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USING MEASURES OF PERSONALITY AND
SELF-EFFICACY TO PREDICT WORK PERFORMANCE

DISSEYATION
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the Degree Doctor of Philosophy in the Graduate
School of the Ohio State University

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ABSTRACT

Personality research in Industrial / Organizational Psychology currently suggests that the big-five personality traits of conscientiousness, agreeableness, and emotional stability can be used to predict work performance. While the predictive validity of personality characteristics for work performance has been supported by many studies, the moderate strength of the relationship has sparked a search for moderators. Mischel (1977) has long contended that the strength of the situation is a moderator of the personality – behavior linkage. Barrick and Mount (1993) have used the construct of autonomy to operationalize the strength of the situation and have found that it is a moderator of the conscientiousness – work performance relationship. A recent meta-analysis by Stajkovic and Luthans (1998) indicates that self-efficacy is also relatively accurate predictor of work performance. The conceptualization of work performance used in both the personality trait and self-efficacy literatures can be generally categorized as task performance. While the importance of task performance has not diminished, recent empirical evidence indicates that contextual performance is a distinct source of overall work performance. To better understand the predictive validity of personality measures for work performance it is important to understand if a personality measure is a better indicator of task or contextual performance or both. This work explores the
relationship between selected personality measures and both task and contextual performance, and directly compares the predictive validity of personality traits and self-efficacy. Another purpose of this work is to explore how some relationships between personality traits and both task and contextual performance are moderated by autonomy, and to see if the relationship between self-efficacy and both task and contextual performance is moderated by autonomy.
For my amazing wife who made it possible for this work to be done, and for my wonderful children who motivate me to make the world we live in a better more fulfilling place.
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CHAPTER 1

INTRODUCTION

The main purpose of implementing selection procedures in an organization is to find measures that will accurately predict the work performance of prospective employees. Valid selection procedures benefit the organization by providing highly productive and effective workers. These same procedures benefit individual members of the organization by placing them in positions for which they are able to attain reasonably high levels of performance. Industrial / Organizational Psychologists who have argued for the use of personality traits for selection purposes have at times faced an up-hill battle. Early research indicated that personality measures were not good predictors of work performance (Ghiselli, 1973; Guion & Gottier, 1965; Locke & Hulin, 1962; Reilly & Chao, 1982; Schmitt, Gooding, Noe, & Kirsch, 1984). Through the use of meta-analytic techniques and a now commonly accepted framework for personality to be described in detail below, more recent work has provided support for the predictive validity of personality measures for work performance (Barrick & Mount, 1991; Barrick & Mount, 1993; Hough, Eaton, Dunnette, Kamp, & McCloy, 1990; Hurtz & Donovan, 2000; Tett, Jackson, & Rothstein, 1991).
Personality Traits as Predictors of Work Performance

For many years personality psychologists have attempted to characterize people in terms of their enduring dispositional qualities. The reason for attempting to understand, measure, or track these stable qualities is that they are thought to give insight into processes that produce behavior and propensities for behavior in a given individual. Industrial organizational psychologists who do personality research feel that their findings can have a significant impact on employee development and organizational effectiveness (Hogan, 1991). The present research is concerned with understanding the relationship between personality traits and work performance. Early studies that examined the relationship between personality measures and individual work performance were not encouraging. The overall finding from these studies was that personality characteristics are generally not valid predictors of job performance (Ghiselli, 1973; Guion & Gottier, 1965; Locke & Hulin, 1962; Reilly & Chao, 1982; Schmitt et al., 1984).

The outlook for the use of personality measures as predictors of job performance brightened considerably with the publication of two meta-analyses published in 1991 (Barrick & Mount, 1991; Tett et al., 1991). Both of these works pointed out two advantages that their meta-analyses had over previous works in that they were able to look at a relatively large number of studies, and that they used the same framework for measuring personality. The framework that they used is the five-factor model of personality. While this common framework is admittedly far from perfect, it has proven itself robust enough to emerge across time (Borgatta, 1964; Fiske, 1949; Hakel, 1977; Norman, 1963; Smith, 1967; Tupes & Christal,
across different cultures (Bond, Nakazato, & Shiraishi, 1975; Noller, Law, & Comrey, 1987; Salgado, 1997); and even across different theoretical frameworks (Barrick & Mount, 1993; Goldberg, 1981). Because of the extensive empirical support enjoyed by the five-factor model it has currently earned a place as the predominant scientifically supported model for personality. Thus, due to the relatively large number of studies available to them, and because of the common framework provided by the five-factor model of personality, the meta-analyses of both Barrick and Mount (1991) and Tett, Jackson and Rothstein (1991) were able to test in a new way the predictive validity of personality traits on work performance.

The Influence of the Situation

Another area of research that attempts to explain patterns of behavior within individuals focuses not on the traits of the individual, but on the influence that situational factors have on the individual. One of the strongest proponents of using situational factors to explain individual behavior is Mischel (1968) who makes the distinction between strong and weak situations. According to Mischel strong situations are those in which there are considerable demands or pressures made to induce conformity (Mischel, 1977). In such situations there is a relatively narrow range of behaviors that the person is expected to exhibit. Conversely in a weak situation there is a broad range of behaviors that is deemed acceptable and in these situations a person has considerable discretion in determining which behaviors to undertake. There has been much support for the contention that strong situations influence behavior more than weak situations (Ickes, 1982; Mischel, 1977; Snyder &
Ickes, 1982; Stagner, 1977) but is this influence a main effect on behavior or is it an interaction with personality?

**The Interaction Between Personality Traits and the Environment**

Personality researchers (Hogan, 1991) have focused on personality traits as the main influence on behavior, while Mischel (1968) initially argued that situational influences had a main effect on behavior. Later, Mischel (1977) altered his stance to suggest that situational influences interact with stable personality traits to effect behavioral outcomes. This position that the relationship between personality characteristics and behavior is moderated by the strength (or demands) of the situation has been supported by many others (Bern & Allen, 1974; Bern & Funder, 1978; Chatman, 1989; Mischel, 1977; Monson, Hesley, & Chernick, 1982; Stagner, 1977; Weiss & Adler, 1984). More specifically, the extent to which behavior is determined by personality is thought to increase or decrease based on the constraints put on that behavior by forces in the environment. Using Mischel’s (1977) conceptualization of strong and weak situations it could be predicted that the behavior of individuals with different personality traits will be less idiosyncratic in strong situations than in weak situations. The graphic representation of how personality characteristics might predict the behaviors that constitute work performance is provided in Figure 1.
Figure 1. The Moderated Predictive Relationship of Personality Traits on Work Performance

Stated in a general way this model suggests that the strength of the relationship between personality traits and work performance can be increased or decreased by situational forces. To gain a better understanding of and eventually test the model above it is first useful to review the personality trait – work performance literature to see more specifically which personality traits have been shown to predict work performance.

The Best Predictors of Work Performance

Barrick and Mount (1991) attempted to summarize the empirical research on the predictive validity of the big five personality traits for work performance, and reached one general conclusion. They found that the big-five personality characteristic of conscientiousness ($r^1 = .22$) was the best predictor of job performance across a large range of job types. The next strongest correlation was for extroversion, with an average across occupations of $r = .13$. The estimated true correlations for the remaining personality measures with job performance in their study was in a range between .03 and .08. These results clearly point to

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$^1$ All correlations given for Barrick and Mount (1991) are estimated true correlations which are corrected for both predictor and criterion unreliability.
conscientiousness as the best, and only significant predictor of work performance across occupations. As mentioned above, this article has been widely cited and is responsible for renewed interest in the predictive validity of big-five personality traits for work performance.

Another large-scale meta-analysis done to test the relationship between big five personality traits and job performance was authored by Tett, Jackson, and Rothstein (1991) and was published just months after the work of Barrick and Mount (1991). This work is cited much less often, possibly because of its more ambiguous findings. The findings of Tett et al. suggest that agreeableness \(r^2 = .33\), openness \(r = .27\), emotional stability \(r = -.22\), conscientiousness \(r = .18\), and extroversion \(r = .15\), all had small to moderate positive correlations with work performance.

The Tett et al. work did not display the same level of rigor as the Barrick and Mount (1991) meta-analysis. For example, Tett et al. included unpublished dissertations along with published works in their analysis. In addition, they included many studies that used interest and value inventories, which may not appropriately measure personality traits. The evidence that this study seems to have less rigor than Barrick and Mount's (1991) study, and the fact that this study provides support for the predictive validity for four of the five personality traits without specifying which should be used in what situation have both probably contributed to this study being less influential than the Barrick and Mount (1991) meta-analysis.

\[ \text{All correlations given for Tett et. al. (1991) are sample-weighted mean } r \text{ corrected for both predictor and criterion unreliability} \]
A third major meta-analysis was done by Hurtz and Donovan (2000) to further refine the earlier works, specifically the work of Barrick and Mount (1993). Hurtz and Donovan made a number of statistical refinements to the earlier work, but the more significant changes they made were methodological changes. For example, they were the first to complete a meta-analysis which included both the task and contextual components of performance (Motowidlo & Van Scotter, 1994). The way Hurtz and Donavan defined contextual performance was to use was Van Scotter and Motowidlow’s (1996) conceptualization, which they refer to as interpersonal facilitation. They also were careful to include only studies that used self-report measures of personality which were based on the big-five personality dimensions. Previous meta-analyses had included studies that categorized non-big-five measures into the big-five dimensions of personality, and this called into question whether they were really studying big five traits at all. Further complicating this trait categorization issue was the fact that the earlier meta-analyses included studies which used personality measures that were designed to detect psychopathologies instead of assessing variability in the personality traits of a normal population.

Along with offering these advancements, Hurtz and Donovan continued the efforts of the earlier meta-analyses (Barrick, Mount, & Strauss, 1993; Mount, Barrick, & Stewart, 1998; Salgado & Rumbo, 1997) in that they broke the results down by broad occupational categories. In doing this the authors hoped to determine if different traits were better predictors for different job types.

The findings of Hurtz and Donovan’s study indicate general support for the earlier findings of Barrick and Mount (1991). They found significant relationships
between overall performance and both conscientiousness \( (r = .22^* ) \), and emotional stability \( (r = .14) \). Following close behind these two with a nearly significant relationship is agreeableness with a true-score correlation of .13. When broken down by job type conscientiousness was still the best predictor of job performance in all four job types (sales, customer service, management, and skilled and semiskilled jobs), but the second best predictor changed in some of the groups. For example, extroversion was the second best predictor in the sales category \( (r = .15) \), and agreeableness is the second best predictor in customer service work \( (r = .19) \). Finally, when broken down by performance type Hurtz and Donovan (2000) found that conscientiousness was the best predictor of task performance \( (r = .16) \) but that agreeableness \( (r = .20) \) was the best predictor of contextual performance.

A fourth major study in this area was a quantitative review of the criterion-related validities of personality traits completed by Hough, Eaton, Dunnette, Kamp, and McCloy (1990). While not a meta-analysis, this review did use a variation of the big five traits that included six traits instead of five. Four of the personality traits, agreeableness, extroversion, openness to experience, and emotional stability (neuroticism from the positive pole) were the same as those used in the big five framework. Following the work of Hogan (1982) the fifth trait of conscientiousness was split into two separate traits, dependability and achievement. Dependability accounted for the part of conscientiousness that includes being responsible, organized and careful, and achievement included the motivational aspects of

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\(^{3}\) All Correlations for Hurtz and Donovan are true-score correlations which are corrected for both predictor and criterion unreliability.
conscientiousness often described as hardworking, and persevering. A seventh miscellaneous category was also used in this study to cover what the authors perceived as potential predictors such as locus of control and masculinity. The findings in this review found an uncorrected correlation of .13 between both adjustment (emotional stability) and job proficiency, and dependability (conscientiousness) and job proficiency. Later Salgado (1997) calculated that if these correlations had been corrected for measurement error and range restriction, as has been done in the other meta-analyses cited here, that their estimates of validity for adjustment and dependability on job proficiency would have been .23.

In the interest of generalizing the predictive validity of personality traits to cultures outside of North America, Salgado (1997) completed a meta-analysis which selected studies using only European samples. Based on the results of the three major previous studies (Barrick & Mount, 1991; Hough et al., 1990; Tett et al., 1991) Salgado hypothesized that conscientiousness and emotional stability would be the best predictors of job performance. His hypotheses were supported with results indicating a corrected correlation of .25 between conscientiousness and job performance, and a corrected correlation of .19 between emotional stability and job performance. These results matched Hough's (1990) results most closely, and provided the first large-scale meta-analysis which attempted to explore the predictive validity of personality measures using European samples.

In a follow-up study to their original meta-analysis Mount and Barrick (1995) looked more deeply at the relationship between conscientiousness and job performance. They completed a meta-analysis to determine if the separate
components of conscientiousness used by Hough et al. (1990) (i.e. dependability and achievement) were better predictors than the larger construct they represent. A key finding in this study was that their earlier study (Barrick & Mount, 1991) had most likely underestimated the correlation between conscientiousness and future work performance. In their more recent revision Mount and Barrick's (1995) results indicated a corrected correlation of .31 between conscientiousness and overall job proficiency. Each component of conscientiousness, achievement and dependability, revealed similar correlations with measures of overall job performance, those being .33 and .30 respectively.

Mount and Barrick suggested that the reason for the increase in the predictive validity of conscientiousness for work performance was in the method used to combine the separate components of conscientiousness in studies where separate measures of conscientiousness are used. Previous meta-analyses have simply averaged the validities for components, a procedure which most likely underestimates the validity of the conscientiousness construct. By using a composite score correction formula suggested by Hunter and Schmitt (1990) lower level component scores are combined so that raw scores are effectively summed into an overall conscientiousness measure. By using this composite measure Mount and Barrick (1995) feel that they had found a more accurate estimate of the predictive validity of conscientiousness for work performance.

Taken as a whole the studies cited above provide a fairly substantial empirical basis for the use of personality measures as predictors of job performance. Even with this relatively substantial support there is certainly room for improvement.
and thus personality researchers have continued to look for situational factors that may moderate the personality trait – job performance relationship.

Exploring the Moderating Effects of Situational Factors

While the summaries of previous empirical work done by both Barrick and Mount (1991) and Tett et al. (1991) were successful in finding support for the personality-work performance relationship, they obtained correlations that are still considered moderate in an absolute sense. Because of this somewhat limited success in finding support for the predictive relationship between personality and work performance, Barrick and Mount and others have continued a line of research that has attempted to identify moderators of the personality-work performance relationship.

Barrick and Mount (1993) explored the moderating effects of autonomy on the conscientiousness-work performance relationship. The authors reason that conscientious employees will have a greater opportunity to behave in a conscientious way (i.e. they will be responsible, careful, persevering, orderly, hardworking, and planful) if they are provided greater autonomy in their work. Their study was done in a field setting, using a sample of military middle managers and front line supervisors. Measures of personality traits were given to the participants and they were compared with their supervisor's ratings of work performance using a measure that broke work performance into eight dimensions. Job autonomy was measured by a 6-item scale that was given to both the job incumbent and the supervisor. The results of these two autonomy measures were averaged to gain a more accurate rating of job autonomy from two perspectives.
Barrick and Mount did in fact find support for their contention that autonomy does moderate the personality-work performance relationship, indicating that understanding levels of autonomy in a given job may be an important factor when using personality characteristics for selection into that job. This study is probably the best example to date of a test of the relationships in Figure 1 above. It includes conscientiousness, which has been shown to be one of the most valid predictors of work performance, and also includes the situational variable that may provide the best overall measure of the strength of the situation, autonomy.

To explore the nature of the interaction between conscientiousness and autonomy Barrick and Mount regressed performance on conscientiousness for three different levels of autonomy. Using the procedure recommended by Cohen and Cohen (1983) high, average, and low regression lines were plotted one standard deviation above the mean, at the mean, and one standard deviation below the mean respectively. They found that the slopes were steeper as autonomy increased, indicating that as the level of autonomy increased conscientiousness was a better predictor and hence had higher validity in jobs where autonomy was high.

In a meta-analysis completed by Mount, Barrick, and Stewart (1998) job type was explored as a potential moderator of the personality-work performance relationship. In this study the authors hypothesized that the personality traits of conscientiousness, agreeableness, and emotional stability would be positively correlated with performance in jobs involving interpersonal interactions. They further broke down the type of interactions into dyadic interaction where employees were providing a service to another employee or customer, and team interactions
where employees needed to interact with other employees to complete their assigned work. Four of the samples of the 11 chosen for the meta-analysis represented team interaction, while the remaining 7 represented dyadic service. The results of the study indicated that while all three hypothesized personality characteristics (conscientiousness, agreeableness, and emotional stability) were valid predictors of overall performance in both dyadic and teamwork settings, that agreeableness and emotional stability were better predictors of performance in jobs that involve teamwork. The true score correlations for conscientiousness, agreeableness, and emotional stability in dyadic service settings were .29, .13, and .12 respectively while in jobs where teamwork was required the true score correlations were .21, .33 and .27 respectively. These findings show that personality traits other than conscientiousness are important for work performance, and that job type can be a moderator of the personality – work performance relationship.

Robie and Ryan (1999) looked at performance monitoring as a moderator of the relationship between conscientiousness and work performance. They defined performance monitoring as the act of observing and recording worker performance and was thought to measure Mischel’s (1977) conceptualization of the strength of the situation in the work setting (c.f. Barrick & Mount, 1993) and was intended to test the interactional model proposed by Mischel (1977). The authors hypothesized that higher levels of performance monitoring will act to strengthen the cues that are given by the situation. Thus, Robie and Ryan suggested that those higher in conscientiousness would exhibit greater work performance than their less conscientious counterparts when performance monitoring was low. Low
performance monitoring was compared to Barrick and Mount's (1993) earlier conceptualization of increased autonomy, and Robie and Ryan predicted their results would be similar to those of Barrick and Mount's earlier findings. The task, which the student participants were asked to perform in this study, was a simple data entry task with only five numbers per string to be entered. The use of the computer simplified the measuring of task performance. Of the two factors that were extracted from the six computer recorded variables they determined that one measured motivational aspects of performance, this measure was used as the measure of task performance.

Contrary to their hypothesis, Robie and Ryan found that those higher in conscientiousness performed better when they were being monitored (the proposed strong situation) than when they were not being monitored (the proposed weak situation). They also found that those low in conscientiousness exhibited relatively low performance in monitored and non-monitored conditions. This finding was counter to their hypothesis concerning the effects of a strong situation, and counter to the previous findings of Barrick and Mount (1993). There are a number of ways to interpret the findings in this study. One possibility is that various flaws in the study prevented the expected results from occurring. Another possibility is that performance monitoring is not a good proxy for strength of the situation. Instead, given the pattern of results provided by Robie and Ryan's work it seems that higher levels of performance monitoring do not imply a stronger situation as lower levels of autonomy were found to be by Barrick and Mount (1993). The current author would suggest that because higher levels of performance monitoring had an effect that was
completely opposite to the one predicted by Robie and Ryan, that it should be labeled as an observer effect. Using the findings of Robie and Ryan’s study as a basis it could be suggested that observer effects do not include all of the same cues as would be provided by a strong situation. Thus, if the findings of Robie and Ryan are not due to methodological error then one could predict in future studies that those high in conscientiousness would have higher task performance if they knew they were being observed than if they were not being observed. By looking at the result of another study it may be possible to find additional support for this interpretation.

A moderator that is similar to performance monitoring is accountability. Frink and Ferris (1999) conducted a study that looks at the moderating effects of accountability on the conscientiousness-work performance relationship. They focus on responsibility as a main component of conscientiousness, and make the point that the more conscientious a person is, the more responsible they feel for their actions. In addition to the personality characteristic of conscientiousness, the authors are interested in the moderating effects of the situational factor of accountability. They define accountability as: “the evaluation of one’s decisions or actions by some audience, either internal (to the person) or external, and this audience has salient reward or sanction power” (Frink & Ferris, 1999, p.516). The authors do not cite Mischel’s (1977) strong versus weak situation conceptualization, but instead use Tetlock’s Social Contingency Model (1985; 1992) which, like Mischel’s framework, holds that situational factors (specifically accountability) moderate the personality-performance relationship. More specifically, Tetlock’s Social Contingency Model suggest that people are politicians and as such decide how to behave so that they are
able to win the favor of those to whom they are accountable, or more generally to those in their environment. Thus, for Tetlock accountability summarizes the effect that other people's thoughts and beliefs about us have on our behavior. Mischele's conceptualization of environmental effects is more general because it includes both the expectations of people in our environment, and other environmental cues including things like setting (e.g. work as opposed to home) and time of day (e.g. daytime as opposed to evening).

In their study Frink and Ferris had student participants complete relatively simple math and verbal problems, which helped control for the individual differences in verbal and math skills. Accountability was imposed on some of the participants by telling them that they would have to meet with a team leader who would question them about their performance and contribution to their assigned team. The reward or sanction power that the external evaluator (team leader) had over the participant was the conference of status and approval conveyed by a perceived expert. It is widely accepted in social behavioral research that all people have a basic desire for status and approval, and this need is a fundamental tenet of Tetlock’s Social Contingency Model.

Frink and Ferris found that those high in conscientiousness exhibit higher levels of task performance when they are held accountable than when they were not. Frink and Ferris had hypothesized that the conscientiousness – performance linkage would be strengthened by increased levels of accountability. Because of the different framework used by Frink and Ferris (i.e. Tetlock’s Social Contingency Model) they were able to better summarize and predict the behavioral outcomes in
their research than Robie and Ryan were in theirs using the strong/weak situation framework. The findings of Frink and Ferris (1999) support the current author’s contention of the effect that an observer has on the conscientiousness–work performance linkage. More precisely, while an observer may provide strong cues within a situation that influence behavior, he or she does not provide a complete set of cues that can define the entire situation. Thus, the effect of the situation should be measured more completely (and because of this more accurately) by a broader construct like autonomy.

Both of these studies (Frink & Ferris, 1999; Robie & Ryan, 1999) share a similar weakness in that work performance is operationalized by the number of relatively simple problems answered correctly by students in a laboratory setting. This operationalization of job performance raises the question of generalizability to a more realistic work setting, but the similarity of the findings between these two studies supports the effect and the relative importance of these two moderator variables, which seem to indicate the effect observation has on conscientious employees.

Finally, in this relatively rich strain of research looking at moderators of the personality–job performance relationship is a work by Hochwarter, Witt, and Kacmar (2000). In their research they looked at perceptions of organizational politics as a moderator of the relationship between conscientiousness and job performance. High levels of organizational politics are operationalized in this study as when others in the organization are seen as not openly sharing critical work-relevant information, not providing clearly established objectives, and not promoting normative guidelines.
for decision-making. The authors proposed that the uncertainty created by these behaviors provides a challenge for employees attempting to perform well in their jobs. They hypothesized that perceptions of organizational politics will moderate the conscientiousness – performance relationship. Specifically they predicted that workers high in conscientiousness would perform better when they perceive higher levels of organizational politics, and conversely workers low in conscientiousness will perform worse when they perceive organizational politics.

The participants in this study were 813 employees from four different organizations including a distribution services organization, a production organization, three telemarketing call centers within an organization, and a systems development organization. Measures of conscientiousness and perceptions of organizational effectiveness were taken through self-report instruments. Measures of job performance were completed for each participant by their supervisor, and each measure was based on different criterion based on the job analysis for each of the four samples (each from a different organization).

The findings of this study indicate that more conscientious workers have higher levels of performance than less conscientious employees in organizations where organizational politics is perceived to be average or high. Conversely, it was found that conscientious employees did not outperform less conscientious employees in organizations with lower perceived organizational politics. In summary, Hochwarter, Witt, and Kacmar (2000) find support for the idea that more conscientious employees are more persevering and disciplined in overcoming
perceived organizational politics, and thus are more successful in achieving higher levels of job performance.

While all of these studies provide valuable information about the relationship between personality and work performance the two studies that most accurately measure and add to our understanding of the strength that the situation imposes are the studies by Barrick and Mount (1993) which deals with the moderating effects of autonomy, and the study by Mount, Barrick and Stewart (1998) which looked at job type as a moderator between big five personality traits and job performance. In the following section rationale is provided for why autonomy and job type are crucial factors in better understanding the personality-work performance relationship.

**Autonomy as a Measure of Situational Strength**

In Barrick and Mount's (1993) study autonomy is defined as “the degree of discretion the respondent (employee) has in selecting appropriate work behaviors, deciding the order and pace of job tasks, and coordinating those activities with others” (p.114). By using this definition the authors make clear that autonomy is used as a variable in attempt to capture the strength of the cues that the situation provides. As in the case of previously mentioned studies that address situational factors that effect employee behavior (Frink & Ferris, 1999; Hochwarter et al., 2000; Robie & Ryan, 1999) the authors are trying to understand the effects of situational forces on employee behavior.

**Strong situations generate relatively uniform expectancies of what is appropriate behavior (Mischel, 1977).** In a strong situation, desired behavioral
responses are rewarded, and normative expectations are clearer than those in a weak situation. In addition, strong situations generally provide an environment where learning how to perform desired behaviors is supported and encouraged. A weak situation on the other hand does not provide clear incentive, support, or normative expectations of behavior. When in a weak situation individuals do not share a common perception of what is expected of them, thus the strength of a situation can be determined by the consistency of individuals’ perceptions of appropriate behavior.

Using this conceptualization of situations Mischel (1977) suggested that strong situations constrain the expression of personality. As mentioned previously, Mischel suggests that in strong situations behavior is more a function of the situation, while in weak situations behavior is determined more by an individual’s predispositions or personality. In the organizational setting Hough and Schneider (1996) have proposed that personality traits are more strongly related to job performance in weak settings as opposed to strong settings. Various constructs have been used in the previously reviewed research to represent situational variables that moderate the personality work performance relationship. After reviewing these studies it becomes evident that the situational influences as described by Mischel’s (1977) framework are best represented by the autonomy construct used by Barrick and Mount (1993) and developed in earlier literature (Hackman & Oldham, 1976; Lee, Ashford, & Bobko, 1990; Peters, Fisher, & O'Connor, 1982; Steers & Spencer, 1977). It also seems relatively clear after the above review that performance monitoring (Robie & Ryan, 1999) and accountability (Frink & Ferris, 1999) are
tapping into a different construct than autonomy. Since performance monitoring and accountability do not moderate the personality characteristic-job performance relationship in the same way that autonomy was shown to earlier by Barrick and Mount (1993), it is reasonable to surmise that these constructs are tapping into something different than situation strength. As proposed earlier in this review of the literature observer effects may be narrower in scope than autonomy in measuring the strength of the situation (Mischel, 1977), but at the very least they are constructs which have been empirically differentiated.

In addition to being a better measure of the strength of the situation, autonomy has the added advantage of being able to measure different sources of situational constraint by using only one construct. Where observer effects tap into the effects of an observer in the situation, autonomy may be broader. For example, autonomy has the potential to come from two different sources in the workplace. Freedom to do one's job can be provided by one's manager, as a manager can allow an employee great latitude in doing his or her job, but autonomy can also be considered a characteristic of a given job. A long line of research spawned by Hackman and Oldham's (1976; 1980) Job Characteristics Model specifies that autonomy is a characteristic that can be designed into jobs. By measuring autonomy researchers can better understand the freedom of discretion an employee feels in a given job regardless of the source of that freedom. Because it measures the freedom designed into a job and the freedom provided by the manager, autonomy is currently the best available proxy for the situation's influence on a person's behavior.
Job Type and Job Fit

Job type as dealt with by Barrick, Mount, and Strauss (1993) and Mount, Barrick, and Stewart (1998) is the other important factor in better understanding the personality-work performance relationship. By considering job type it is possible to keep track of how certain personality characteristics do a better job of predicting performance in certain types of jobs. The challenge of understanding how personality and job characteristics operate together has been addressed by two separate literatures, the personality literature and the job design literature. The job design literature referred to here is the literature on the Job Characteristics Model (Hackman, Brousseau, & Weiss, 1976; Hackman & Oldham, 1980).

Most of the studies in the job characteristics literature have taken a different approach to job fit than the studies in the personality literature. The job characteristics studies have, as its name implies, focused on categorizing the different characteristics of the job, and de-emphasized the characteristics of the people in the job. The Job Characteristics Model developed by Hackman and Oldham (1976; 1980) specifies five job characteristics (skill variety, task identity, task significance, autonomy, and feedback from the job), and one stable trait that can be interpreted as a personality characteristic which is labeled growth need strength. This need, as with other needs, is not a fully defined personality trait but does deal with parts of personality in that it addresses a need that is generally stable over long periods of time if not throughout life (Hackman & Oldham, 1980). By talking in a general way about how people with either strong growth needs or weak growth needs may behave, Hackman and Oldham are making some tacit acknowledgement
of the stability of growth need strength and its attempt to measure the character of the person or a portion of a person's personality. In this way Hackman and Oldham allow that the prescriptions made by their Job Characteristics Model will work better for some people than for others, depending on their personal characteristics.

In an extensive meta-analysis Fried and Ferris (1987) found support for the moderating effects of growth need strength on the job characteristics-job performance relationship. Interestingly, Hackman and Oldham (1980) define growth need strength as a need "for personal accomplishment, for learning, and for developing one's self beyond where they are now" (p.85). All of these qualities indicate internal motivation, and this definition corresponds in many ways with the definition of conscientiousness, which includes being responsible, organized, and internally motivated (Costa & McCrae, 1988; Digman, 1990). The common definitional components between growth need strength and conscientiousness speak to the importance of internal motivation. While conscientiousness is a more fully developed personality construct, with greater empirical support for its predictive validity, it is noteworthy that the authors of the Job Characteristics Model have also acknowledged the importance of measuring a construct that taps into internal motivation just as conscientiousness does.

The personality literature on the other hand focuses primarily on measuring the characteristics of the person, and uses this information to try to predict if that person will perform well in the work setting. While the conscientiousness factor has seemingly provided an overall predictor of job performance its correlation with overall work performance is, as mentioned above, moderate at best (Barrick &
Mount, 1991; Tett et al., 1991). In an attempt to see if specific personality characteristics help predict job performance in certain types of jobs Barrick, Mount and Strauss (1993) tested their previous finding (Barrick & Mount, 1991) that extroversion would predict work performance in sales representatives. Unfortunately, they did not find support for this relationship. Later, in a study that looked at a broad range of personality characteristics, Mount, Barrick, and Stewart (1998) attempted to see how the personality characteristics of conscientiousness, agreeableness, and emotional stability might help predict job performance in jobs of involving interpersonal interactions. In this study, where matching personality characteristics to job type was the central focus, they did in fact find that emotional stability and agreeableness added predictive power to conscientiousness as predictors of performance in jobs that involve higher levels of interpersonal interaction. It seems reasonable to suggest that the second study (Mount et al., 1998) was more successful in finding a match between personality characteristics and job characteristics because in this study specific job characteristics and personality characteristics were actually identified for matching as opposed to simply identifying a job category (i.e., sales representatives) and then attempting to match personality characteristics with this job category. The reason that matching personality characteristics with a job category is not necessarily viable is that it is possible that many jobs within the same category will not share similar characteristics.

So while the personality researchers tacitly acknowledge the importance of job characteristics by making them moderator variables in their research, and conversely the job design researchers acknowledge the importance of personality by
including growth need strength in their model, neither group has acknowledged the primary importance of matching personality characteristics with job characteristics. One of the purposes of this work is to continue the exploration of how work performance may be predicted by matching personality characteristics with at least one crucial job characteristic, that of autonomy.

The Importance of Self-efficacy

There are two reasons why self-efficacy as conceived by Bandura (1977; 1986) may make valuable contributions to the overall understanding of the personality trait - work performance relationship. First, self-efficacy has some conceptual and definitional overlap with conscientiousness. By focusing on their overlapping qualities it might be possible to better understand how conscientiousness and self-efficacy influence work performance. This conceptual overlap would not be interesting in the context of this study if it were not for the second reason that self-efficacy should be considered here, and that is that self-efficacy is a valid predictor of work performance. By including self-efficacy in a personality - work performance model it may be possible to better understand, and measure any conceptual overlap between conscientiousness and self - efficacy, and it will also be possible to compare their predictive validities using the same sample.

The Conceptual/Definitional Overlap Between Self-efficacy and Conscientiousness

To further explore the potential relationships between conscientiousness and self-efficacy it is helpful to review Bandura’s definition of self-efficacy. As conceptualized by Bandura (1986) self-efficacy is:
people's judgments of their capabilities to organize and execute
courses of action required to attain designated types of performances.
It is concerned not with the skills one has but with the judgments of
what one can do with whatever skills one possesses. (p. 391)

By this definition self-efficacy becomes self-beliefs (cognitive processes) that have strong influences on a person's level of motivation before and during a given task or behavior. More specifically, these self-beliefs will determine if task behaviors will be initiated, how much task-related effort is expended, and how long this behavior will be sustained despite disconfirming evidence. Individuals who perceive themselves to be highly efficacious will tend to choose to initiate a given task behavior, and then expend the level and duration of effort necessary to successfully complete the task. Alternatively those who perceive low self-efficacy are likely to cease their efforts prematurely and fail at their given task (Bandura, 1994). By this definition it is clear that one's level of self-efficacy can indicate one's level of motivation and persistence. In comparison, conscientiousness includes two major components: dependability, which can be characterized as being careful, thorough, responsible, organized, and planful; and volitional components such as hardworking, achievement oriented, persevering. This second component is the one that may give an indication of a person's general level of motivation in a similar way that levels of self-efficacy might. The volitional qualities of conscientiousness were empirically demonstrated in the previously reviewed study by Hochwarter et al. (2000). One of the main conclusions of this study was that more conscientious employees displayed higher levels of motivation and perseverance to overcome higher levels of
organizational politics. While it is beyond the scope of the current work to fully test and explore the relationship between conscientiousness and self-efficacy, the definitional similarities between these two constructs suggests the usefulness of beginning to test and understand the relationship between them.

Very little empirical work has been done to test the relationship between self-efficacy and the big five personality traits. One of the few examples is a study by Thoms, Moore and Scott (1996), which looked at the relationship between big five personality constructs and self-efficacy for working in self-managed groups. The findings of this study indicate that emotional stability, extraversion, and conscientiousness significantly correlated with self-efficacy for participating in self-managed work groups. This specific type of self-efficacy addresses one’s judgment of one’s ability to work together with others in a group to complete work tasks. The focus of the current study is not self-efficacy for working in groups but instead self-efficacy for accomplishing one’s primary job tasks, thus the correlations found in the current study could show different patterns.

Self-efficacy as a Predictor of Work Performance

While understanding the conceptual overlap between self-efficacy and conscientiousness may be helpful in explaining why self-efficacy is a valid predictor for work performance, the more important question to be answered first is can self-efficacy be a valid predictor of work performance? In a recent meta-analysis Stajkovic and Luthans (1998) reviewed and analyzed the literature which has examined the relationship between self-efficacy and work performance. The results of this meta-analysis produced a weighted average correlation (adjusted for sample
size outliers and extreme variables) of .38 as the magnitude of the relationship between self-efficacy and work performance. This result suggests that there is a stronger relationship between self-efficacy and performance than many studies have found between conscientiousness and performance. This finding addresses the main purpose of this study, which is to find valid predictors of work performance, and makes the conceptual overlap between conscientiousness and self-efficacy relevant to this purpose.

Other than finding valid predictors of work performance there is another more practical reason to include self-efficacy in this study. The only applied purpose of using personality characteristics to predict work performance is in personnel selection because personality characteristic are thought to be stable (or even unchangeable). Self-efficacy on the other hand has been shown to be malleable. What this means in an applied setting is that a training and/or development intervention could potentially be used to increase self-efficacy, which in turn could have a positive effect on the work performance of current organizational members. Measures of self-efficacy could also be used for selection purposes, giving them a broader range of applied uses than measures of personality traits.

Up to this point, attention has been focused on the predictors of job performance and not on performance itself. Most of the research conducted to date that explores the predictive validity of personality traits on job performance has focused on task performance. Recent conceptual work (Borman & Motowidlo, 1993) and empirical studies (Motowidlo & Van Scotter, 1994) have shown that
contextual performance is not only distinguishable from task performance but also makes an independent contribution to overall work performance. In the next section the difference between task and contextual performance will be explained and the empirical research concerning these two types of performance will be reviewed.

**Differentiating Task and Contextual Performance**

The differentiation between task and contextual performance domains in the work setting has become an important issue to those who study work performance in organizations. Task activities involve the direct and indirect creation of organizational products (Borman & Motowidlo, 1993). In a manufacturing setting this would include the processes in which raw materials are transformed into products. In a service setting task activities would refer to the delivery of services provided by the organization. For example, in an accounting firm this would include all activities that in some way provided accounting services to a client, and in a healthcare setting this would include all the decisions made and actions taken to heal patients.

Contextual performance by contrast includes all activities that support the organizational, social, and psychological environment in which the task activities take place. Contextual activities include five categories of behaviors identified by Borman and Motowidlo (1993). These categories are: volunteering to carry out task activities that are not formally part of one’s job; being persistent and enthusiastic in completing one’s own task activities; helping and cooperating with others; following organizational rules and procedures even when it is personally inconvenient; and endorsing, supporting, and defending organizational objectives. One commonly
used way to distinguish between task and contextual activities is that contextual activities are often not part of the formal job description.

Task activities make an obvious connection to work performance because these activities directly contribute to the production of products and services provided by an organization. But why is it important to distinguish between task and contextual performance? The answer to this question is that task and contextual performance have been shown to make individual contributions to overall work performance (Motowidlo & Van Scotter, 1994). There have been other constructs that have been proposed to cover the performance outside of task performance including organizational citizenship behavior (Bateman & Organ, 1983; Organ, 1988; Smith, Organ, & Near, 1983) and prosocial organizational behavior (Brief & Motowidlo, 1986). While neither one of these constructs overlap completely with contextual performance they do contain similar components. The reason that contextual performance has been chosen for this study over these other constructs is that Organ (1997) recently suggested that it is the most useful and applicable construct to use when the focus is on performance in the workplace.

While there are still only a few empirical studies linking contextual performance to organizational effectiveness, Borman and Motowidlo (1993) make some assumptions based on logic that different types of organizations would tend to place greater value on specific categories of contextual performance. For example, service companies because of their emphasis on dealing with customers would probably emphasize those components of contextual performance where the employee will go beyond their required tasks to please the customer. Similarly,
service companies would more than likely have special requirements for contextual activities where employees show enthusiasm for their work and represent the organization in a positive way to outsiders. Team-oriented organizations might have special contextual performance requirements that involve helping and cooperating with others. By contrast, more conservative, bureaucratic organizations might place an increased emphasis on the compliance with rules and procedures dimensions of contextual performance. While it may be possible to determine that some organizations place a greater emphasis on certain contextual activities, it is also logical that most or all organizations would generally benefit from the contextual activities of increased involvement in one’s work and the increased effort and responsibility that high contextual performers exhibit in their work.

Based on the empirical work by Motowidlo and Van Scotter (1994), which found that contextual performance is an independent contributor to overall supervisor performance ratings, and the logical connections that organizational effectiveness has with different types of contextual performance it is useful to include contextual performance in the model explored in this study. Before including contextual performance in a model that attempts to use personality constructs to predict work performance let us first briefly review the empirical findings that speak to the question of which personality constructs are the best predictors of contextual performance.

The empirical findings linking personality characteristics to contextual performance are sparse at best (Lyne, Sinclair, & Gerhold, 1997; McManus & Kelly, 1997; Van Scotter & Motowidlo, 1996), and only one study found by this author
actually attempted to link big five personality characteristics and contextual performance (Van Scotter & Motowidlo, 1996). In this study 975 U.S. Air Force mechanics were rated by their supervisors on both task and contextual performance (different supervisors rated different types of performance in an attempt to prevent halo effects in rating). These ratings were then correlated with self-report predictor measures including the big five personality traits of conscientiousness, extroversion, and agreeableness.

The findings of Van Scotter and Motowidlo (1996) indicate significant positive relationships between the personality traits they tested (conscientiousness, agreeableness, and extroversion) and contextual job performance ratings. Agreeableness (.16) showed the strongest correlation with contextual performance followed in order by conscientiousness (.11), and extroversion (.09). Unfortunately, openness and emotional stability were not included in this study and so their relationship with contextual performance was not tested. While this is only one study it does provide support for two of the personality – work performance relationships that have been identified by earlier works as relevant to this research.

The Model

Using personality traits to predict work performance implies a model that is helpful in articulating the relationships that have been suggested above. This model includes personality traits that are thought to correlate with task performance, and some of the relationships between these traits and work performance, as suggested

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* All correlations given for Van Scotter and Motowidlo are zero order correlations
by earlier literature, are moderated by autonomy. In addition, self-efficacy is also included in this model in an attempt to see how it is related to both conscientiousness, and task and contextual performance. See Figure 2.

![Proposed Model of Trait Predictors of Task and Contextual Performance](image)

**Figure 2. Proposed Model of Trait Predictors of Task and Contextual Performance**

This study includes two samples in the service sector where dyadic interaction with others is a crucial part of their job. In jobs where dyadic interaction is a crucial part of the work, Mount, Barrick and Stewart (1998) have previously found that emotional stability and agreeableness are correlated with overall work performance. In addition conscientiousness has been found in many studies to be correlated with work performance (Barrick & Mount, 1991; Barrick & Mount, 1993;...
Barrick et al., 1993; Tett et al., 1991). In addition, the findings of Van Scotter and Motowidlo (1996) will be followed concerning the relationship between personality characteristics and contextual performance. The hypotheses are expressed in terms of unique influence because the model will be tested as a whole allowing the paths represented in the model above to represent the unique influence of each personality trait on work performance over and above that of the other predictors. The hypotheses are as follows.

Hypothesis 1: Conscientiousness will have a positive unique influence on task performance.

Hypothesis 2: Conscientiousness will have a positive unique influence on contextual performance.

Hypothesis 3: Agreeableness will have a positive unique influence on task performance.

Hypothesis 4: Agreeableness will have a positive unique influence on contextual performance.

Hypothesis 5: Emotional stability will have a positive unique influence on task performance.

Hypothesis 6: Emotional stability will have a positive unique influence on contextual performance.

Hypothesis 7: The unique influence of conscientiousness on task performance will be stronger as the level of autonomy in that job increases.
Hypothesis 8: The unique influence of conscientiousness on contextual performance will be stronger as the level of autonomy in that job increases.

To test the possibility that conscientiousness and self-efficacy are related, it is the intention of this research to compare measurements of these two variables to begin to determine how they may be related, and to determine which variable may have a stronger relationship with task and contextual performances. Based on the definitional similarities between conscientiousness and self-efficacy the following is proposed:

Hypothesis 9: Conscientiousness and self-efficacy will be positively related.

Hypothesis 10: Self-efficacy will have a positive unique influence on task performance.

Hypothesis 11: Self-efficacy will have a positive unique influence on contextual performance.

Hypothesis 12: The unique influence of self-efficacy on task performance will be stronger as the level of autonomy in that job increases.

Hypothesis 13: The unique influence of self-efficacy on contextual performance will be stronger as the level of autonomy in that job increases.

The purpose of testing the relationship between self-efficacy-performance and the conscientiousness-performance relationship is to better understand which has the strongest relationship with performance. After reviewing the literature it appears that the relationship between these two constructs and performance has been tested separately and submitted to meta-analysis, but they have not been compared side-by-side.
side using the same sample. It is one of the aims of this study to conduct this more
direct comparison between these constructs, which have common components in
their definitions.
CHAPTER 2

RESEARCH METHODS

Sample

The sample for this study consisted of 123 nurses employed by a large midwestern hospital. Sixty-six of the participants were home health care nurses of which sixty-one were women, and five were men. The remaining fifty-seven nurses worked in the hospital and fifty-five of them were women. For the overall sample the managers had been supervising these nurses an average of just over three years. If a manager had supervised a nurse for less than nine months the nurse was not included in the study because it was thought that the manager may not have enough experience with the nurse to accurately rate her performance. Of the nurses asked to participate all but two did so, making the response rate 98.4%

The reason for selecting nurses from these two settings (i.e. hospital and homecare) is that it was projected that they would differ at the group level on the amount of autonomy they experienced in their jobs. In addition, the samples were selected in such a way as to match them on as many other variables as possible to minimize confounding variables. Both samples were members of the same organization, and both samples (hospital and homecare) provide roughly the same
skill level of nursing care to their patients. All participants are medical-surgical
level nurses who have the common tasks of taking vital signs, administering
medications (oral, intravenous, and topical), changing dressings on wounds, and
teaching the patient and other caregivers how to properly achieve and maintain his or
her optimal level of health. The decision was also made to include only Registered
Nurses in this research for two reasons. First Registered Nurses are subject to longer
training programs (a minimum of three years of schooling) and thus should be more
likely to be familiar with, and more likely to follow the basic nursing framework that
is the basis of the nursing self-efficacy measure. The second reason for choosing
having only Registered Nurses as participants is to maintain as much homogeneity in
the sample as possible. Finally, a post data collection check was done to determine
the average tenure of the hospital and homecare sub-samples. The average tenure of
the hospital nurses in their current position was 3 years and 9 months, while the
average for the homecare nurses was 1 year and 11 months. Some of the difference
between the tenure of hospital and homecare nurses is due to the relatively recent
growth in homecare nursing.

Procedure

The participants completed a questionnaire containing a personality
inventory, a scale measuring autonomy in their job, and a measure of self-efficacy
(see Appendix A). The questionnaires were administered to the hospital nurses in a
meeting room on the floor where they worked, and to the homecare nurses in a
meeting room in the homecare office. The homecare nurses were asked to
participate in the research at nursing team meetings and the hospital nurses were
asked at either floor meetings or during their normal work hours. Participation in the study was voluntary. After the participants agreed to participate by reading and signing the consent form attached to the front of the survey, the immediate supervisor of the participant was asked to complete a 9-item work performance rating scale for the participant at their earliest convenience. These work performance rating forms were usually completed and returned within two days of being given to the supervisor.

Measures

*Personality traits.* The personality measure that was used was the NEO Five Factor Inventory (NEO-FFI; Costa & McCrae, 1991), which measures openness to experience, conscientiousness, extraversion, agreeableness, and emotional stability (see Appendix A). Even though the extroversion and openness scales were not used in this research it was decided to leave them in place as distracter items so that the research questions that were the focus of the study would be less apparent.

*Autonomy.* Autonomy is measured using a 7-item questionnaire (see Appendix A). Three of the items were selected from the Job Diagnostic Survey (Hackman & Oldham, 1975). The items chosen from this survey have extensive empirical support for their validity and reliability in measuring the overall autonomy provided in a given job. Four more items were developed by referring to the definition of autonomy provided by Hackman and Oldham (1976; 1980). The reason for creating these new items was to measure the potentially independent sources of autonomy provided by the design of the job, and by the actions of the supervisor.
**Self-Efficacy.** The self-efficacy measure is specific to the profession of nursing (see Appendix A). Three nurses and five nurse managers acted as subject matter experts to identify a basic framework for the job of nursing. These nurses and nurse managers were made up of a convenience sample that included four homecare nurse managers, two homecare nurses, one hospital manager and one hospital nurse. The reason for getting more input from the homecare nurses is that the basic framework used as the basis of the self-efficacy scale was developed prior to the more widespread use of homecare nurses, and thus its utility in the hospital setting was not questioned as much as its use in homecare. The goal in identifying this framework was to find a basic set of objectives that can be generalized across both homecare nursing and hospital nursing.

The framework selected by the expert panel is applicable to all types of nursing. It is called the nursing process model and consists of four basic steps: assessment, planning, implementation, and evaluation. Assessment includes gathering data on a patient through taking a history, making a physical examination, and collecting laboratory data, and then interpreting all of this data to make a nursing diagnosis. Planning involves creating a nursing care plan by determining client goals and selecting nursing treatments or actions to meet those goals. Implementation is where all of the components of the nursing care plan are completed. Finally, evaluation occurs by establishing criteria with which to judge the effectiveness of the nursing actions performed, and then using these criteria to determine if the actions have had their desired effect. If the completed nursing plan
has not achieved its desired outcome it is possible to return to the assessment stage
to gather more information and start the nursing process over again.

Nine statements were created that covered aspects of each of the four steps of
the nursing process. More specifically, there are two statements for each of the
assessment, planning, and evaluation steps, and three statements for the
implementation step. For each statement respondents were to indicate their
confidence in their ability to complete that task using a 5-point scale. In addition to
these nine items covering the nursing process, three additional statements were
created to measure a nurse’s self-efficacy to handle emergency cases or out of the
ordinary problems. These emergency situations were included because such
situations are a part of nursing, and the goal here is to measure the participants’
overall self-efficacy for nursing work.

Performance ratings. A 9-item performance appraisal scale was completed
for each participant by his or her immediate supervisor (see Appendix B). Two
subscales were included in the overall performance scale, one for task performance
and one for contextual performance. Three of the nine items measured task
performance including items covering technical nursing skill, meeting patients’
medical needs, and completing administrative tasks (see Appendix B). The
remaining six items were derived directly from the definitions of the five categories
that make up Borman and Motowidlo’s (1993) definition of contextual job
performance (see the section on contextual performance in the introductory chapter
of this paper for definitions of Borman and Motowidlo’s five categories of
contextual performance).
Because this performance scale was developed specifically for this sample, and because there were only general guidelines around which to build this scale, further testing of the scale was warranted. A confirmatory factor analysis was completed to make sure that the items loaded on the factor they were intended to measure, either task or contextual performance.

Data Analysis

The data collected using the instruments described above was analyzed using structural equation modeling. One of the key advantages of this method is that it allows all of the main effect relationships in the model in Figure 2 above to be tested concurrently. The statistical package used for this analysis was RAMONA which is a part of SYSTAT version 10.

Prior to completing the analysis an a priori power analysis was completed to determine the number of participants needed to detect an average effect size. Since structural equation modeling will be used to assess the fit of the overall model, root mean square error of approximation (RMSEA) will be used as an indicator of model fit. RMSEA is also used in the a priori power analysis. Specifically, a power analysis was conducted to determine the number of participants that would be needed to detect an RMSEA of .08 in a model that actually has an RMSEA of .08 or larger. This level of RMSEA was chosen because it represents the cutoff for moderate or fair fit of the model. While some researchers choose to use RMSEA of .10 as the cutoff for determining fair model fit, setting the rejection level at the more conservative figure of .08 would provide a higher estimate of the number of
participants needed to detect a poor model fit, if in fact the model was a poorly fitting one.

Using the desired level of RMSEA (.08), and the number of free parameters in the model (261) it was determined that the number of subjects needed to reject a poorly fitting model was 72. This is the number of participants at which the minimum desired level of power was achieved. It should be noted that the number of free parameters used in this calculation was based on a model that excluded the moderating effects of autonomy, because those effects cannot be analyzed by structural equation modeling.

**Moderator Analysis**

Two types of moderator analysis are conducted. The first type of analysis treats autonomy as a continuous variable and is done using moderated regression analysis since moderator analysis is not possible in current computer programs that offer structural equation modeling. Moderated regression is done to test for the moderating effects of autonomy on the relationships between conscientiousness and both task and contextual performance and on the relationships between self-efficacy and both task and contextual performance. After analyzing these four relationships the significant coefficients are further analyzed through slope analysis to clarify the level of interaction between autonomy and the given personality trait.

The second type of moderator analysis is made possible by having two groups whose mean level of autonomy is different. By fitting the data of the hospital and homecare sub-samples separately to the model suggested in Figure 2 it is
possible to compute separate path coefficients for the relationships between the
predictors and the criterion variables for each sample.

If there is a significant difference in the level of autonomy between the two
groups, while controlling for most other work related variables, it is possible to
attribute this difference to the moderating effects of autonomy. It is then possible to
pursue the second method for analyzing the moderating effect of autonomy by
comparing path coefficients between groups. Using the equation suggested by
Cohen and Cohen (1983, p.111) for standardized regression weights, or in this case
standardized path coefficients, it is possible to determine if the paths that are
hypothesized to be moderated by autonomy (as suggested by the Model in Figure 2)
are significantly different from each other. More specifically, by comparing the
conscientiousness – work performance, and self-efficacy – work performance path
coefficients between groups, it is possible to determine if autonomy is moderating
the trait – work performance relationships.
CHAPTER 3

RESULTS

Power Analysis

A post hoc power analysis was conducted to determine the level of power given the number of participants in the research. Using the number of participants (123) and assuming that it will be possible to reject the model if the actual level of RMSEA is .08 the power estimate is .98. This is a relatively high estimate of power, and can be interpreted as indicating that there is a 98% likelihood that the fit of this model will be rejected given this number of participants, and given that the true level of RMSEA is .08. A more basic level of interpretation of this power analysis is that if the main effect relationships proposed above in Figure 2 exist as they are proposed in the measured population, then this number of participants should allow the overall model to be accurately supported or rejected.

Descriptive Statistics

Table 1 presents the means, and standard deviations of the total scale scores for all of the variables included in Figure 2, for the overall sample and for the homecare, and hospital sub-samples.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Scale Total</th>
<th>Combined Sample</th>
<th>Homecare Sample</th>
<th>Hospital Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Emotional Stability</td>
<td>48</td>
<td>31.6</td>
<td>31.4</td>
<td>7.16</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>31.9</td>
<td>6.38</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>48</td>
<td>36.5</td>
<td>36.3</td>
<td>5.80</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>36.8</td>
<td>4.83</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>48</td>
<td>38.5</td>
<td>38.6</td>
<td>4.66</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>38.4</td>
<td>4.69</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>48</td>
<td>37.5</td>
<td>37.0</td>
<td>5.86</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>38.0</td>
<td>6.45</td>
</tr>
<tr>
<td>Autonomy</td>
<td>28</td>
<td>22.3</td>
<td>23.9</td>
<td>3.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>20.4</td>
<td>4.46</td>
</tr>
<tr>
<td>Task Performance</td>
<td>12</td>
<td>10.2</td>
<td>10.3</td>
<td>1.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10.2</td>
<td>1.65</td>
</tr>
<tr>
<td>Contextual Performance</td>
<td>24</td>
<td>19.9</td>
<td>20.3</td>
<td>2.98</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>19.3</td>
<td>3.56</td>
</tr>
<tr>
<td>Combined Work Performance</td>
<td>36</td>
<td>30.1</td>
<td>30.6</td>
<td>4.09</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>29.5</td>
<td>4.94</td>
</tr>
</tbody>
</table>

Table 1. Means and Standard Deviations for Model Variables

Table 2 contains correlations between variables for the combined sample. Scale reliabilities are in parentheses along the diagonal. Table 3 contains correlations between the variables for the homecare sample in the lower left corner and for the hospital sample in the upper right corner.

<table>
<thead>
<tr>
<th>Variables</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Emotional Stability</td>
<td>.83</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Agreeableness</td>
<td>.24**</td>
<td>.78</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Conscientiousness</td>
<td>.22*</td>
<td>.18*</td>
<td>.80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Self-efficacy</td>
<td>.33**</td>
<td>.13</td>
<td>.19*</td>
<td>.84</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Autonomy</td>
<td>.29**</td>
<td>.29**</td>
<td>.22*</td>
<td>.15</td>
<td>.81</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Task Performance</td>
<td>.05</td>
<td>.11</td>
<td>-.00</td>
<td>.18*</td>
<td>.12</td>
<td>.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Combined Work Perf.</td>
<td>.12</td>
<td>.20*</td>
<td>-.07</td>
<td>.17</td>
<td>.14</td>
<td>.85**</td>
<td>.97**</td>
<td>.88</td>
</tr>
</tbody>
</table>

n = 123
* indicates significance at the .05 level (2tailed test)
** indicates significance at the .01 level (2tailed test)
Note: Scale reliabilities are in parentheses

Table 2. Correlations Among Study Variables for the Combined Sample
### Table 3. Correlations Among Study Variables, by Sub-Sample

<table>
<thead>
<tr>
<th>Variables</th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
<th>7.</th>
<th>8.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Emotional Stability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Agreeableness</td>
<td>.27*</td>
<td>.22</td>
<td>.08</td>
<td>.40**</td>
<td>.12</td>
<td>.25</td>
<td>.22</td>
<td></td>
</tr>
<tr>
<td>3. Conscientiousness</td>
<td>.13</td>
<td>.16</td>
<td>.17</td>
<td>.31*</td>
<td>.01</td>
<td>.02</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>4. Self-efficacy</td>
<td>.27*</td>
<td>.17</td>
<td>.22</td>
<td></td>
<td>.25</td>
<td>.32*</td>
<td>.31*</td>
<td></td>
</tr>
<tr>
<td>5. Autonomy</td>
<td>.20</td>
<td>.29*</td>
<td>.15</td>
<td>.11</td>
<td>.26</td>
<td>.10</td>
<td>.08</td>
<td></td>
</tr>
<tr>
<td>6. Task Performance</td>
<td>.16</td>
<td>.10</td>
<td>-.01</td>
<td>.12</td>
<td>.24</td>
<td>**</td>
<td>.77**</td>
<td>.88**</td>
</tr>
<tr>
<td>7. Contextual Performance</td>
<td>.00</td>
<td>.24</td>
<td>-.20</td>
<td>-.02</td>
<td>.06</td>
<td>.62**</td>
<td></td>
<td>.98**</td>
</tr>
<tr>
<td>8. Combined Work Perf.</td>
<td>.06</td>
<td>.21</td>
<td>-.15</td>
<td>.03</td>
<td>.14</td>
<td>.82**</td>
<td>.96**</td>
<td></td>
</tr>
</tbody>
</table>

Homecare sample n = 66, Hospital sample n = 57
* indicates significance at the .05 level (2tailed test)
** indicates significance at the .01 level (2tailed test)
Note: Homecare sample correlations in lower left, and Hospital Sample in upper right

As can be seen by the alphas in the diagonal of Table 3 all of the scales achieve acceptable levels of alpha. Of particular concern was the nursing self-efficacy scale, which was developed for this research. The alpha for this self-efficacy scale indicates that it has a relatively high degree of inter-item reliability.

**Confirmatory Factor Analysis of the Performance Scale**

Because the performance scales for both task and contextual performance were developed specifically for this study, and because these scales were developed based on relatively new theory proposed by Borman and Motowidlo (1993), a confirmatory factor analysis for the performance measures was conducted using RAMONA. The objective of this analysis was to see that the items for each of the performance scales showed strong positive path coefficients for the latent variable they were intended to measure. More specifically, to see if items 1, 4, and 6 of the performance rating scale (see Appendix B) loaded on task performance, and items 2,
3, 5, 7, 8, and 9 of the same scale loaded on contextual performance. The path coefficients generated by this analysis are provided in Table 4.

<table>
<thead>
<tr>
<th>Relationships Between Task or Contextual Performance Variables and Their Measures</th>
<th>Parameter Estimate</th>
<th>Lower 90% C.L.</th>
<th>Upper 90% C.L.</th>
<th>t Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task Performance → Item # 1</td>
<td>.85</td>
<td>.72</td>
<td>.99</td>
<td>10.54</td>
</tr>
<tr>
<td>Task Performance → Item # 4</td>
<td>.87</td>
<td>.74</td>
<td>1.01</td>
<td>10.67</td>
</tr>
<tr>
<td>Task Performance → Item # 6</td>
<td>.38</td>
<td>.25</td>
<td>.53</td>
<td>4.60</td>
</tr>
<tr>
<td>Contextual Performance → Item # 2</td>
<td>.76</td>
<td>.68</td>
<td>.83</td>
<td>16.00</td>
</tr>
<tr>
<td>Contextual Performance → Item # 3</td>
<td>.76</td>
<td>.69</td>
<td>.84</td>
<td>16.58</td>
</tr>
<tr>
<td>Contextual Performance → Item # 5</td>
<td>.75</td>
<td>.67</td>
<td>.83</td>
<td>15.51</td>
</tr>
<tr>
<td>Contextual Performance → Item # 7</td>
<td>.56</td>
<td>.45</td>
<td>.68</td>
<td>8.23</td>
</tr>
<tr>
<td>Contextual Performance → Item # 8</td>
<td>.75</td>
<td>.67</td>
<td>.83</td>
<td>15.56</td>
</tr>
<tr>
<td>Contextual Performance → Item # 9</td>
<td>.75</td>
<td>.67</td>
<td>.83</td>
<td>15.82</td>
</tr>
</tbody>
</table>

Table 4. Path Coefficients for Task and Contextual Performance Scales

These results indicate that the items loaded on their intended latent variable as indicated by the significant t values. This provides statistical support for the validity of the task and contextual performance scales used in this study, and also for the theoretical differentiation between task and contextual performance.

Analysis of the Proposed Model

There are two important types of information to consider when evaluating the accuracy and usefulness of a model like the one proposed in Figure 2 above. The first type of information is the overall fit of the model, and the second type is the parameter estimates for each hypothesized relationship within the model. The results of the overall fit of the model are presented first.

Overall Model Fit

The statistic that gives the most accurate indication of the fit of the overall model is the root mean square error of approximation, or RMSEA. The point estimate of the RMSEA for the model in Figure 3 is .075 with 90% confidence.
The point estimate of RMSEA indicates that the model has a fair fit because it falls between .05 and .08 (Steiger & Lind, 1980), and the confidence interval confirms this with a relatively tight range that is almost entirely below .08. To determine which of the predicted relationships within the model are supported it is necessary to look at the parameter estimates for these relationships.

**Parameter Estimates**

The parameter estimates give information about both the strength and direction (either positive or negative) of each individual relationship. Included with the parameter estimates are 90% confidence intervals, which give an explicit indication of the degree of precision in each parameter estimate. In addition to the confidence intervals, t-values are included which indicate significance, that is the ability to reject the null hypothesis for each given parameter. Since the model was set up in such a way so as to standardize the parameter estimates, the t-value needed for significance is approximately $t > |1.96|$. Table 4 contains the parameter estimates, confidence intervals, and t-values for the relationships in Figure 3.

<table>
<thead>
<tr>
<th>Relationship between variables</th>
<th>Parameter Estimate</th>
<th>Lower 90% C.I.</th>
<th>Upper 90% C.I.</th>
<th>t Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Stability $\rightarrow$ Task Performance</td>
<td>.02</td>
<td>-.02</td>
<td>.22</td>
<td>.19</td>
</tr>
<tr>
<td>Emotional Stability $\rightarrow$ Contextual Perf.</td>
<td>.06</td>
<td>-.13</td>
<td>.25</td>
<td>.49</td>
</tr>
<tr>
<td>Agreeableness $\rightarrow$ Task Performance</td>
<td>.23</td>
<td>.05</td>
<td>.41</td>
<td>2.06</td>
</tr>
<tr>
<td>Agreeableness $\rightarrow$ Contextual Performance</td>
<td>.35</td>
<td>.18</td>
<td>.52</td>
<td>3.43</td>
</tr>
<tr>
<td>Conscientiousness $\rightarrow$ Task Performance</td>
<td>-.18</td>
<td>-.36</td>
<td>-.01</td>
<td>-1.69</td>
</tr>
<tr>
<td>Conscientiousness $\rightarrow$ Contextual Perf.</td>
<td>-.30</td>
<td>-.47</td>
<td>-.13</td>
<td>-2.85</td>
</tr>
<tr>
<td>Self-efficacy $\rightarrow$ Task Performance</td>
<td>.22</td>
<td>.04</td>
<td>.40</td>
<td>2.03</td>
</tr>
<tr>
<td>Self-efficacy $\rightarrow$ Contextual Performance</td>
<td>.16</td>
<td>-.01</td>
<td>.34</td>
<td>1.54</td>
</tr>
<tr>
<td>Conscientiousness $\leftrightarrow$ Self Efficacy</td>
<td>.20</td>
<td>.03</td>
<td>.36</td>
<td>1.96</td>
</tr>
</tbody>
</table>

Note: Significant path values are in bold; n = 123

Table 5. Parameter Estimates for Relationships in Figure 2

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The significant parameter estimates are included in Figure 3. In addition to showing the significant paths within this model it also shows the model as it was tested, that is without the proposed moderation of autonomy.

![Figure 3. Significant Main Effects within the Proposed Model](image)

When looking at these results one immediately notices that the relationship between conscientiousness and contextual work performance is negative and that the relationship between conscientiousness and task performance is not significant. Thus, the results for conscientiousness do not provide support for hypotheses one and two since these hypotheses, predicted that the conscientiousness – work performance relationship would be positive. Agreeableness, on the other hand, had a significant positive relationship with both task (.23) and contextual (.35) performance, supporting hypotheses three and four. Emotional stability showed no predictable relationship with either task (.02) or contextual (.06) performance, indicating a lack of support for hypotheses five and six. Finally, self-efficacy
showed a significant positive relationship with task performance (.22) but not with contextual performance (.16), indicating support for hypothesis ten but not for hypothesis eleven.

**Relationships Between the Predictors**

There was support for the hypothesized relationship between conscientiousness and self-efficacy, and while the path coefficient was not large (.20) it was significant. This finding provides support for hypothesis nine.

**Analysis of Autonomy as Moderator**

As mentioned previously there are two ways to assess the moderating effects of autonomy on the predictor – criterion relationships in the proposed model. The moderating effects of autonomy are first addressed where autonomy is considered as a continuous variable, and is analyzed using moderated regression analysis. The second analysis of autonomy as a moderator is a comparison of the selected predictor – criterion relationships of the two groups thought to differ on their mean levels of autonomy. The moderated regression analysis method will be reviewed first, followed by the between groups method.

**Moderated Regression Analysis**

In this method of analysis the predictor variable (conscientiousness or self-efficacy), the moderator variable (autonomy), and the product of the two are simultaneously regressed on one criterion variable. Even though all three variables are used in this type of analysis only the relationship between the product of the predictor and the moderator variable can be meaningfully interpreted. If this path yields a significant t value then it can be concluded that the proposed moderator is in
fact moderating the predictor—criterion relationship. The results of the moderated regression analyses are in Table 5.

<table>
<thead>
<tr>
<th>Relationship Between Variables</th>
<th>B</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conscientiousness</td>
<td>-.525</td>
<td>-.240</td>
<td>.81</td>
</tr>
<tr>
<td>Conscientiousness → Contextual Performance</td>
<td>5.403</td>
<td>1.20</td>
<td>.23</td>
</tr>
<tr>
<td>Autonomy → Task Performance</td>
<td>-.099</td>
<td>-.027</td>
<td>.98</td>
</tr>
<tr>
<td>Autonomy → Contextual Performance</td>
<td>12.294</td>
<td>1.649</td>
<td>.10</td>
</tr>
<tr>
<td>Conscientiousness X Autonomy → Task Perf.</td>
<td>.210</td>
<td>.184</td>
<td>.85</td>
</tr>
<tr>
<td>Conscientiousness X Autonomy → Cont. Perf.</td>
<td>-3.422</td>
<td>-1.456</td>
<td>.15</td>
</tr>
<tr>
<td>Self-efficacy → Task Performance</td>
<td>3.169</td>
<td>1.844</td>
<td>.07</td>
</tr>
<tr>
<td>Self-efficacy → Contextual Performance</td>
<td>11.645</td>
<td>3.317</td>
<td>.001</td>
</tr>
<tr>
<td>Autonomy → Task Performance</td>
<td>4.945</td>
<td>1.693</td>
<td>.09</td>
</tr>
<tr>
<td>Autonomy → Contextual Performance</td>
<td>19.54</td>
<td>3.275</td>
<td>.001</td>
</tr>
<tr>
<td>Self-efficacy X Autonomy → Task Perf.</td>
<td>-1.423</td>
<td>-1.562</td>
<td>.12</td>
</tr>
<tr>
<td>Self-efficacy X Autonomy → Cont. Perf.</td>
<td>-5.810</td>
<td>-3.122</td>
<td>.002</td>
</tr>
</tbody>
</table>

Table 6. Unstandardized Coefficients from Moderated Regression Analysis

Of the relationships of interest (in bold) only one is significant, that between self-efficacy X autonomy and contextual performance, and it is negative. This would seem to indicate that as autonomy increases, the relationship between self-efficacy and contextual work performance is actually the opposite of that predicted in hypotheses 13. In fact, only one of the three remaining non-significant relationships of interest is in the positive direction, that between conscientiousness X autonomy and task performance.

In order to determine the exact form of the moderated relationships a slope analysis was completed by following a procedure recommended by Cohen and Cohen (1983). The regression lines for high, medium, and low levels (±1, 0, -1

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standard deviations from the mean) of autonomy were plotted, to produce a graphic representation of the interaction. The results are presented in Figure 4.

Figure 4. Regression Lines for Self-efficacy on Contextual Performance for Three Different Levels of Autonomy

The graph in Figure 4 clarifies the moderating effect that autonomy has on the relationship between self-efficacy and contextual performance. At relatively low and moderate levels of autonomy, self-efficacy and contextual performance have a positive relationship, but as autonomy is increased to a high level the relationship between self-efficacy and contextual performance becomes negative. This analysis would indicate that when dealing with highly self-efficacious employees too much autonomy in the work setting could have a negative impact on contextual performance.
Moderator Analysis Comparing Relationships between Groups

To be able to take advantage of moderator analysis comparing path coefficients between groups it was first necessary to confirm the hypothesized differences on autonomy between groups. The mean level of autonomy, as measured by the total scale score, was 23.9 for homecare nurses (n = 66), and 20.4 for hospital nurses (n = 57). The t-test comparing these two means yielded a value of 4.76 (with equal variances not assumed, which produces a more conservative estimate of t) which is significant at p < .01. This t-test confirms that there is a significant difference between the home care and hospital groups.

After confirming the predicted difference in autonomy between groups it is possible to pursue the second method for analyzing the moderating effect of autonomy by comparing path coefficients between groups. To get the necessary path coefficients for the comparison it was first necessary to fit the data for each sub-sample to the model in Figure 3. After calculating path coefficients for each sub-sample it is possible to compare them using the equation provided by Cohen and Cohen (1983, p.111) for standardized regression weights, or in this case standardized path coefficients. Using this equation it is possible to determine if the paths that are hypothesized to be moderated by autonomy (conscientiousness with task and contextual performance, and self-efficacy with task and contextual performance) are significantly different from each other. Table 6 contains the path coefficients for each sub-sample.
Table 7. Parameter Estimates for Sub-samples

The equation comparing path coefficients provided by Cohen and Cohen (1983, p.111) yields a z score. The z scores produced when comparing the path coefficients of each sub-sample are given in Table 7, along with the significance level for each of the scores.

Table 8. Z Scores for Comparisons of Path Coefficients between Sub-samples

This method of moderator analysis produces noticeably different results from the previous method. When comparing path coefficients between samples and using the z score products of this analysis there appears to be support for autonomy moderating all four of the relationships tested.
CHAPTER 4

DISCUSSION

To summarize the results for the main effects, the findings here indicate that emotional stability has little or no predictive validity for task or contextual performance, agreeableness has significant positive predictive validity for both task and contextual performance, conscientiousness has a significant but negative relationship with contextual performance, and finally, self-efficacy has significant positive relationship with conscientiousness and task performance.

While only three of the eight main effect relationships were supported in the hypothesized direction there are some similarities with previous findings. For example, Tett, Jackson, and Rothstein (1991) also found agreeableness was the best predictor of work performance \( r = .33 \). Similar to the findings here, Hurtz and Donovan (2000) found that agreeableness was the best overall predictor of contextual performance \( r = .20 \). Also, Mount, Barrick and Stewart (1998) found that agreeableness was the best predictor of job performance for jobs that involved teamwork \( r = .33 \) as opposed to dyadic interaction. Finally, Van Scotter and Motowidlow (1996) found that agreeableness was the best predictor of contextual performance \( r = .16 \). The last three of these findings may indicate that...
agreeableness is the best of the big five personality measures for predicting a special kind of performance that may center on the ability to get along with and work well with others.

The Moderating Effect of Occupation

All three of the published meta-analyses that explored the predictive validity of big five personality characteristics for work performance considered occupation in their analyses (Barrick & Mount, 1991; Hurtz & Donovan, 2000; Tett et al., 1991). Due to the fact that it is necessary for meta-analyses cover a broad range of studies the occupational categories used in these particular works have also been broad. For example, Barrick and Mount (1991) broke occupational categories into four groups professionals, police, managers, and skilled/semiskilled categories. Tett, Jackson, and Rothstein (1991) used even broader categories, which included professional/nonprofessional, managerial/nonmanagerial, and civilian/military. Most recently, Hurtz and Donovan (2000) used four categories of occupations including sales, customer service, management, and skilled/semiskilled. While research has shown that it is useful to take occupation into account when analyzing the predictive validity of personality traits (Mount et al., 1998), it is likely that these categories are so broad that they are not useful. The reason for having an interest in occupational categories is that jobs differ in what they demand of people. Thus previous meta-analysis authors have been interested in whether work performance is differentially predicted in different job types. Unfortunately, because the occupational categories are so broad in the meta-analyses completed it seems likely
that the similarities within groups, and differences across groups are not meaningful enough to provide useful findings.

This study used participants from only one occupation and had findings that did not support many of the generally accepted trends of past research. This indicates a need to complete more occupation specific research to determine which personality traits or facets of traits are valid predictors of the behaviors needed in that specific job.

To complete this type of research it would be advisable to come up with a taxonomy of job descriptors that would help identify jobs by the personality traits which are thought to predict performance in that job. Traditionally, industrial-organizational psychologists have completed job analyses and have focus on the knowledge, skills and abilities that are thought to predict performance in a particular job but they also need to consider personality traits in the same way. Raymark, Schmit, and Guion (1997) have developed such a taxonomy based on the Big Five personality traits. They have developed 12 subdimensions of three fall under each extroversion, agreeableness, and conscientiousness, two fall under openness to experience, and one falls under neuroticism. By using the descriptors provided in this taxonomy it would be possible to begin to create categories of jobs that were meaningful when considering the personality characteristics that a person would need to perform well in that position. Through further research and further refinement of such a taxonomy it would be possible to add personality dimensions to the descriptors used in job analysis and by doing so to potentially increase the criterion used to select high performing candidates for a given job.
The fact that the results of this study did not follow in the mainstream of previous findings (i.e. that conscientiousness is the best predictor of performance) may have been influenced by recent large-scale changes that have occurred in the field of healthcare, and so a consideration of how these changes may have effected the results follows. In the long-standing attack on high medical costs, nursing staffs have been cut, causing the patient to nurse ratio to increase, and in turn tend to cause more stressful working conditions for the remaining nurses. It is possible that in this more stressful environment that nurse managers are more interested in nurses who can get along with their patients and with other nurses, than they are with nurses who are careful and orderly in their work. In fact, the negative path coefficient between conscientiousness and contextual performance may suggest that these nurse managers may be somewhat annoyed by nurses who are too careful and orderly in the way they go about their work. Alternatively, nurse managers may get the best feedback from patients, and other nurses about their supervisees who display the flexible, cooperative, and caring components of the agreeableness trait. Nursing as a profession is most closely associated with caring for others and the ability to pursue this type of caring may be best predicted by agreeableness.

Sex Differences in Performance and Prediction

The reason that the results of this study were different from the generally accepted findings of previous meta-analysis (i.e. conscientiousness is the best predictor of job performance) may have been due to the fact that the vast majority of the participants in this study were women. None of the previous meta-analyses coded for the sex of the participants in the studies, so little is known about the
potential for sex differences in this area. The participants in this study included seven men out of 123 (5%). More importantly, all of the managers who rated the participants were women. It is quite possible that women have a different idea about what constitutes performance than men do, and likely that when asked the same questions about performance that they would respond differently about a given employee’s level of performance. For example, one might expect a difference in the mean level of cooperation that men and women managers expect from their direct reports. If it is the case that women expect more cooperation on the job, which could be captured by measures of contextual performance, and that the findings of Hurtz and Donovan (2000) are accurate, that agreeableness is the best predictor of contextual performance, then it may be even more likely that agreeableness is the best indicator of contextual performance when the manager is a woman. While this point deals with the effect that women managers may have on performance ratings, another point that is worth making is that both male and female managers may expect, due to cultural norms, that women should generally display more cooperative behavior. If more cooperative behavior is expected of women then it might be logical that managers rate women higher on contextual and task performance who are higher in agreeableness. And if women are expected to be more cooperative it is also possible that women employees high in conscientiousness could be seen more negatively than men who are high in conscientiousness, especially if this conscientiousness is seen as making the women less agreeable than less conscientious women.
Even though the points made here are based on speculation, the results of this study would provide support for the speculative reasoning suggested here. Regardless of the reason for the current results they should serve as a wake-up call for those who do research on the predictive validity of personality traits. Future work in this area should code the sex of both the rater and those who are rated to see if there are differential effects, and if so what form they take. The findings here suggest that when dealing with a population of women managers and/or employees that conscientiousness is not the best predictor of task or contextual performance, and that agreeableness is the best predictor of both types of performance.

The Possibility of Range Restriction

One advantage to using a widely-used measure of personality traits is that national norms are provided. The ranges of the high, medium, and low categories for each of the big five traits were different for men and women and were provided as part of the NEO-FFI scale itself (1991). The categories used here were the norms for women since the vast majority of the participants were women. This group of participants had a mean level of conscientiousness (38.5) that put them just into the high range (38.3-43.7) of mean scores. Similarly, the mean level of agreeableness (36.5) fell within the high range of nationally normed scores (36.3-41.2). Also the mean level of neuroticism (16.4) was in the low range (8.7-16.6), indicating relatively high emotional stability. The conclusions that can be drawn from these descriptive statistics and national norms are that this sample was above average in agreeableness, conscientiousness and emotional stability. While agreeableness and conscientiousness did show distinct relationships with task and contextual
performance it is possible that the level of emotional stability needed to show a negative effect on either type of work performance was generally not reached in this relatively emotionally stable sample.

**Autonomy as a Moderator**

The moderated regression method indicated that autonomy was a significant moderator of only one relationship, that between self-efficacy and contextual performance. Autonomy moderated this relationship in such a way that caused it to go from positive to negative as levels of autonomy increased. The practical implication of this finding is that nurses, and possibly all employees, that are high in self-efficacy may exhibit decreasing levels of contextual performance as they are given more autonomy at work. If this finding can be replicated, it may suggest that a manager who wants greater contextual performance from an employee that is highly self-efficacious may want to decrease the level of autonomy for that employee.

The second moderator analysis which compared path coefficients between groups produced different results indicating that all of the paths that were compared between groups were significantly different from each other. While an attempt was made to match these samples on as many variables as possible (e.g. organization, work responsibilities, and skill level) it is possible that this less specific method of analysis picked up on some differences other than the level of autonomy experienced. Any other differences between groups could have magnified the group differences as measured by the predictor – criterion path coefficients. Because this method of analysis is broader and because there is no way to further explore the nature of these moderation effects, as there is with the slope analysis for the
moderated regression analysis, it is difficult to know what might be causing these significant results. Because it is unclear what may be causing these significant results they should be interpreted with caution.

The Relationship Between Conscientiousness and Self-efficacy

One of the key contributions of this work is to show that conscientiousness and self-efficacy are related. The t-test of the path coefficient between these two variables is significant indicating that it would be worthwhile to further explore this relationship. A study that focuses on this relationship could attempt to determine which facets of conscientiousness have the most overlap with self-efficacy. Another question that might be answered is which construct is a better predictor for which types or categories of jobs. The results of the current study suggest that in a caring profession like nursing self-efficacy is a better indicator of performance than conscientiousness, and more specifically is a better predictor of task performance than contextual performance.

Limitations

One of the limitations in this work concerns the strength of the task performance scale. As indicated in Table 2, the alpha value for this particular scale is below the .8 cut-off, which generally indicates acceptable inter-item reliability. This coupled with the fact that this scale only has three items causes some cause for concern. Through further analysis it was possible to determine that by removing item number six in the overall performance scale (see Appendix B) it is possible to increase the inter-item reliability of the task performance scale to .85. By using a scale with more inter-item reliability for task performance, it may be possible to get
better indications of the relationships between these personality characteristics and task performance. This concern about the inter-item reliability of the task performance scale was ameliorated to some degree by the findings of the confirmatory factor analysis. This analysis found that all of the performance measures had significant path coefficients with their intended latent variable (either task or contextual performance). This finding provided support that the latent constructs of task and contextual performance were being appropriately measured by the performance measure used here (see Appendix B).

A second limitation of this study is the relatively small amount of information that is provided by the model fit indicators. While the RMSEA indicates that the fit of the model is acceptable or fair, it is not useful to interpret the fit of this model given the parameter estimates for the relationships in the model. Because the parameter estimates do not fit the predicted pattern, attempting to interpret the fit of the overall model becomes a moot point because the data suggest a model that is different than the one proposed.

Conclusions and Suggestions for Future Research

The results of this study call into question the universality of conscientiousness as a predictor of job performance. While it may be on average the best predictor of job performance across different types of jobs, the findings here suggest that there may be more variation across different jobs than may be evident in the findings of the Barrick and Mount (1991) meta-analysis that has spawned much of the recent research in this area. In addition to not assuming the universality of conscientiousness as a valid predictor it may be worthwhile to conduct more
research on the predictive validity of agreeableness. More specifically, with what types of jobs is agreeableness a better predictor than conscientiousness? If agreeableness is a better predictor of service jobs like nursing then it may be the more important predictor in the future, as the economy and the jobs within it become more and more service oriented. When studying how job types effect the predictive validity of personality traits in the future, researchers should not match jobs by broad category (e.g. sales, professional, managerial). These overly broad categories have led to inconclusive results in all three of the major meta-analyses that have been published in this area to date (Barrick & Mount, 1991; Hurtz & Donovan, 2000; Tett et al., 1991). If the results of the present study were compared across other studies, using samples from other specific jobs, it is possible that different leading predictors, from the big five, could be identified. To discover the moderating effects of job type it seems necessary to narrow the categorization of job types to say one profession or trade, or to categorize jobs by some behavioral requirements that define a narrower category. For example, sales jobs may only be included in the sales category if they include cold calling on clients, and giving presentations to explain one's product or service. It may even be necessary to specify what percentage of the time is spent on specific behavior types. By making the job categories more specific or by using behaviorally based job categories or a systematic job typology based on personality requirements like the one suggested by Raymark et. al. (1997) it may be possible in future research to determine the best personality trait predictor of behaviors that indicate job performance.
Potentially even more important than the differentiation between job types is the differentiation between manager and/or subordinate gender. There are different behavioral expectations for men and women in society, why should one expect that this does not carry over into the work setting. The fact that past meta-analyses have not looked at this variable should be considered a significant oversight, and it is likely that exploration of this moderating variable will yield differential results between genders. Future studies should look at the differences in the performance ratings generated by male managers as compared to female managers. In addition, they should look at the differences in the average level of task and contextual performance for men and women employees. If patterns of work performance do not become clear at the individual study level, then by having the gender information available for authors of future meta-analyses it may be possible to begin discerning patterns at a macro level of analysis.

Finally, the relationship between conscientiousness and self-efficacy not only has important practical implications for predicting performance but also brings two important streams of theoretical literature together. If the relationship between these two variables can be further delineated it may begin to answer some questions about the predictive validity of each of these constructs for work performance, and it is sure to raise new questions that should be explored empirically. For example, future works may want to measure the facets of conscientiousness to determine which of them have a stronger relationship with self-efficacy than others. By looking at this more detailed information it may be possible to better understand when and why
conscientiousness and self-efficacy can be valid predictors of both task and contextual performance.
REFERENCES


APPENDIX A

RESPONDENT SURVEY
This appendix includes the survey instrument as given to the participants. The survey is identical in content and format to those given to the participants except for the titles [in bold and in brackets] that identify the name and or purpose of the scale included on that page.

The NEO-FFI is organized so that every fifth item is part of the same scale. Each scale measures one personality trait. The instrument begins with a neuroticism item (the negative pole of emotional stability) and every fifth item after that is part of that scale (items 1, 6, 11…). The remaining traits follow in this order: extroversion (items 2, 7, 12…), openness to experience (items 3, 8, 13…), agreeableness (items 4, 9, 14…), and conscientiousness (5, 10, 15…).

The autonomy scale includes three items (numbers 5, 6, and 7) from the Job Diagnostic Survey (Hackman & Oldham, 1975) and four items numbers 1, 2, 3, and 4) that were derived from the definition of autonomy provided by Hackman & Oldham (1976; 1980).
CONSENT FOR PARTICIPATION IN SOCIAL AND BEHAVIORAL RESEARCH

I consent to my participation in research being conducted by Robert Billings and George Norris of The Ohio State University.

The investigator has explained the purpose of the study, the procedures that will be followed, and the amount of time it will take. I understand the possible benefits, if any, of my participation.

I know that I can choose not to participate without penalty to me. If I agree to participate, I can withdraw from the study at any time, and there will be no penalty.

I consent to have my direct supervisor complete a brief evaluation of my work performance and understand that these responses and all responses that I provide will be strictly confidential and will be reported by the researchers listed above only as aggregate, or group results.

I have had a chance to ask questions and to obtain answers to my questions. I can contact the investigators at:

Industrial Organizational Psychology Area
The Ohio State University
140h Lazenby Hall
1827 Neil Ave.
Columbus, OH 43210
Phone: 614-292-8115.

If I have questions about my rights as a research participant, I can call the Office of Research Risks Protection at (614) 688-4792.

I have read this form. I sign it freely and voluntarily. A copy has been given to me.

Print the name of the participant:

Date: ___________________________ Signed: ___________________________

(Principal investigator or his/her authorized representative)
[NEO-FIVE FACTOR MEASURE OF PERSONALITY]

Please circle the answer that best represents your opinion.

Circle **SD** if you strongly disagree or the statement is definitely false.
Circle **D** if you disagree or the statement is mostly false.
Circle **N** if you are neutral on the statement, you cannot decide, or the statement is about equally true and false.
Circle **A** if you agree or the statement is mostly true.
Circle **SA** if you strongly agree or the statement is definitely true.

1. I am not a worrier.
   **SD D N A SA**

2. I like to have people around me.
   **SD D N A SA**

3. I don't like to waste my time daydreaming.
   **SD D N A SA**

4. I try to be courteous to everyone I meet.
   **SD D N A SA**

5. I keep my belongings clean and neat.
   **SD D N A SA**

6. I often feel inferior to others.
   **SD D N A SA**

7. I laugh easily.
   **SD D N A SA**

8. Once I find the right way to do something, I stick to it.
   **SD D N A SA**

9. I often get into arguments with my family and co-workers.
   **SD D N A SA**

10. I'm pretty good about pacing myself so as to get things done on time.
    **SD D N A SA**

11. When I'm under a great deal of stress, sometimes I feel I'm going to pieces.
    **SD D N A SA**

12. I don't consider myself especially "light-hearted".
    **SD D N A SA**

13. I am intrigued by the patterns I find in art and nature.
    **SD D N A SA**

14. Some people think I'm selfish and egotistical.
    **SD D N A SA**

15. I am not a very methodical person.
    **SD D N A SA**

16. I rarely feel lonely or blue.
    **SD D N A SA**

17. I really enjoy talking to people.
    **SD D N A SA**

18. I believe letting students hear controversial speakers can only confuse and mislead them.
    **SD D N A SA**

19. I would rather cooperate with others than compete with them.
    **SD D N A SA**

20. I try to perform all the tasks assigned to me conscientiously.
    **SD D N A SA**

21. I often feel tense and jittery.
    **SD D N A SA**

22. I like to be where the action is.
    **SD D N A SA**

23. Poetry has little or no effect on me.
    **SD D N A SA**

24. I tend to be cynical and skeptical of others' intentions.
    **SD D N A SA**

25. I have a clear set of goals and work toward them in an orderly fashion.
    **SD D N A SA**

26. Sometimes I feel completely worthless.
    **SD D N A SA**

27. I usually prefer to do things alone.
    **SD D N A SA**

28. I often try new and foreign foods.
    **SD D N A SA**

29. I believe that most people will take advantage of you if you let them.
    **SD D N A SA**

30. I waste a lot of time before settling down to work.
    **SD D N A SA**
Please circle the answer that best represents your opinion.

Circle **SD** if you strongly disagree or the statement is definitely false.

Circle **D** if you disagree or the statement is mostly false.

Circle **N** if you are neutral on the statement, you cannot decide, or the statement is about equally true and false.

Circle **A** if you agree or the statement is mostly true.

Circle **SA** if you strongly agree or the statement is definitely true.

<p>| | | | | | |</p>
<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>31. I rarely feel fearful or anxious.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>32. I often feel as if I'm bursting with energy.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>33. I seldom notice the moods or feelings that different environments produce.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>34. Most people I know like me.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>35. I work hard to accomplish my goals.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>36. I often get angry at the way people treat me.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>37. I am a cheerful, high-spirited person.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>38. I believe we should look to our religious authorities for decisions on moral issues.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>39. Some people think of me as cold and calculating.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>40. When I make a commitment, I can always be counted on to follow through.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>41. Too often, when things go wrong, I get discouraged and feel like giving up.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>42. I am not a cheerful optimist.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>43. Sometimes when I am reading poetry or looking at a work of art, I feel a chill or wave of excitement.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>44. I'm hardheaded and tough-minded in my attitudes.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>45. Sometimes I'm not as dependable or reliable as I should be.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>46. I am seldom sad or depressed.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>47. My life is fast-paced.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>48. I have little interest in speculating on the nature of the universe or the human condition.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>49. I generally try to be thoughtful and considerate.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>50. I am a productive person who always gets the job done.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>51. I often feel helpless and want someone else to solve my problems.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>52. I am a very active person.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>53. I have a lot of intellectual curiosity.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>54. If I don't like people, I let them know it.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>55. I never seem to be able to get organized.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>56. At times I have been so ashamed I just wanted to hide.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
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<tr>
<td>57. I would rather go my own way than be a leader of others.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
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<tr>
<td>58. I often enjoy playing with theories or abstract ideas.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
</tr>
<tr>
<td>59. If necessary, I am willing to manipulate people to get what I want.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
<td>SA</td>
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<tr>
<td>60. I strive for excellence in everything I do.</td>
<td>SD</td>
<td>D</td>
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<td>A</td>
<td>SA</td>
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</table>
[MEASURE OF NURSING SELF-EFFICACY]

Please read each statement carefully and then circle the answer which best represents your opinion about the statement. The numbers correspond to the following statements.

Response options:

Circle **VD** if this task would be **very difficult** for me
Circle **MD** if this task would be **moderately difficult** for me
Circle **SE** if this task would be **somewhat easy** for me
Circle **ME** if this task would be **moderately easy** for me
Circle **S** if this task would be very easy or **simple** for me

Please indicate how confident you are that you could complete the following tasks:

<table>
<thead>
<tr>
<th>Task</th>
<th>VD</th>
<th>MD</th>
<th>SE</th>
<th>ME</th>
<th>S</th>
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<tbody>
<tr>
<td>1. Assess my patients’ medical needs.</td>
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<tr>
<td>2. Assess my patients’ mental and emotional needs.</td>
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<td>3. Create a plan for my patients’ care.</td>
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<td>4. Properly follow doctor’s orders and organizational policy when treating a patient.</td>
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<tr>
<td>5. Communicate and coordinate necessary patient care information with all other members of the health care team.</td>
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<tr>
<td>6. Complete documentation in a timely and accurate way.</td>
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<tr>
<td>7. Provide all of the skilled interventions that my patients require.</td>
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<tr>
<td>8. Evaluate the patient after interventions using appropriate criteria.</td>
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<tr>
<td>9. Based on the patient’s outcomes after treatment make appropriate changes in the care plan or determine whether further assessment is needed.</td>
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<tr>
<td>10. Take appropriate actions if I were to find a patient unconscious.</td>
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<td>11. Deal with a difficult patient that has an unreasonable number of complaints.</td>
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<tr>
<td>12. Work with a difficult coworker that is uncooperative.</td>
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</tbody>
</table>
Please read each statement carefully and then circle the answer which best represents your opinion about the statement. The numbers correspond to the following statements.

Response options:
- Circle **VI** if this statement is very inaccurate
- Circle **I** if this statement is inaccurate
- Circle **U** if you are uncertain about the accuracy of this statement
- Circle **A** if this statement is accurate
- Circle **VA** if this statement is very accurate

Please indicate whether each statement is an accurate or inaccurate description of your job. Please try to be as objective as you can in deciding how accurately each statement describes your job — regardless of whether you or dislike your job.

How accurate is each of the following statements in describing your job?

| 1. My supervisor gives me freedom to schedule time to meet my patient’s needs and when to schedule my other daily work. | VI I U A VA |
| 2. My job is designed in such a way that I am allowed the freedom to schedule time to meet my patient’s needs and when to schedule my other daily work. | VI I U A VA |
| 3. My supervisor allows me the independence to determine the procedures through which I will complete my work. | VI I U A VA |
| 4. My job is designed in such a way that allows me the independence to determine the procedures through which I will complete my work. | VI I U A VA |
| 5. My job denies me any chance to use my personal initiative or judgment in carrying out the work. | VI I U A VA |
| 6. The job gives me considerable opportunity for independence and freedom in how I do the work. | VI I U A VA |
| 7. Other people who hold the same job as I do have more freedom to do their job when and how they want to do it. | VI I U A VA |
| 8. How many years have you been in your current position? | _____ Yrs _____ mos |

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APPENDIX B

PERFORMANCE RATING FORM
This appendix includes the nine item work performance scale as given to the managers of the participants. This form is identical in form and content to those given to the managers except for the title of the scale which is [in bold and in brackets].

Task performance was measured by a three item subscale which included items one, four, and six. Contextual performance was measured by a six item subscale which included items two, three, five, seven, eight, and nine. The task performance items attempted to cover responsibilities that would be in the job descriptions of all participants, and the contextual performance items were derived from Borman and Motowidlow’s (1993) definition of contextual performance as explained in the methods section.
**[MEASURE OF PARTICIPANT WORK PERFORMANCE]**

Supervisee Work Performance Rating Form

Name of Supervisee __________________________

How long have you managed this supervisee? _________ Yrs. _________ Mos.

Please answer the questions below by circling the answer that best reflects your assessment of the above named person.

Response options
SD – Strongly Disagree
D – Disagree
N – Neutral
A – Agree
SA – Strongly Agree

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<tr>
<td>1. She/he shows strong technical nursing skills.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
</tr>
<tr>
<td>2. She or he cooperates with and helps others at work to get things done.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
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<tr>
<td>3. She/he is willing to go beyond what is in his or her job description to make sure that all necessary work gets done.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
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<td>4. She or he has good nursing skills that allow her or him to take care of their patients' medical needs.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
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<td>5. She or he follows organizational rules and procedures when completing work even when it is personally inconvenient.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
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<td>6. He or she is good at completing paperwork and administrative tasks needed to perform his or her job.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
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<td>7. He or she contributes in a constructive way to meetings and other work group activities.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
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<td>8. She or he is persistent and enthusiastic when completing his or her work.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
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<td>9. She or he usually goes along with and even buys into the objectives that the organization tries to pursue.</td>
<td>SD</td>
<td>D</td>
<td>N</td>
<td>A</td>
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