 | .07 | .12 | .05 | .31 | .32 | .50 | -- |

Note. \( n = 279 \). Correlations significant at \( p < .05 \) are underlined. Coefficient alpha reliabilities are reported on the diagonal for all scales. Pairwise deletion was used for correlational analyses. POS = Perceived Organizational Support; POR = Perceived Opportunity for Reward; JI = Job Involvement; AOC = Affective Organizational Commitment; JS = Job Satisfaction; EFFORT = Effort (average of TC & WI); WI = Work Intensity; TC = Time Commitment; SUP WI = Supervisor-measured Work Intensity; SUP TC = Supervisor-measured Time Commitment; OCBs = OCBs (average of all factors); ALT = Altruism; COURT = Courtesy; SPORT = Sportsmanship; CIVIC = Civic Virtue; CONSC = Conscientiousness; PERF = In-role Performance; Age = Employee age; Work Exp. = Employees’ years work experience; Tenure = Employee tenure at current organization; Yrs. Sup. = Number of years employee has worked for current supervisor (Years Supervised).
For example, the reliability for POS was identical to that found with the same scale by Eisenberger et al. (1997)—in both studies the reliability was $\alpha = .90$. Likewise, means for the OCB measures in the present study were comparable to those from Podsakoff et al. (1990) (e.g., 5.82 for courtesy in the current study, versus 5.63 in Podsakoff et al., and 5.60 for civic virtue in the current study, versus 5.51 in Podsakoff et al.). Lastly, in the current study Mardia’s (1970) statistic, $PK = 1.128$, indicated that the assumption of multivariate normality was met. Researchers (Mardia, 1970; Romeu & Ozturk, 1993) have indicated that $PK$ values less than 3 are indicative of multivariate normality.

**Full Structural Model**

**Hypothesized Model**

The hypothesized structural model of employee attitudes and behavior contained paths from POS and POR to job satisfaction, job involvement and affective organizational commitment; from these three job attitudes to work intensity and time commitment; in turn these were related to OCBs and in-role performance (see Figure 6). As discussed earlier, POS and POR, the three job attitudes, work intensity and time commitment and in-role performance and OCBs, respectively, were allowed to correlate. This model fit the data well according to the fit indices discussed above ($RMSEA = .057$; $CFI = .95$; $SRMR = .06$, $\chi^2/df = 1.92:1$). Table 3 contains all fit statistics for this model and the other evaluated structural models which are discussed below.

**Alternative Model 1**

As discussed earlier, one standard approach employed in structural equation modeling is to test several alternative models in addition to the hypothesized model.
Note – Significant paths (p < .05) indicated by underline.

Figure 6. Hypothesized structural model of POS, POR, job attitudes, effort and employee behavior with parameter estimates.
Table 3

Fit Statistics of Measurement and Full Structural Models

<table>
<thead>
<tr>
<th>Model</th>
<th>$\chi^2$</th>
<th>df</th>
<th>$\chi^2$/df</th>
<th>p</th>
<th>RMSEA</th>
<th>CFI</th>
<th>SRMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meas. Model</td>
<td>280.24</td>
<td>154</td>
<td>1.82:1</td>
<td>.00</td>
<td>.054</td>
<td>.96</td>
<td>.05</td>
</tr>
<tr>
<td>Hyp. Model</td>
<td>321.88</td>
<td>168</td>
<td>1.92:1</td>
<td>.00</td>
<td>.057</td>
<td>.95</td>
<td>.06</td>
</tr>
<tr>
<td>Alt. Model 1</td>
<td>312.81</td>
<td>164</td>
<td>1.91:1</td>
<td>.00</td>
<td>.057</td>
<td>.95</td>
<td>.06</td>
</tr>
<tr>
<td>Alt. Model 2</td>
<td>310.03</td>
<td>162</td>
<td>1.92:1</td>
<td>.00</td>
<td>.057</td>
<td>.95</td>
<td>.05</td>
</tr>
<tr>
<td>Brown &amp; Leigh*</td>
<td>51.13</td>
<td>40</td>
<td>1.28:1</td>
<td>.08</td>
<td>.034</td>
<td>.99</td>
<td>.03</td>
</tr>
<tr>
<td>Netemeyer et al.*</td>
<td>98.35</td>
<td>48</td>
<td>2.05:1</td>
<td>.00</td>
<td>.060</td>
<td>.97</td>
<td>.05</td>
</tr>
<tr>
<td>5-OCB Alt. Model</td>
<td>379.03</td>
<td>256</td>
<td>1.48:1</td>
<td>.00</td>
<td>.042</td>
<td>.97</td>
<td>.06</td>
</tr>
<tr>
<td>1-Effort Alt. Model</td>
<td>519.20</td>
<td>174</td>
<td>2.98:1</td>
<td>.00</td>
<td>.084</td>
<td>.88</td>
<td>.09</td>
</tr>
<tr>
<td>Sup. Effort Alt. Model</td>
<td>357.41</td>
<td>168</td>
<td>2.13:1</td>
<td>.00</td>
<td>.064</td>
<td>.94</td>
<td>.05</td>
</tr>
</tbody>
</table>

Note. * Indicates models which were conceptually similar, not identical representations of previous data models.

The first alternative structural model tested in this study (referred to as Alternative Model 1) retained all parameters from the hypothesized model and added paths from POS and POR to the two effort constructs (time commitment and work intensity). This model (see Figure 7) fit the data well (RMSEA = .057; CFI = .95; SRMR = .06, $\chi^2$/df = 1.91:1). However, this model did not fit the data significantly better than the more parsimonious hypothesized structural model ($\Delta\chi^2$ (4) = 9.07, p = .059).

**Alternative Model 2**

Another alternative model (Alternative Model 2) retained all of the paths from the original hypothesized model and added parameters linking job satisfaction, job involvement and organizational commitment directly to in-role performance and OCBs (see Figure 8). This model fit the data well, satisfying all of the established criteria for good fit (RMSEA = .057, CFI = .95, SRMR = .05; $\chi^2$/df = 1.92:1). However, this alternative also did not significantly improve fit over that of the hypothesized structural model ($\Delta\chi^2$ (6) = 11.85, p = .065).
Note – Significant paths (p < .05) indicated by underline.

Figure 7. Alternative model #1 of POS, POR, job attitudes, effort and employee behavior with parameter estimates.
Note – Significant paths (p < .05) indicated by underline.

Figure 8. Alternative model #2 of POS, POR, job attitudes, effort and employee behavior with parameter estimates.
Summary of A Priori Models

Overall, out of the a priori developed models, the hypothesized model (see Figure 6) best fit the data. As mentioned earlier, although this model fit the data well based on evaluation of several fit indices, it is also worthwhile to examine parameter estimates for all paths in the model to assess fit. Examination of parameter estimates in combination with overall fit indices indicated that the model fit the data well overall, though not all parameters in the model were significant. Parameter estimates indicated that POS and POR were positively related to job involvement, job satisfaction and affective organizational commitment. Together, POS and POR explained 16% of the variance in job involvement, 54% of the variance in affective organizational commitment, and 45% of the variance in job satisfaction. In turn, job involvement was positively related to time commitment and job satisfaction was positively related to work intensity. Affective organizational commitment was not significantly related to either effort construct. Collectively POS, POR and the job attitudes explained 19% of the variance in both time commitment and work intensity. With regard to outcome (employee behavior) variables, none of the paths to OCBs or in-role performance were significant. This finding was consistent with the lack of relationships present between model variables and employee behavior in bivariate correlations reported in the descriptive statistics section. Less than 1% of the variance in employee behavior criteria was explained by the other variables in the model.

Additional Analyses

Several differences in parameter estimates were noted in the hypothesized model (which was the best fitting a priori model) that warranted further exploration.
Specifically, parameters were evaluated to examine whether POS or POR had stronger impacts on some job attitudes than on others. These parameters were evaluated by first constraining the parameters of interest in the hypothesized model equal to one another. Next, this constrained model was estimated using structural equation modeling, and chi-square difference tests were conducted between the constrained version of the hypothesized model and the freely estimated hypothesized model to see if fit became dramatically worse when constraints were applied. A significant chi-square difference test would indicate that the two parameters were significantly different, because the constrained model (where the parameters were forced to equal one another) fit worse than a model in which they were allowed to freely estimate. All possible comparisons were made between paths from POS and POR to job satisfaction, job involvement, and affective organizational commitment (see Table 4). Chi-square difference tests indicated that POS had a significantly stronger impact on affective organizational commitment than did POR. Additionally, POS impacted job satisfaction and affective organizational commitment significantly more than it did job involvement. POR did not impact any single job attitude significantly more than it did another.

Several other additional analyses were conducted. In addition to the nested evaluation of models described above, several theory-based non-nested models were considered. Although these alternatives cannot be compared via traditional significance testing (i.e., the Δ chi-square statistic) because they are not more restricted versions of the measurement model (as were the above hypothesized and alternative models), comparisons of other fit indices are still relevant. Logically, the non-nested models can still be said to fit the data well if they fit within the earlier established criteria for CFI,
### Table 4

**Chi-Square Statistics of Hypothesized Model and Constrained Comparison Models**

<table>
<thead>
<tr>
<th>Constrained Paths</th>
<th>$\chi^2$</th>
<th>df</th>
<th>$\chi^2$ diff from hyp model</th>
<th>Significant?</th>
</tr>
</thead>
<tbody>
<tr>
<td>None (Hyp. Model)</td>
<td>321.88</td>
<td>168</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>POS $\rightarrow$ JS = POR $\rightarrow$ JS</td>
<td>323.82</td>
<td>169</td>
<td>1.94</td>
<td>ns</td>
</tr>
<tr>
<td>POR $\rightarrow$ JI = POS $\rightarrow$ JI</td>
<td>321.75</td>
<td>169</td>
<td>-0.13</td>
<td>ns</td>
</tr>
<tr>
<td>POS $\rightarrow$ AOC = POR $\rightarrow$ AOC</td>
<td>331.40</td>
<td>169</td>
<td>9.52 (p &lt; .01)</td>
<td></td>
</tr>
<tr>
<td>POS $\rightarrow$ JS = POS $\rightarrow$ JI</td>
<td>326.65</td>
<td>169</td>
<td>4.77 (p &lt; .05)</td>
<td></td>
</tr>
<tr>
<td>POS $\rightarrow$ AOC = POS $\rightarrow$ JS</td>
<td>324.95</td>
<td>169</td>
<td>3.07</td>
<td>ns</td>
</tr>
<tr>
<td>POS $\rightarrow$ AOC = POS $\rightarrow$ JI</td>
<td>344.80</td>
<td>169</td>
<td>22.92 (p &lt; .001)</td>
<td></td>
</tr>
<tr>
<td>POR $\rightarrow$ JI = POR $\rightarrow$ JS</td>
<td>321.43</td>
<td>169</td>
<td>-0.45</td>
<td>ns</td>
</tr>
<tr>
<td>POR $\rightarrow$ JS = POR $\rightarrow$ AOC</td>
<td>321.91</td>
<td>169</td>
<td>0.03</td>
<td>ns</td>
</tr>
<tr>
<td>POR $\rightarrow$ JI = POR $\rightarrow$ AOC</td>
<td>321.88</td>
<td>169</td>
<td>0.00</td>
<td>ns</td>
</tr>
</tbody>
</table>

*Note.* POS = Perceived Organizational Support; POR = Perceived Opportunity for Reward; JS = Job Satisfaction; JI = Job Involvement; AOC = Affective Organizational Commitment. All parameters are listed within pairs as larger $\rightarrow$ smaller according to standardized values, such that for all significantly different comparisons, the first parameter is significantly larger than the second for that comparison.

SRMR, RMSEA and $\chi^2$/df, or to fit poorly if they do not. Conceptually similar models of Brown and Leigh’s (1996) model (see Figure 9) and Netemeyer et al.’s (1997) model (see Figure 10) were tested to examine their fit to the data.

**Brown and Leigh’s Model**

The conceptually similar version of Brown and Leigh’s (1996) model contained links from POS (similar to psychological climate) to job involvement, time commitment and work intensity. Paths also existed between job involvement and work intensity and time commitment, and between work intensity and time commitment and in-role performance. Work intensity and time commitment were allowed to correlate. Consistent with Brown and Leigh’s study, significant, positive parameters were found from POS to job involvement. Additionally, a parameter between work intensity and time...
Figure 9. Conceptually similar structural model of Brown and Leigh’s (1996) model with parameter estimates.

Note – Significant paths (p < .05) indicated by underline.
Note – Significant paths (p < .05) indicated by underline.

**Figure 10.** Conceptually similar structural model of Netemeyer et al.’s (1997) model with parameter estimates.
commitment was positive and significant; Brown and Leigh found that these dimensions were correlated, and collapsed the two into a general effort factor. Unlike Brown and Leigh’s study, parameters from effort (work intensity and time commitment) to in-role performance were not significant. This model fit the data well (RMSEA = .034, CFI = .99, SRMR = .03, χ²/df = 1.28:1). As such, these results support some key findings from Brown and Leigh’s study and extend this work by reproducing the findings in a different sample, composed of employees from much more diverse backgrounds (Brown and Leigh’s study included only salespeople, whereas the participants in this study came from a number of occupational groups.). However, not all of Brown and Leigh’s findings were supported in the present study.

Netemeyer et al.’s Model

The conceptually similar version of Netemeyer et al.’s (1997) model contained paths from POS (similar to leadership support), POR (similar to fairness in reward allocation) and affective organizational commitment (similar to person-organization fit) to job satisfaction, and from job satisfaction to OCBs. POS, POR, and affective organizational commitment were allowed to correlate. This model fit the data well (RMSEA = .060, CFI = .97, SRMR = .05, χ²/df = 2.05:1). Results from the current study supported findings from Netemeyer et al., which showed perceptions of support and close ties to the organization impact job satisfaction, and in turn satisfaction impacts OCBs. Netemeyer et al.’s finding that reward perceptions impact job satisfaction was not supported in the current study. Overall, results from the evaluation of this model support several key findings from Netemeyer et al.’s study and extend this research by supporting the findings in a much more diverse sample [like Brown and Leigh (1996), Netemeyer et
al.’s samples consisted of salespeople]. Additionally the current study extended previous research because OCBs were measured with supervisor ratings in the present context, whereas Netemeyer et al.’s study used self-ratings of OCBs. Supervisor ratings of OCBs should provide a more independent representation of OCBs than self-ratings.

Results from these non-nested models suggest that both fit the data well. However, it is important to note that these models included constructs representing key aspects of the original models, and were not identical reproductions of these models. Additionally, each of these models represents less comprehensive sets of latent variables than were included in the hypothesized model. As such, the hypothesized structural model containing relationships from POS and POR to job attitudes, from job attitudes to effort, and from effort to OCBs and in-role performance was overall the most complete, best-fitting model identified in this study. Detailed fit statistics for all alternative models, along with those from the hypothesized models, are provided in Table 3.

Alternate Conceptualizations of the Hypothesized Model

In addition to the models tested above which contained key components of models from previous research, several other models were evaluated based on the best-fitting model in the current study (the hypothesized structural model). For instance, although a higher-order factor structure was determined to be most appropriate for evaluation of structural models, a 5-factor structure also fit the data well. A model incorporating this structure is discussed next.

5-OCB Alternate of Hypothesized Structural Model. Because a 5-factor structure of OCBs also fit the data well, an alternate model was evaluated with a 5-factor structure of OCBs in place of the higher-order factor structure. This model (see Figure 11),
Note – Significant paths ($p < .05$) indicated by underline. Paths for OCBs are vertically reported in the following order: Altruism, Courtesy, Sportsmanship, Civic Virtue, Conscientiousness. Covariance paths are reported between In-role performance and OCBs in the same order—all covariances within OCBs were significant, but were omitted from diagram for clarity.

Figure 11. 5-OCB alternate of hypothesized structural model of POS, POR, job attitudes, effort and employee behavior.
retaining all other paths from the best-fitting hypothesized model, fit the data well (RMSEA = .042, CFI = .97, SRMR = .06, $\chi^2$/df = 1.48:1). Most parameter estimates in this model were consistent with those in the best-fitting hypothesized model reported above. A few differences to note were that in this model, with the OCB construct separated out into latent variables according to the five factors that make up OCBs, time commitment was positively related to altruism, and work intensity was positively related to conscientiousness. However, even with these significant paths, the effort constructs explained on average less than two percent of the variance in the employee behavior variables, indicating that this structure did not markedly change the nature of relationships among the variables in the model. No other parameters between effort constructs and employee behavior variables were significant.

1-Effort Alternate of Hypothesized Structural Model. Similar to the above circumstance involving OCBs, previous research had used a single effort factor (Brown & Leigh, 1996), although a model with two effort constructs was identified as the best fit to the data in the current study. For this reason, a model was evaluated that collapsed time commitment and work intensity into a single effort variable (see Figure 12) and retained all other characteristics of the best-fitting hypothesized model (including the higher-order OCB structure). This model did not fit the data well according to all established fit indices (RMSEA = .084, CFI = .88, SRMR = .09, $\chi^2$/df = 2.98:1). Parameter estimates were fairly consistent with the original hypothesized model, although only job satisfaction was positively related to the collapsed effort variable. As in the hypothesized model, effort was not positively related to either of the employee behavior variables.
Note – Significant paths (p < .05) indicated by underline.

Figure 12. 1-effort alternate of hypothesized structural model of POS, POR, job attitudes, effort and employee behavior.
Alternate of Hypothesized Structural Model Using Supervisor Effort. Lastly, employee effort was also measured from supervisors’ perspectives through the survey. This measure was identical to the measure that employees responded to, except that where the employee items’ referent was “I”, the supervisors’ referent was “this employee”. In other words, supervisors were asked to make assessments of the level of effort that employees put forth in the same way that employees were asked to rate themselves on these dimensions. In an additional alternative model, this measure was tested among the hypothesized model’s relationships in place of the employee effort dimensions (time commitment and work intensity). Specifically, this model substituted the two factors of employee-rated effort (i.e., time commitment and work intensity) with supervisor ratings of these constructs, but retained all other paths from the best-fitting hypothesized model (see Figure 13). This model fit the data well (RMSEA = .064, CFI = .94, SRMR = .05, $\chi^2$/df = 2.13:1). Most paths were consistent with those from the best-fitting hypothesized model, except that the paths from POS to job involvement and from job involvement to time commitment no longer were significant. Unlike the best-fitting hypothesized model, work intensity (as measured from supervisor ratings) was significantly related to both OCBs and in-role performance. Time commitment was not related to either employee behavior variable. The model explained 8% of the variance in OCBs and 6% of the variance in in-role performance.

Summary

The hypothesized structural model fit the data better than all a priori developed models. The hypothesized model contained paths from POS and POR to job satisfaction, job involvement and affective organizational commitment, and from these
Note – Significant paths (p < .05) indicated by underline. Time Commitment and Work Intensity were measured using supervisor ratings (rather than employee ratings) in the above model.

**Figure 13.** Alternate of hypothesized structural model of POS, POR, job attitudes, effort and employee behavior using supervisor ratings of effort.
job attitudes to time commitment and work intensity. Paths also existed between the two effort constructs (time commitment and work intensity) and employee behavior measures (in-role performance and OCBs). Additionally, POS and POR were correlated, as were all three job attitudes, the two effort constructs and the employee behavior measures, respectively. This model fit the data according to all established fit metrics; therefore, the current study fails to reject the hypothesis that this model fit the data well.

Two non-nested theoretical models were also evaluated in this study. Conceptually similar versions of Brown and Leigh’s (1996) model and Netemeyer et al.’s (1997) model were created from variables in the present study. Each of these models fit the data well. As noted above, although these models fit the data well, the hypothesized model was a more comprehensive and inclusive model of perceptions of organizational support, job attitudes, effort and employee behavior, and therefore was the most suitable model overall.

Lastly, several alternate versions of the best fitting structural model were evaluated. One such model separated OCBs into five factors and identified small but significant relationships between work intensity and conscientiousness and time commitment and altruism, although the antecedent variables in the model still explained almost no variance in the employee behavior outcome measures. Further, a model that incorporated supervisor ratings in place of employee effort assessment found a positive relationship between work intensity and OCBs and in-role performance, though time commitment was not related to either.
DISCUSSION

Employee behavior is important to organizations and researchers because of its effects on organizational productivity, profitability, and performance (Dipboye et al., 1994; LePine et al., 2002). The goal of the current study was to integrate key aspects of two models of employee behavior (i.e., Brown & Leigh, 1996; Netemeyer et al., 1997) in an effort to more comprehensively assess how employee perceptions of their organization impact their attitudes, effort, and subsequently their behaviors. A hypothesized model was evaluated that included perceived organizational support and perceived opportunity for reward, which impacted job satisfaction, job involvement, and affective organizational commitment. These attitudes impacted time commitment and work intensity (two dimensions of effort), which in turn impacted OCBs and in-role performance. Results of the current study support this hypothesized model, indicating that organizational perceptions impact job attitudes, which, through effort, impact employee behavior. Although the hypothesized model fit the data best of all a priori models in the current study, several paths within this model were not significant. Each path in the supported hypothesized model is discussed below.

Influences on Job Attitudes

POS was positively related to job satisfaction, organizational commitment, and job involvement, indicating that employee perceptions of organizational support positively impact these job attitudes. These findings are consistent with past research that has found positive relationships between POS and job satisfaction (Eisenberger et al., 1997; Randall et al., 1999), job involvement (O’Driscoll & Randall, 1999), and organizational commitment (Eisenberger, Fasolo & Davis-LaMastro, 1990; Eisenberger et al., 2001;
Hutchison, 1997; O’Driscoll & Randall, 1999; Randall et al., 1999; Wayne, Shore & Liden, 1997). These relationships fit with the notions of social exchange (Konovsky & Pugh, 1994) and reciprocity (Bateman & Organ, 1983; Schnake, 1991) discussed earlier, wherein organizations’ support of, and commitment toward, employees is reflected in the attitudes of employees. Moreover, because of the relationships between these job attitudes and OCBs, in-role performance, and turnover found in other studies (Brown, 1996; Iaffaldano & Muchinsky, 1985; Organ & Ryan, 1995; Tett & Meyer; 1993) the replication of these relationships between POS and these variables should interest practitioners and researchers, even though POS and the job attitudes did not have a significant influence on employee behavior in this particular study (potential reasons why are discussed below).

Note that POS impacted job satisfaction and organizational commitment significantly more than it did job involvement. This indicates that while an organization’s support of employees impacts employee satisfaction and affective organizational commitment, it has a lesser impact on employees’ involvement in their jobs. One reason this finding may have occurred is that satisfaction and affective commitment are affect-oriented, whereas job involvement is cognitively-oriented (Brown, 1996; Huselid & Day, 1991). In other words, POS may trigger affective responses in employees, whereas it has less impact on the extent to which individuals cognitively identify with their jobs. It also may be that job involvement is more impacted by individual difference variables such as personality, career commitment, or interest in other activities outside of work, resulting in POS having a lesser impact on job involvement (Brown, 1996).
POR also was positively related to job satisfaction, job involvement, and organizational commitment; this was the first study to investigate these relationships. These significant paths from POR to the three job attitudes in this study indicate that employees’ perceptions of the fairness of reward distribution and availability of rewards in their organizations positively impact their attitudes toward their jobs and organizations. These findings are in line with previous studies that have related perceptions of reward opportunity or distributional justice to job attitudes. Specifically, the relationship between POR and job satisfaction conceptually supports Netemeyer et al.’s (1997) finding that fairness in reward allocation positively related to job satisfaction. Also, this relationship conceptually supports findings from Sims and Szilagyi (1975), who observed that leader reward behavior was related to job satisfaction (though POR as measured in the current study uses the organization rather than a leader as the referent). Interestingly, POR did not impact any one attitude significantly more than the other. Instead it appears to have similar effects on all job attitudes.

Another finding in the current study was that POS impacted affective organizational commitment significantly more than did POR. This difference indicates that commitment from the organization more strongly impacts an individual’s commitment toward the organization than does an organization’s provision of reward opportunities. The fact that POS has more of an impact on affective organizational commitment than POR has implications for organizational efforts with regard to staff retention and turnover, because research has shown that affective organizational commitment is significantly related to intent to leave and turnover (Mathieu & Zajac, 1990). One reason for this likely extends from reciprocity theory—when employees feel
that the organization commits to them, they are likely to in turn be committed to the organization and be less likely to leave.

As mentioned above, confirmatory factor analysis indicated that respondents differentiated between POS and POR, and in this respect this study provides interesting new findings. This is relevant because much literature in the past has included one dimension of organizational support or the other, with few studies addressing both affective/supportive and financial/promotional organizational provisions. Additionally, no other known study has investigated how dimensions of organization perceptions (organizational support and reward) simultaneously relate to job satisfaction, job involvement, and affective organizational commitment. This study’s findings that POS and POR impact job satisfaction, job involvement, and organizational commitment suggest that perceptions of the organization’s support and reward efforts involving employees are perceived discriminately by employees, and that each factor contributes uniquely (and in some cases more strongly) to employee attitudes. Each of the findings are relevant to practitioners from the standpoint that an improved ability to understand job attitudes should lead to benefits for organizations (i.e., correlates of job attitudes including increased tenure, performance, decreased absenteeism; Netemeyer et al., 1997; Tett & Meyer, 1993).

**Influences on Effort**

The current study found that two job attitudes were significantly related to separate dimensions of employee effort. First, job involvement was positively related to time commitment. Second, job satisfaction was positively related to work intensity. However, affective organizational commitment was not significantly related to either dimension of
employee effort. In the current study, the significant relationships between job involvement and time commitment, and job satisfaction and work intensity provide support for social exchange theory and the notion of reciprocity between organizations and employees (Bateman & Organ, 1983; Konovsky & Pugh, 1994; Schnake, 1991). These findings support the idea that employees’ perceptions of their organization ultimately result in reciprocal action by the employee, namely, committing more time to work and working with greater intensity.

As mentioned above, job involvement was positively related to time commitment. This finding suggests that psychological identification with one’s job (job involvement) leads to more time spent at work but not necessarily to harder work (a path from job involvement to work intensity was not significant). Additionally, job satisfaction was positively related to work intensity. This suggests that employees who are satisfied with their jobs work more intently, though they are not necessarily more likely to spend more time there (job satisfaction did not significantly impact time commitment). Several possibilities may explain these relationships between job satisfaction and job involvement and time commitment and work intensity in this study. It is likely that employees reciprocate to organizations by working intently (Eisenberger et al., 1990), though other additional factors (e.g., family, other interests/commitments) impact time commitment for many of these workers (Adams, King & King, 1996). That is, time committed to the job is likely a function of the number of other hobbies or interests involved in one’s life (such that these activities leave less time for work). Alternately, it may be that some employees are more satisfied by virtue of the fact that they do not spend as much time at work (lowering the correlation between satisfaction and time commitment). Research has borne
out this idea; several studies of job and family involvement have shown that people who have more balanced work and family lives are more satisfied with their jobs (Adams et al., 1996; Ernst-Kossek & Ozeki, 1998).

The reasons why several non-significant relationships were observed in this study (i.e., job involvement positively impacting work intensity, job satisfaction impacting time commitment, and affective organizational commitment impacting both of these) are less clear. One possible explanation for this phenomenon is that the job attitudes in the model share common variance in the prediction of effort constructs (that is, they are to some degree collinear) and, as such, no attitude accounts for significant unique variance. Additionally, in the case of affective organizational commitment, it may be that this variable has less of an effect on immediate factors like effort exerted or time spent at work, but rather, more strongly affects long term factors such as organizational tenure (affective organizational commitment and tenure were significantly correlated in the current study) (Mathieu & Zajac, 1990).

Influences on Employee Behavior

All parameters between time commitment and work intensity and employee behavior (OCBs and in-role performance) were non-significant, indicating that effort did not significantly impact the performance criteria in this study. These results are contradictory to past research, which suggested small, but significant, correlations between effort and performance (e.g., $r = .20 - .36$ in Brown & Leigh, 1996). One possibility for the lack of relationships between effort and employee behavior may be that these factors truly were not related to one another in the current study. Research indicates that the relation between effort and performance depends on complexity of the task.
Research has shown that the relationship between effort and performance is greater and interacts with cognitive ability on difficult tasks, whereas on easier tasks the relation between effort and performance is lower (Kanfer & Ackerman, 1989). It may be that some people exert high levels of effort only to achieve mediocre performance because of other factors such as ability or job complexity, whereas others put forth little effort and perform at a high level because of these same factors. The collapsing of these two conditions would result in no relationship being found between effort and performance. However, this interpretation is only speculative and in contrast to a body of literature indicating effort relates to employee behavior (Locke, Shaw, Saari & Latham, 1981).

Some evidence from this study indicated that the nonexistence of relationships between effort and employee behavior in this study might be due to the restricted range of the performance criteria. Scale means were high across employee behavior dimensions, although they were comparable to past studies (Diefendorff et al., 2002; Podsakoff et al., 1990; Williams & Anderson, 1991). Variances for the employee behavior scales were significantly smaller than in some previous studies that used the same measures and found significant relationships between employee attitudes or other variables and employee behavior (e.g., Podsakoff et al., 1990; Williams & Anderson, 1991). This indicates that most supervisors may have rated their respective employees highly (displaying “leniency” error), thereby reducing the potential to observe statistically significant relationships between their evaluations and the employees’ responses (Cooper, 1981). This “criterion problem” (poor quality supervisor ratings) may be caused by a variety of factors including suspiciousness of researcher intent, fear of others seeing the ratings, inability to discriminate between good and poor performers, or concerns for employees’ well-being
(Austin & Villanova, 1992). This phenomenon has been widely reported as having occurred throughout the history of psychological research and has been cited as a symptom of low correlations between predictors and criteria in a large percentage of psychological research involving appraisal of employee performance in any form (Austin & Villanova, 1992).

Additional Comments on Data Collection Procedure

Several comments about the procedure employed in the current study are warranted. The procedure used in this study, using students to identify full-time working study participants, is different than the more popular procedure for research on employee perceptions and attitudes of surveying a single organization and studying its members. Although every procedure has its advantages and disadvantages, there are several reasons why this procedure is considered a viable and appropriate data collection method. First, respondents were given business reply envelopes in which to confidentially respond, and surveys were matched via code rather than name. Beyond this, a portion (~10%) of respondents were personally contacted to verify authenticity of responses. This means that steps were taken to ensure that respondents felt comfortable honestly answering the survey, and further, checks were made to ensure the intended respondents were in fact the people completing the surveys. Additionally, several studies have shown that survey data collected via trained undergraduates similar to the approach used in this study are of comparable quality to data collected via more traditional data collection procedures. Specifically, several researchers (e.g., Hazer & Highhouse, 1997; Nagy, 2002; Reeve & Smith, 2001; Smith & Sulsky, 1995; Smith, Tisak, Hahn & Schmieder, 1997; Smith, Tisak & Schmieder, 1993) found comparable results between student-collected data from a
variety of organizations and positions to that of data collected through more traditional organizational channels. Furthermore, these studies demonstrating equivalent relationships between this methodology and more traditional methodologies were published in top-tier, peer reviewed scientific journals (e.g., Journal of Applied Psychology, Journal of Occupational and Organizational Psychology, Journal of Organizational Behavior, Organizational Research Methods). This technique also has been employed by a number of authors at different institutions (e.g., Bowling Green State University, Indiana University, University of Calgary, Radford University), and articles employing this technique have been cited widely by other scientific journal articles (the six articles listed above have to date been cited in over 20 subsequent articles), indications that the methodology employed in this study is regarded as relevant by publishing authors in the scientific community.

However, frequency of use or popularity of this method are only indirect assessments of the quality of the data collection procedure. The central, and most important issue involves the quality of the data collected via the procedure. Several indications exist from current and past studies that the procedure from this study produces data of high quality. First, as discussed earlier, all respondents contacted acknowledged their participation in the study. Second, correlations between constructs were similar in this study to those found with more traditional data collection procedures in past research. For example, job satisfaction correlated with an averaged OCB construct $r = .20$ in the current study, similar to Netemeyer et al.’s (1997) reported correlation between satisfaction and OCBs of $r = .25$ (Study 1), and Podsakoff et al.’s (1990) finding of satisfaction correlating on average $r = .19$ with OCB dimensions (Netemeyer et al. utilized
self-ratings of OCBs; Podsakoff utilized organizationally-collected supervisor ratings of OCBs). Correlations were also similar in the present study between job satisfaction and in-role performance ($r = .11$) compared to previous research [Iaffaldano and Muchinsky (1985) observed an overall correlation of $r = .17$ between satisfaction and performance in their meta-analysis]. Also, POS correlated with job satisfaction ($r = .56$), affective organizational commitment ($r = .63$), and job involvement ($r = .28$) in the current study similarly to relationships found in past studies, such as Eisenberger et al. (1997) who found $r = .68$ between POS and job satisfaction, Eisenberger et al. (1990) who observed $r = .64$ between POS and affective commitment, and O’Driscoll and Randall (1999) who found $r = .44$ between POS and job involvement. Additionally, an a priori theoretical model of the constructs investigated in this study was supported. This suggests that participants responded to measures via this methodology similarly to how those in past studies did, and that responses were in line with what theory predicted. Although every effort was made to assure high-quality ratings, and many indications suggest that data in this study were of equal quality to that collected via other methods, the characteristics of the supervisor ratings in the current study make them a limitation.

Additional Findings

**Alternative Conceptualization of Effort**

In addition to the findings discussed above involving the hypothesized model, several additional findings are worth discussing. In particular, supervisor ratings of employee effort were substituted for employee self-ratings of effort as an alternate measure of this variable. The following differences were observed: job involvement no longer impacted time commitment, and work intensity now positively impacted in-role
performance and OCBs. These discrepancies in findings between the employee effort model and supervisor effort model suggest that the measurement of employee effort differed somewhat between employee ratings and supervisor ratings (as also evidenced by only low to moderate correlations between these constructs of \( r = .14 \) to \( .40 \)).

One potential reason that employee self-ratings of effort differed from supervisor ratings of effort could be due to observation of maximum versus typical effort by these groups. In other words, differences in employee and supervisor ratings of employee effort may have been due to the fact that employees perceive themselves continually, and therefore may rate their level of typical effort on the job, whereas supervisors often only observe maximal effort by the employee (see DuBois, Sackett, Zedeck & Fogli, 1993). As such, these perspectives are rating different sets of behaviors or observations. This occurrence also could explain why employee ratings of effort were not related to supervisor ratings of job performance and OCBs in this study; employees may have rated themselves low on effort because of their continual observation of effort, while supervisors rate what effort and performance they see as high. This rationale is consistent with scale averages in the current study (on both effort dimensions supervisors rated employees’ effort significantly higher on average than did employees). Other reasons why employee and supervisor ratings of effort did not align may be that the two parties had differences in performance expectations or that they perceived work events differently (Murphy & Cleveland, 1995). These discrepancies in ratings between employees and supervisors are somewhat common in research on performance appraisal. For instance, Harris and Schaubroeck (1988) observed a mean correlation of \( r = .35 \) between employee and supervisor ratings in their meta-analysis. Additionally, the misalignment between
supervisors and employees is consistent with the lack of agreement found in research on Leader-Member Exchange, where correlations between leaders’ and members’ LMX ratings averaged $r = .29$ across several studies in a recent meta-analysis (Gerstner & Day, 1997).

Interestingly, whereas supervisor effort ratings were on average much higher than self ratings in the current study, most past research of performance appraisal has observed the opposite (that is, employees typically inflate their ratings relative to supervisor/peer ratings) (Harris & Schaubroeck, 1988). However, the context in which these ratings were gathered may have contributed to this. Harris and Schaubroeck note that in the context of organization-sponsored performance appraisal, individuals are motivated by a self-serving bias to inflate their ratings (because their evaluation of their performance can potentially lead to rewards, promotions, etc.). In situations such as the current study, where individuals were explicitly told that no one outside of the research team would see their individual ratings, employees may not have felt the need to inflate their ratings, as it would serve to benefit them little with regard to the organization. Regardless of the cause, ratings of employee effort from both supervisors and employees should be considered as unique sources of information in future research. Some of these rating differences are likely affected by other individual difference factors not examined here, such as intellectual abilities or work personality. The examination of other personal employee characteristics to attempt to account for differences between employee and supervisor ratings of effort should be explored.
Alternative Conceptualizations of OCB Measure

In addition to the higher-order factor structure used for structural analysis, a model including five separated factors of OCB was evaluated because both a five-factor and higher-order factor model fit the data well. Consistent with recent recommendations (LePine et al., 2002) the more parsimonious higher-order model was used for structural analysis. However, because both factor structures fit well, the five-OCB alternative was examined as an exploratory step. A model including the structure of the best-fitting hypothesized model with a five-OCB structure fit the data well and two differences in parameter coefficients emerged compared to the hypothesized model parameters. Time commitment was positively related to altruism, and work intensity was positively related to conscientiousness. Although these statistically significant paths suggest that differences do exist in how effort impacts OCB dimensions, these paths did not explain a practically meaningful portion of the variance in these criteria (on average, less than 2% of the variance in any OCB dimension was explained). The significant path from work intensity to conscientiousness makes conceptual sense, such that employees who “go well beyond the minimum” at work are perceived as being conscientious (Podsakoff et al., 1990, p.115). Likewise, the positive relationship between time commitment and altruism may occur because those employees who spend more time at work are present more to assist others. Or, employees who spend more time at work may characteristically be more willing to spend extra time helping other people with tasks that relate to organizational goals (these ideas also fit with Podsakoff et al.’s definition of altruism).
Summary

This study contributed to the existing body of organizational research in several ways. First, this study integrated and expanded upon two previous studies (Brown & Leigh, 1996; Netemeyer et al., 1997) by incorporating variables from each, aligning conceptually similar variables, and by including new variables in the hypothesized model (i.e., POR, organizational commitment). Results indicated that the hypothesized model of organizational perceptions, job attitudes, employee effort, and employee behavior fit the data well. This study found that POS and POR significantly impact job satisfaction, job involvement, and affective organizational commitment. Further, job satisfaction significantly impacted work intensity, and job involvement significantly impacted time commitment. Neither dimension of effort significantly impacted employee behavior. The sum of these contributions is an increased understanding of the relationships among all of these factors and a number of interesting findings for further exploration. As mentioned earlier, such an understanding may enable practitioners and researchers to better predict behavior and to better utilize human resources in work settings.

Limitations

This study had several potential limitations. One limitation of this study was its cross-sectional, rather than longitudinal design. Such a study can only examine strength of relationships between variables at a fixed point in time – causality cannot be determined. However, the cross-sectional design did allow an analysis of how several important variables related to one another in an organizational setting.

Another potential limitation is that the possibility of model misspecification exists because a limited number of factors were included in this model. Model misspecification
refers to specifying a model incorrectly due to failure to incorporate other variables that play a part in the relationships investigated. In other words, it is possible that if other factors had been included in the model in the present study, a better fitting or more appropriate model may have been identified. Other factors that might increase the fit of the data to the model or explain more of the variance in the dependent endogenous variables could be missing; however, the possibilities for model misspecification are literally infinite, and this limitation exists for all inferential statistics.

An additional limitation of this study was that several employee and supervisor measures each were collected via common forms. This makes percept-percept inflation of correlations between measures collected via the same questionnaire a possibility. Percept-percept inflation occurs when survey respondents respond similarly to survey items from different scales/measures because the items are together on the same form, rather than because individuals truly feel similarly about the items (Crampton & Wagner, 1994). In other words, these correlations may exist because the same person responded to multiple measures, rather than because of true relationships among the constructs.

Another limitation of the current study was that the variance associated with performance criteria was restricted and means were almost universally high. Analyses (F test of equality of variance) revealed that the variances of OCB and in-role performance measures were significantly more restricted in the current study compared to some previous research. Specifically, analysis showed that variance in OCB dimensions in the current study was significantly smaller than in Podsakoff et al.’s (1990) study. Also, equality of variance comparison for Williams and Anderson’s (1991) in-role performance measure and the same measure in the current study indicated a significantly smaller
amount of variance in data from the current study. These differences may have been a factor in why no relationship was observed between employee effort and employee behavior. However, while the variances in ratings of employee behavior were restricted compared to some previous use, they were not entirely unusual. Variances were not significantly different from those in another study that used the performance measures from this study (Diefendorff et al., 2002), and similar restriction in performance criteria has frequently plagued research, as reported in detail by Austin and Villanova (1992). Therefore, it could be that other individual difference attributes, such as personality, ability, job experience, and similar factors may interact to influence the relationship between employee effort and employee behavior, and any one or more of these could help to better explain the relationship.

**Directions for Future Research**

There are several directions for future research. First, findings from this study should be replicated. Although several important findings were identified here, and they were identified in an organizationally diverse sample, another study showing the same findings with different participants is important for generalizability. Replication also would be valuable because the POR scale used in this study had not been used in its present form in previous research; independent evaluation of POR’s relations to job attitudes and other constructs in other samples would broaden knowledge of this scale. Second, an important direction for future research should be to further explore the nature and dimensionality of employee perceptions of organizational support and reward. Two dimensions were included in this study, but it is possible that other organizational perceptions, such as perceptions of culture, organizational goodwill, or honesty influence
employee attitudes and effort. Third, many factors of interest were not included in the current study because of practical limitations. Future research should investigate the role that some of these individual difference factors, such as personality (e.g., conscientiousness, agreeableness), cognitive ability, and motivations (e.g., money motivation, affiliation motivation), play in relationships between organizational support, job attitudes, effort, and employee behavior. A fourth direction for future research should be examining the complexities of relationships between the two dimensions of effort in this study and job attitudes. As discussed earlier, relationships among job attitudes and effort dimensions differed – a follow up study collecting more detail around these factors and others that influence them could yield interesting information about why these results occurred. Finally, an exploration of why supervisor and subordinate ratings of effort differ substantially would be interesting. Specifically, the extent to which misalignment of perceptions of performance, lack of clarity of job expectations, or differences in temperament at time of rating completion lead to low agreement between supervisors’ and subordinates’ ratings of effort would be of interest. An understanding of the disconnects between effort perceptions and performance ratings is a possible key to an overall understanding of relationships between organizational perceptions and job attitudes and employee behavior.
REFERENCES


APPENDIX A

EMPLOYEE SURVEY MEASURES

Perceived Organizational Support

1. My organization cares about my opinions.
2. My organization really cares about my well being.
3. My organization strongly considers my goals and values.
4. Help is available from my organization when I have a problem.
5. My organization would forgive an honest mistake on my part.
6. If given the opportunity, my organization would take advantage of me.(R)
7. My organization shows very little concern for me.(R)
8. My organization is willing to help me if I need a special favor.

Opportunity for Reward

1. The reward procedures in my organization are fair.
2. If I work hard and am productive, I will be compensated by my organization.
3. I have plenty of opportunities to be rewarded for the work I do.
4. In my organization, those who deserve rewards receive them.
5. No matter how hard I work, I will not be rewarded for it.(R)
6. I am rewarded by my organization based on my contributions.
Job Involvement

1. The most important things that happen to me involve my present job.
2. To me, my job is only a small part of who I am.(R)
3. I am very much involved personally in my job.
4. I live, eat, and breathe my job.
5. Most of my interests are centered around my job.
6. I have very strong ties with my present job that would be very difficult to break.
7. Usually I feel detached from my job.(R)
8. Most of my personal life goals are job-oriented.
9. I consider my job to be very central to my existence.
10. I like to be absorbed in my job most of the time.

Overall Job Satisfaction

1. All in all I am satisfied with my job.
2. In general, I don’t like my job.(R)
3. In general, I like working here.
Affective Organizational Commitment

1. I would be happy to spend the rest of my career with my organization.

2. I feel as if my organization’s problems are my own.

3. I do not feel a sense of “belonging” to my organization.(R)

4. I do not feel “emotionally attached” to my organization.(R)

5. I do not feel like “part of the family” at my organization.(R)

6. My organization has a great deal of personal meaning for me.

Effort Scale

1. Other people know me by the long hours I keep.

2. My clients know I’m in the office early and always leave late.

3. Among my peers, I’m always the first to arrive and the last to leave.

4. Few of my peers put in more hours weekly than I do.

5. I put in more hours throughout the year than most of our workers do.

6. When there’s a job to be done, I devote all of my energy
to getting it done.

7. When I work, I do so with intensity.

8. I work at my full capacity in all of my job duties.

9. I strive as hard as I can to be successful in my work.

10. When I work, I really exert myself to the fullest.

*Note: Items marked with (R) are reverse-scored.
APPENDIX B

SUPERVISOR SURVEY MEASURES

Altruism (OCB)

1. Helps orient new employees even though it is NOT required.
2. Helps others who have been absent.
3. Helps others who have heavy work loads.
4. Is always ready to lend a helping hand to those around him or her.
5. Willingly helps others who have work related problems.

Conscientiousness (OCB)

1. Attendance at work is above the norm.
2. Believes in giving an honest day's work for an honest day's pay.
3. Does NOT take extra breaks.
4. Is one of my most conscientious employees.
5. Obeys company rules and regulations even when no one is watching.

Courtesy (OCB)

1. Considers the impact of his or her actions on coworkers.
2. Does NOT abuse the rights of others.
3. Is mindful of how his or her behavior affects other people's jobs.
4. Takes steps to try to prevent problems with other workers.
5. Tries to avoid creating problems for coworkers.
Civic Virtue (OCB)
1. Attends functions that are NOT required, but help the company image.
2. Attends meetings that are NOT mandatory, but are considered important.
3. Keeps abreast of changes in the organization.
4. Reads and keeps up with organization announcements, memos, and so on.

Sportsmanship (OCB)
1. Always finds fault with what the organization is doing. (R)
2. Always focuses on what's wrong, rather than the positive side. (R)
3. Consumes a lot of time complaining about trivial matters. (R)
4. Is the classic "squeaky wheel" that always needs greasing. (R)
5. Tends to make "mountains out of molehills." (R)

In-role Performance Items
1. Adequately completes assigned duties.
2. Engages in activities that will directly affect his or her performance evaluation.
3. Fails to perform essential duties. (R)
5. Meets formal performance requirements of the job.
6. Neglects aspects of the job he or she is obliged to perform. (R)
7. Performs tasks that are expected of him or her.

*Note: Items marked with (R) are reverse-scored.
APPENDIX C

INSTRUCTIONS FOR EMPLOYEES

We are soliciting your participation in a research study entitled “Organizational Perceptions and Their Relationships to Job Attitudes and Employee Performance,” and hope you will agree to take about 10-15 minutes of your time to complete this survey. The purpose of this study is to explore employees’ views and perceptions about different aspects of their jobs. Questions in this survey will ask about your attitudes toward your job and perceptions of your organization. Your participation is entirely voluntary, and all responses are confidential. Completing this survey will not expose you to any foreseeable risk or harm of any sort. We are interested in data from full-time working adults (non-students over age 18) and their supervisors. Data gathered in this study will be used only for research purposes, to further understanding of how attitudes and perceptions affect employee performance. Completion of this survey constitutes your informed consent to participate in this study. If you have questions or concerns regarding this survey or would like a summary of the findings, please contact Gary J. Greguras, Ph.D. during working hours (8AM-5PM, M-F), at Louisiana State University, Department of Psychology, Baton Rouge, LA 70803, or by phone at 225-334-6646, or by email: ggregu1@lsu.edu. You may also contact Keith McCook during work hours via telephone at (800)283-6055, ext. 105, or via email at kmccook@bigby.com. You may also contact Dr. Robert Mathews, Chairman, Institutional Review Board by phone at 225-578-4114. Thank you for agreeing to participate in this study; your help is greatly appreciated.

INSTRUCTIONS:

1. Please have your supervisor complete and return the survey labeled “Supervisor Survey”.

2. Please complete this survey and return it in the enclosed self-addressed postage paid envelope by XXXXXXX.

3. Please do not discuss your responses to this survey with your supervisor until each of you independently have completed your respective survey.

4. Some items refer to “your supervisor”. When completing these items, “your supervisor” refers to the supervisor you had complete the “Supervisor Survey”.

5. Thank you for participating in this study
INSTRUCTIONS FOR SUPERVISORS

We are soliciting your participation in a research study entitled “Organizational Perceptions and Their Relationships to Job Attitudes and Employee Performance,” and hope you will agree to take about 10 minutes of your time to complete this survey. The purpose of this study is to explore employees’ views and perceptions about different aspects of their jobs and how this relates to their performance. Questions in this survey will ask about the performance of the employee from whom you received this survey. Your participation is entirely voluntary, and all responses are confidential. Completing this survey will not expose you to any foreseeable risk or harm of any sort. We are interested in data from full-time working adults (non-students over age 18) and their supervisors (you). Data gathered in this study will be used only for research purposes, to further understanding of how attitudes and perceptions affect employee performance. Completion of this survey constitutes your informed consent to participate in this study. If you have questions or concerns regarding this survey or would like a summary of the findings, please contact Gary J. Greguras, Ph.D. during working hours (8AM-5PM, M-F), at Louisiana State University, Department of Psychology, Baton Rouge, LA 70803, or by phone at 225-334-6646, or by email: ggregu1@lsu.edu. You may also contact Keith McCook during work hours via telephone at (800)283-6055, ext. 105, or via email at kmccook@bigby.com. You may also contact Dr. Robert Mathews, Chairman, Institutional Review Board by phone at 225-578-4114. Thank you for agreeing to participate in this study; your help is greatly appreciated.

INSTRUCTIONS:
1. Please complete this survey and return it in the enclosed self-addressed postage paid envelope by XXXXXXX.

2. Please do not discuss your responses to this survey with your subordinate until each of you independently have completed your respective survey.

3. Some items refer to “your subordinate”. When completing these items, “your subordinate” refers to the subordinate who asked you to complete this survey.

4. When completing the first two pages of the survey, please rate the subordinate who asked you to complete this survey on the listed items.

5. Thank you for participating in this study.
APPENDIX E

EMPLOYEE SURVEY

<table>
<thead>
<tr>
<th>Job Involvement</th>
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<tbody>
<tr>
<td>10. The most important things that happen to me involve my present job.</td>
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<td>11. To me, my job is only a small part of who I am.</td>
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<td>12. I am very much involved personally in my job.</td>
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<td>14. Most of my interests are centered around my job.</td>
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<td>15. I have very strong ties with my present job that would be very difficult to break.</td>
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<td>16. Usually I feel detached from my job.</td>
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<td>18. I consider my job to be very central to my existence.</td>
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<td>13. My organization strongly considers my goals and values.</td>
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<td>15. My organization would forgive an honest mistake on my part.</td>
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<td>16. If given the opportunity, my organization would take advantage of me.</td>
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<td>17. My organization shows very little concern for me.</td>
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<th>Work Effort</th>
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<td>19. Other people know me by the long hours I keep.</td>
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<td>20. My clients know I’m in the office early and always leave late.</td>
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<td>21. Among my peers, I’m always the first to arrive and the last to leave.</td>
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<td>22. Few of my peers put in more hours weekly than I do.</td>
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<td>23. I put in more hours throughout the year than most of our workers do.</td>
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<td>24. When there’s a job to be done, I devote all of my energy to getting it done.</td>
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<tr>
<td>25. When I work, I do so with intensity.</td>
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<tr>
<td>26. I work at my full capacity in all of my job duties.</td>
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<tr>
<td>27. I strive as hard as I can to be successful in my work.</td>
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<td>28. When I work, I really exert myself to the fullest.</td>
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<th>Organizational Commitment</th>
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<td>29. I would be happy to spend the rest of my career with my organization.</td>
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<td>30. I feel as if my organization’s problems are my own.</td>
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<td>31. I do not feel a sense of “belonging” to my organization.</td>
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<td>32. I do not feel “emotionally attached” to my organization.</td>
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<td>33. I do not feel like “part of the family” at my organization.</td>
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<td>39.</td>
</tr>
<tr>
<td>40.</td>
</tr>
</tbody>
</table>

**Opportunity for Reward**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>41.</td>
<td>The reward procedures in my organization are fair.</td>
</tr>
<tr>
<td>42.</td>
<td>My organization will notice if my productivity or work quality declines.</td>
</tr>
<tr>
<td>43.</td>
<td>If I work hard, I will receive extra pay (bonus or raise) for my efforts.</td>
</tr>
<tr>
<td>44.</td>
<td>I have plenty of opportunities for promotion in my organization.</td>
</tr>
<tr>
<td>45.</td>
<td>I have plenty of opportunities for reward in my organization.</td>
</tr>
<tr>
<td>46.</td>
<td>No matter how hard I work, I won't receive extra pay.</td>
</tr>
</tbody>
</table>

**Person-Organization Fit**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>47.</td>
<td>I feel that my personal values are a good fit with my organization.</td>
</tr>
<tr>
<td>48.</td>
<td>My organization has the same values as I do with regard to concern for others.</td>
</tr>
<tr>
<td>49.</td>
<td>My organization has the same values as I do with regard to honesty.</td>
</tr>
<tr>
<td>50.</td>
<td>My organization has the same values as I do with regard to fairness.</td>
</tr>
</tbody>
</table>

**Overall Job Satisfaction**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>51.</td>
<td>All in all I am satisfied with my job.</td>
</tr>
<tr>
<td>52.</td>
<td>In general, I don’t like my job.</td>
</tr>
<tr>
<td>53.</td>
<td>In general, I like working here.</td>
</tr>
</tbody>
</table>

**Satisfaction with Pay**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>54.</td>
<td>I feel I am being paid a fair amount for the work that I do.</td>
</tr>
<tr>
<td>55.</td>
<td>Raises are too few and far between.</td>
</tr>
<tr>
<td>56.</td>
<td>I feel unappreciated by the organization when I think about what they pay me.</td>
</tr>
<tr>
<td>57.</td>
<td>I feel satisfied with my chances for salary increases.</td>
</tr>
</tbody>
</table>

**Satisfaction with Promotion**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>58.</td>
<td>There is really too little chance for promotion on my job.</td>
</tr>
<tr>
<td>59.</td>
<td>Those who do well on the job stand a fair chance of being promoted.</td>
</tr>
<tr>
<td>60.</td>
<td>People get ahead as fast here as they do in other places.</td>
</tr>
<tr>
<td>61.</td>
<td>I am satisfied with my chances for promotion.</td>
</tr>
</tbody>
</table>

**Satisfaction with Coworkers**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>62.</td>
<td>I like the people I work with.</td>
</tr>
<tr>
<td>63.</td>
<td>I find I have to work harder at my job because of the incompetence of people I work with.</td>
</tr>
<tr>
<td>64.</td>
<td>I enjoy my coworkers.</td>
</tr>
<tr>
<td>65.</td>
<td>There is too much bickering and fighting at work.</td>
</tr>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>Satisfaction with Work</strong></td>
<td></td>
</tr>
<tr>
<td>66. I sometimes feel my job is meaningless.</td>
<td>1</td>
</tr>
<tr>
<td>67. I like doing the things I do at work.</td>
<td>1</td>
</tr>
<tr>
<td>68. I feel a sense of pride in doing my job.</td>
<td>1</td>
</tr>
<tr>
<td>69. My job is enjoyable.</td>
<td>1</td>
</tr>
<tr>
<td><strong>Satisfaction with Supervisor</strong></td>
<td></td>
</tr>
<tr>
<td>70. My supervisor is quite competent in doing his/her job.</td>
<td>1</td>
</tr>
<tr>
<td>71. My supervisor is unfair to me.</td>
<td>1</td>
</tr>
<tr>
<td>72. My supervisor shows little interest in the feelings of subordinates.</td>
<td>1</td>
</tr>
<tr>
<td>73. I like my supervisor.</td>
<td>1</td>
</tr>
<tr>
<td><strong>Supportive Management</strong></td>
<td></td>
</tr>
<tr>
<td>74. My boss is flexible about how I accomplish my job objectives.</td>
<td>1</td>
</tr>
<tr>
<td>75. My manager is supportive of my ideas and ways of getting things done.</td>
<td>1</td>
</tr>
<tr>
<td>76. My boss gives me the authority to do my job as I see fit.</td>
<td>1</td>
</tr>
<tr>
<td>77. I’m careful in taking responsibility because my boss is often critical of new ideas.</td>
<td>1</td>
</tr>
<tr>
<td>78. I can trust my boss to back me up on decisions I make in the field.</td>
<td>1</td>
</tr>
<tr>
<td><strong>Role Clarity</strong></td>
<td></td>
</tr>
<tr>
<td>79. Management makes it perfectly clear how my job is to be done.</td>
<td>1</td>
</tr>
<tr>
<td>80. The amount of work responsibility and effort expected in my job is clearly defined.</td>
<td>1</td>
</tr>
<tr>
<td>81. The norms of performance in my department are well understood and communicated.</td>
<td>1</td>
</tr>
<tr>
<td><strong>Contribution</strong></td>
<td></td>
</tr>
<tr>
<td>82. I feel very useful in my job.</td>
<td>1</td>
</tr>
<tr>
<td>83. Doing my job well really makes a difference.</td>
<td>1</td>
</tr>
<tr>
<td>84. I feel like a key member of the organization.</td>
<td>1</td>
</tr>
<tr>
<td>85. The work I do is very valuable to the organization.</td>
<td>1</td>
</tr>
<tr>
<td><strong>Recognition</strong></td>
<td></td>
</tr>
<tr>
<td>86. I rarely feel my work is taken for granted.</td>
<td>1</td>
</tr>
<tr>
<td>87. My superiors generally appreciate the way I do my job.</td>
<td>1</td>
</tr>
<tr>
<td>88. The organization recognizes the significance of the contributions I make.</td>
<td>1</td>
</tr>
<tr>
<td><strong>Self-Expression</strong></td>
<td></td>
</tr>
<tr>
<td>89. The feelings I express at work are my true feelings.</td>
<td>1</td>
</tr>
<tr>
<td>90. I feel free to be completely myself at work.</td>
<td>1</td>
</tr>
<tr>
<td>91. There are parts of myself that I am not free to express at work.</td>
<td>1</td>
</tr>
<tr>
<td>92. It is okay to express my true feelings in this job.</td>
<td>1</td>
</tr>
<tr>
<td><strong>Challenge</strong></td>
<td></td>
</tr>
<tr>
<td>93. My job is very challenging.</td>
<td>1</td>
</tr>
<tr>
<td>94. It takes all my resources to achieve my work objectives.</td>
<td>1</td>
</tr>
</tbody>
</table>
PLEASE COMPLETE THE FOLLOWING DEMOGRAPHIC INFORMATION:

1. Age: ______

2. Gender: ___M ___F

3. Race or Ethnic Origin:
   ___American Indian or Alaskan Native   ___Asian or Pacific Islander   ___Black
   ___Hispanic/Latino                      ___White                        ___Other

4. Highest Degree Earned:
   ___GED   ___High School   ___Associates
   ___Bachelors   ___Masters    ___Doctorate/Professional

5. Are you currently a student? ___ Yes ___ No

6. Have you completed this survey before? _____Yes _____No

7. How many years of full-time work experience do you have? ____________years
   ____________months

8. How long have you worked in this organization? ______years ______months

9. Is your position full-time or part-time? ______Full-time ______Part-time

10. How long have you been supervised by the supervisor completing the other survey?
    _____years _____months

11. Approximately how long did it take you to complete this survey? _________minutes

12. What level are you at within this organization? (please check one)
    _____First-line supervisor   _____Middle-management   _____Upper-management

13. Which of the following best describes your organization? (please check one)
    _____Government   _____Service Industry   _____Manufacturing
    _____Financial   _____Transportation   _____Human Services
    _____Other ________________
## APPENDIX F

### SUPERVISOR SURVEY

<table>
<thead>
<tr>
<th>DISAGREE VERY MUCH</th>
<th>DISAGREE MODERATELY</th>
<th>DISAGREE SLIGHTLY</th>
<th>NEITHER AGREE OR DISAGREE</th>
<th>AGREE SLIGHTLY</th>
<th>AGREE MODERATELY</th>
<th>AGREE VERY MUCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
<td>(5)</td>
<td>(6)</td>
<td>(7)</td>
</tr>
</tbody>
</table>

1. Helps others who have heavy work loads.  
2. Is the classic "squeaky wheel" that always needs greasing.  
3. Believes in giving an honest day's work for an honest day's pay.  
4. Adequately completes assigned duties.  
5. Consumes a lot of time complaining about trivial matters.  
6. Tries to avoid creating problems for coworkers.  
7. Keeps abreast of changes in the organization.  
8. Neglects aspects of the job he or she is obliged to perform.  
9. Tends to make "mountains out of molehills."  
10. Considers the impact of his or her actions on coworkers.  
11. Attends meetings that are NOT mandatory, but are considered important.  
12. Engages in activities that will directly affect his or her performance evaluation.  
13. Is always ready to lend a helping hand to those around him or her.  
14. Attends functions that are NOT required, but help the company image.  
15. Reads and keeps up with organization announcements, memos, and so on.  
17. Helps others who have been absent.  
18. Does NOT abuse the rights of others.  
19. Willingly helps others who have work related problems.  
20. Performs tasks that are expected of him or her.  
21. Always focuses on what's wrong, rather than the positive side.  
22. Takes steps to try to prevent problems with other workers.  
23. Attendance at work is above the norm.
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>24. Fulfills responsibilities specified in job description.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>25. Always finds fault with what the organization is doing.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>26. Is mindful of how his or her behavior affects other people's jobs.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>27. Does NOT take extra breaks.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>28. Fails to perform essential duties.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>29. Obeys company rules and regulations even when no one is watching.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>30. Helps orient new employees even though it is NOT required.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>31. Is one of my most conscientious employees.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>32. Other people know this employee by the long hours they keep.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>33. This employee’s clients know they are in the office early and always leave late.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>34. Among their peers, this employee is always the first to arrive and the last to leave.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>35. Few of this employee’s peers put in more hours weekly than they do.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>36. This employee puts in more hours throughout the year than most people in our organization do.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>37. When there’s a job to be done, this employee devotes all of their energy to getting it done.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>38. When this employee works, they do so with intensity.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>39. This employee works at their full capacity in all of their job duties.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>40. This employee strives as hard as they can to be successful in their work.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>41. When this employee works, they really exert themselves to the fullest.</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>
PLEASE COMPLETE THE FOLLOWING DEMOGRAPHIC INFORMATION:

3. Age: ______

4. Gender: ___M ___F

3. Race or Ethnic Origin:
   ___American Indian or Alaskan Native  ___Asian or Pacific Islander  ___Black
   ___Hispanic/Latino  ___White  ___Other _______________

4. Highest Degree Earned:
   ___GED  ___High School  ___Associates
   ___Bachelors  ___Masters  ___Doctorate/Professional

5. Are you currently a student? ___Yes ___No

6. Have you completed this survey before? _____Yes _____No

12. How many years of full-time work experience do you have? ____years ____months

13. How long have you worked in this organization? ____years ____months

14. Is your position full-time or part-time? ______ Full-time ______ Part-time

15. How long have you supervised the subordinate who asked you to complete this survey? ____years ____months

16. How many subordinates do you currently supervise? ___________

17. Approximately how long did it take you to complete this survey? _________minutes

What managerial-level are you at within this organization? (please check one)
   _____First-line supervisor   _____Middle-management   _____Upper-management

18. Which of the following best describes your organization? (please check one)
   _____ Government   _____ Service Industry   _____ Manufacturing
   _____ Financial   _____ Transportation   _____ Human Services
   _____ Other _______________________

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APPENDIX G

ITEM-TESTLET RELATIONSHIPS

<table>
<thead>
<tr>
<th>Perceived Organizational Support</th>
<th>Altruism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Testlet 1 = POS1, POS2, POS3, POS8</td>
<td>ALT1, ALT2, ALT3, ALT4, ALT5</td>
</tr>
<tr>
<td>Testlet 2 = POS4, POS5, POS6, POS7</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Perceived Opportunity for Reward</th>
<th>Civic Virtue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Testlet 1 = POR3, POR4, POR6</td>
<td>CIVIC1, CIVIC2, CIVIC3, CIVIC4</td>
</tr>
<tr>
<td>Testlet 2 = POR1, POR2, POR5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Job Involvement</th>
<th>Conscientiousness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Testlet 1 = JI2, JI9, JI10</td>
<td>CONSC1, CONSC2, CONSC3, CONSC4, CONSC5</td>
</tr>
<tr>
<td>Testlet 2 = JI4, JI7, JI8</td>
<td></td>
</tr>
<tr>
<td>Testlet 3 = JI1, JI3, JI5, JI6</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Job Satisfaction</th>
<th>Courtesy</th>
</tr>
</thead>
<tbody>
<tr>
<td>JS1, JS2, JS3</td>
<td>COURT1, COURT2, COURT3, COURT4, COURT5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Affective Organizational Commitment</th>
<th>Sportsmanship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Testlet 1 = AOC1, AOC4, AOC5</td>
<td>SPORT1, SPORT2, SPORT3, SPORT4, SPORT5</td>
</tr>
<tr>
<td>Testlet 2 = AOC2, AOC3, AOC6</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time Commitment</th>
<th>In-role Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Testlet 1 = EFF2, EFF3</td>
<td>PERF1, PERF2, PERF3, PERF4, PERF5, PERF6, PERF7</td>
</tr>
<tr>
<td>Testlet 2 = EFF1, EFF4, EFF5</td>
<td></td>
</tr>
</tbody>
</table>

| Work Intensity | |
|---------------||
| Testlet 1 = EFF6, EFF8 | |
| Testlet 2 = EFF7, EFF9, EFF10 | |
VITA

Keith Douglas McCook was born in Fort Worth, Texas. He attended Southwest High School, graduating with high honors in 1993. Following high school Keith attended the University of Texas at Dallas on a full academic scholarship. In 1997 Keith graduated summa cum laude with a Bachelor of Arts degree in psychology from the university.

Later that year, Keith enrolled in the Industrial/Organizational Psychology graduate program at Louisiana State University.

Keith received a Master of Arts from Louisiana State University in the summer of 1999, and spent that summer as an intern with Bigby, Havis & Associates, a Dallas, Texas, based organizational psychology consulting firm. After returning to Baton Rouge, Keith served as the project manager for the Practicum Group, a nonprofit provider of industrial psychology consulting services operated through the university’s graduate Industrial/Organizational psychology program.

Upon completing coursework toward the doctoral degree in 2000, Keith moved to Dallas, Texas, where he resumed employment with Bigby, Havis & Associates while completing the dissertation. Keith currently works as a Senior Consultant with Bigby, Havis & Associates, and lives in Plano, Texas, with his wife, Kristina.