2011

Comparing conscientiousness and neuroticism in predicting task performance and contextual performance

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COMPARING CONSCIENTIOUSNESS AND NEUROTICISM IN PREDICTING TASK PERFORMANCE AND CONTEXTUAL PERFORMANCE

A Thesis

Presented to the

Faculty of

California State University,

San Bernardino

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

in

Psychology:

Industrial/Organizational

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ABSTRACT

Although a large amount of research has been conducted to assess various factors that are related to job performance, few researchers have evaluated the differences between neuroticism and conscientiousness in predicting task and contextual performance. Building on previous studies' results, Big Five personality factors were examined as correlates of job performance. Specifically, conscientiousness and neuroticism were expected to explain a significant amount of variance in task and contextual performance.

Consistent with previous research, I found a significant prediction of task performance using the personality variable, conscientiousness in a field sample. However, I failed to find the interaction between neuroticism and individual effort intensity significantly predicting task performance. It is possible that this result is a function of the method used in this study. I used a self-report survey method in which participants responded to survey questions about task performance. In Smillie et al.'s (2006) study, participants were required to focus on an experimental task, which served as the measure of task performance.

Nevertheless, I found conscientiousness predicts much more variance than neuroticism in predicting contextual performance. Twenty percent of variance in contextual performance was explained by conscientiousness, contrasting with one percent of variance that was explained by neuroticism. Practical and theoretical implications were discussed.

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CHAPTER ONE

INTRODUCTION, LITERATURE REVIEW, AND HYPOTHESES

Introduction

Over the decades, job performance has been a frequently studied concept in organizational psychology (Motowidlo, Borman, & Schmit, 1997; Borman, Penner, Allen, & Motowidle 2001). This is largely because researchers have demonstrated that job performance is related to various important organizational outcomes (Salgado, 2002), such as customer satisfaction, quality and quantity of products, and employees' absenteeism and efficiency. Top employees are more likely to need little supervision, to create a high standard quality and quantity of products within required time frames, and to be cost effective in the use of organizational resources (Salgado, 2002).

Two main aspects of job performance have been commonly accepted, which are task performance and contextual performance. Task performance is what is usually thought of as job performance. Job analysis is used to define the

important aspects of a job, which are the tasks that are to be completed for an incumbent to be a successful performer. In contrast, contextual performance is associated with aspects beyond the formal job analysis. It is related to employees' collaboration, assistance, work enthusiasm, and organizational commitment. In the next section, I discussed the distinctions and similarities between task and contextual performance in greater details.

Task and Contextual Performance

Task Performance can be defined as the outcomes produced by employees that include the processes of planning, execution, maintenance, development, and evaluation (Motowidlo et al., 1997). Task performance includes activities that convert the raw materials into the organization's products, such as finished outputs and services (Motowidlo et al., 1997). For instance, methods to evaluate a sales employee's task performance would include assessing the quantities of products that had been sold, and the degree of satisfaction the customer had with his sales service. Also, for employees who operate equipment, their task performances would include the degree

of familiarity to control the machine, and efficiency of their work. On the whole, task performance can be measured in all career fields, including teachers teaching school children, surgeons saving human lives, lawyers defending clients or advocating for plaintiffs, executive managers operating the company and so on. However, different types of jobs are evaluated by different criteria in terms of task activities across various jobs. In fact, task based job analysis helps define different task responsibilities, requirements, and objectives across occupations and organizations (Borman et al., 2001). There are many factors that contribute to the differences in task performance among people. Some of these differences are the result of:

> Individual cognitive ability (e.g., emotional intelligence), knowledge (e.g., task related professional knowledge, principles, terminologies and background), skills (e.g., the task related technical skills, social skills, communication skills, writing and reading skills that support knowledge to perform tasks effectively), habits (e.g., various trait responses to changed situations to facilitate performance),

abilities, and prior experiences. (Borman et al., 2001, p. 54)

Thus, task performance has a strong relationship to the person's background, personality, and experiences (Motowidlo et al., 1997).

Different from task performance, contextual performance aims to "include broader social, behavioral, and psychological boundaries within the organizational environment" (Motowidlo et al., 1997, p. 100). Contextual activities include the willingness to help other colleagues in performing and developing the job responsibilities (Borman & Motowidlo, 1997), such as:

> Assisting and cooperating with others; respecting organizational regulations and procedures; implementing, supporting, and protecting organizational goals; displaying the great passion and interest in completing one's own tasks successfully; and appropriately managing and quickly responding to the changed internal and external circumstances. (Motowidlo et al., 1997, p. 100)

Motowidlo, James, and Scotter (1994) examined two dimensions of contextual performance: "interpersonal

facilitation (assistive behaviors that help other colleagues in completing their tasks) and job dedication (self-disciplined behaviors such as taking initiative, low distractibility, respecting regulations, putting in great efforts)" (P. 476). Appendix A, "The Borman and Motowidlo Contextual Performance Taxonomy" (Motowidlo et al., 1997, p. 102) outlines a comprehensive list of dimensions associated with contextual performance.

Although there are clear distinctions between task and contextual performance, they share similar characteristics that contribute to organizational outcomes (Motowidlo et al., 1997). The primary purpose of task performance behaviors is to transfer raw materials into profitable outputs and services, such as quality and quantity of products (Borman et al., 1997). Complementing task performance, contextual performance behaviors provide internal and external support for organizations to operate effectively and efficiently, through such aspects as cohesion, cooperation, and loyalty (Borman et al., 1997). Thus organizational operations and maintenance are supported by both task performance behaviors and contextualperformance behaviors (Motowidlo et al., 1997).

Big Five Personality

Because of the importance of job performance to the business enterprise, considerable efforts have focused on how best to predict job performance. Here I will discuss one type of predictor that has been used to predict job performance: personality. Personality is not only meaningful in explaining the behaviors and attitudes of employees in organizational contexts, but has been useful to predict job performance. The five-factor model of personality provides significant evidence to support the study of individual differences relative to achieving organizational objectives, and employee dedication to accomplishing specific tasks (Shi, Lin, Wang, & Wang, 2009). This model is composed of five independent dimensions: extraversion, agreeableness, openness to experience, conscientiousness, and neuroticism. People who show the trait of extraversion are more likely to be outgoing, talkative, energetic, and active. People high in agreeableness tend to be friendly, easygoing, compassionate and cooperative. Individuals who exhibit openness of experience are more likely to be inventive, curious about new things, prefer adventure, and are full of imagination and creative ideas.

Conscientiousness is one of the most important traits in the Big Five personality model and one that my research focused on. Conscientious people are more likely to be goal oriented, efficient, self-disciplined, and behave responsibly. Neuroticism, another Big Five factor I included in my study, is about emotional stability. The highly neurotic person tends to experience negative emotions, such as anger, anxiety, or depression. People who are low in neuroticism are described as emotionally stable (Shi et al., 2009).

The Relationship between Big Five Personality and Performance

Motowidlo et al. (1994) found that conscientiousness significantly predicted task performance. The other four personality dimensions have generally been either non-significant or weak predictors of task performance (Beaty, Cleveland, & Murphy, 2001).

As many researchers have discussed previously, conscientiousness relates to goal orientation, achievement aspiration, persistence, and efficiency. Clearly, all of these attributes are directly related to task performance. In

addition to conscientiousness, other elements of the Big Five personality are good predictors of contextual performance (Borman et al., 1997). In the same study conducted by Motowidlo et al. (1994), four personality dimensions significantly explained variance in contextual performance across a variety of professional fields (Beaty et al., 2001). For instance, in skilled jobs, neuroticism showed a quite stable impact on job performance in general (Borman et al., 1997). People who are rarely irritated, easily pleased, and emotionally stable, tend to have a low degree of depression, and more likely to be good performers on the job. Moreover, for some jobs that require close cooperation and communication, such as sales representative, agreeableness plays a very important role in explaining interpersonal interaction, a facet of contextual performance. For instance, a sales representative needs to be easy-going, likeable, sociable, and good-natured to be successful in selling products to different customers (Borman et al., 1997). Finally, for leadership positions, extraversion is a vital personality dimension in predicting manager's contextual performance. With the potential for rapid change in the organizational, economics, social, and psychological

environment, leaders will need to possess quick responses, boarder networks, and new technological skills to adapt to those environments.

Thus, four of the Big Five personality dimensions showed significant correlations with both task performance and contextual performance across different types of jobs (Motowidlo et al., 1997). Only openness to experience appears to explain very limited variance in task performance as well as contextual performance (Griffin & Griffin, 2004). Finally, of the five factors, conscientiousness and neuroticism appear to be among the most consistent predictors of task and contextual performance.

Predicting Job Performance

As suggested above, a number of the Big Five personality variables have been proposed as predictors of job performance. For this thesis research, I am interested in two: conscientiousness and neuroticism. According to Donovan and Hurtz (2002), meta-analyses have provided evidence to support that "personality traits could be good predictors of job performance, particularly conscientiousness" (p. 871).

Conscientiousness is the most powerful predictor in the task performance across various jobs (Donovan et al., 2002). This finding makes sense as research has suggested that conscientiousness includes several facets, such as achievement orientation, detail orientation, persistence, effectiveness, and efficiency that would be expected to relate conceptually to task performance (Gellatly, 1996). To complete work successfully requires not only goal orientation, but also persistence, cooperation, supportiveness, and enthusiasm (Gellatly, 1996). Thus, the important role of conscientiousness in influencing employees' dedication and adaption suggests that conscientiousness could be linked to contextual performance too.

To understand how neuroticism is related to both task and contextual performance, its nature needs to be considered. Neuroticism was defined conceptually as a "bipolar dimension of emotionally stability by Eysenck in 1967" (Petrides, Jackson, Furnham, & Levine, 2003; Smillie, Yeo, Furnham, & Jackson, 2006, P. 140). Highly neurotic people are more reactive in emotions, and individuals who are low in neuroticism are more emotionally stable. In addition,

emotional stability has also been widely described as providing better coping skills when people are confronted with an unpredictable situation. Given that one of the important facets of contextual performance is the disposition to respond quickly to changing situations and to handle them appropriately, neuroticism would seem to be a vital factor in explaining contextual performance. In contrast to task performance, the commonly accepted assumption is that neuroticism is either a negative or non-significant predictor of task performance (Donovan et al., 2002). Even so, fresh experimental research is described in this thesis that evaluated the possibility of an interaction between neuroticism and a moderator of individual effort intensity, a factor that contributes most directly to task performance (Smillie, et al., 2006).

Therefore, based on previous research, the primary aim in this proposal is to address the relationship of effort intensity to neuroticism in predicting task performance. My other goal is to compare conscientiousness and neuroticism in predicting task performance and contextual performance. Effort intensity was not used to predict contextual

performance in this study. Conceptually, effort intensity is more related to task performance, rather than contextual performance.

Smillie et al. (2006) provided research data that examined the relationship between neuroticism and task performance by adding a moderator that is individual effort intensity. The significantly positive interaction between neuroticism and inividual effort intensity in predicting task performance was demonstrated in their research (see Figure 1), which renewed interest in neuroticsim as a predictor of task performance. Effort intensity includes two parts: "work intensity" and "time commitment" (Brown & Leigh, 1996, p. 362). Work intensity refers to the efforts that employees put forth toward their usual duties during a regular day. Time commitment refers to the persistence, and time spenting for achieving job objective.

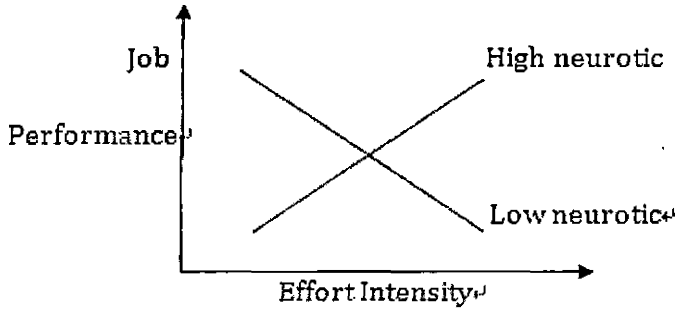

Figure 1. Experimental Research of Interaction

Smillie, L. D., Yeo, G. B., Furnham, A. F., & Jackson, C. J. (2006). Benefits of all work and no play: The relationship between neuroticism and performance as a function of resource allocation. *Journal of Applied Psychology*, 91(1), 139-155.

Moreover, Smillie et al. (2006) found evidence that the interaction between individual effort intensity and scores on the Anxiety subscale of Eysenck Personality Profiler Neuroticism predicted task performance. Specifically, for highly neurotic individuals, effort intensity elevated task performance more than those who were low in neuroticism (Smillie, et al., 2006). Thus, the outcome of this research suggested that neuroticism may actually be a positive factor, rather than a negative factor, in predicting task performance,

when individuals put more efforts into a task (Smillie, et al., 2006). When people are highly anxious, they are more likely to focus on the task at hand. Then there are fewer resources that would lead to distraction, and as a result, the task performance would be more likely to be better than for the person who has very limited resources allocated to the one particular task (Smillie, et al., 2006). This finding contrasts with the commonly accepted tendency to perceive neuroticism as a negative personality trait or as a non-significant factor in the prediction of task performance. Thus, empirical research evidence demonstrates a positive and significant relationship between neuroticism and task performance under the influence of the moderator of individual effort intensity (Smillie, et al., 2006).

Hypotheses

Task Performance

Motowidlo et al. (1994) found that only conscientiousness was significantly and positively related to task performance. However, as discussed above, neuroticism might be also a positive predictor of task performance when moderated by

individual effort intensity (Smillie, et al., 2006). Therefore, to be consistent with previous research, I will use conscientiousness to predict task performance.

Hypothesis 1: Conscientiousness will positively predict task performance.

When highly anxious individuals are more strongly engaged in a task at hand, they are less likely to be distracted; thus, highly anxious individuals would be more likely to produce better task performances (Smillie, et al., 2006). Specifically, people with a high degree of effort intensity are expected to show a stronger positive effect of neuroticism than those people with a low degree of effort intensity. Figure 2 shows the proposed interaction. Based on the above discussion, I propose the following hypothesis:

Hypothesis 1a: The effect of neuroticism on task performance will be stronger for individuals with high effort intensity, compared with individuals with low effort intensity.

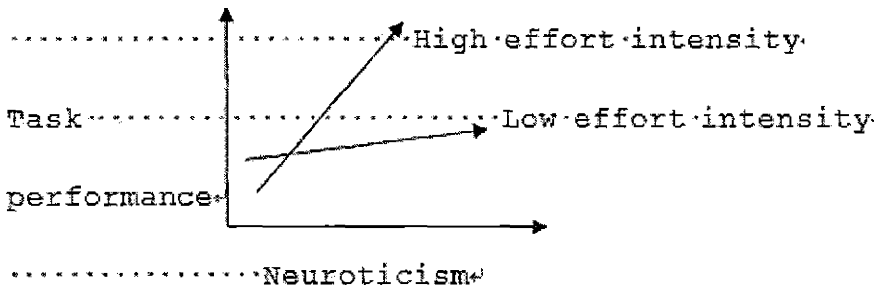

Figure 2. Hypothesis 1a

Since conscientiousness has been a significant positive predictor of task performance (Gellatly, 1996), and if hypothesis 1a is found to be supported, I want to compare the variance in predicting task performance of conscientiousness versus interaction between neuroticism and effort intensity.

Hypothesis 1b: Conscientiousness will explain more variance in predicting task performance than will the interaction between neuroticism and effort intensity.

Contextual Performance

Motowidlo et al. (1994) pointed out that conscientiousness and neuroticism were both significantly related to contextual performance that included interpersonal facilitation and job dedication. The prior research found that conscientiousness is positively related to contextual performance. Nevertheless, neuroticism is negatively related

to contextual performance (Beaty et al., 2001), which in terms of people who are high in neuroticism tend to be more likely to experience more negative emotions such as depression, anxiety, fear, embarrassment, worry, and have poorer adapting skills to respond to changes (Shi et al., 2009). I want to find out which trait predicts more variance in contextual performance, which leads to hypothesis 2:

> *Hypothesis 2: Based on previous research, I propose that conscientiousness explains more variance than neuroticism in contextual performance.*

CHAPTER TWO

METHOD AND RESULT

Measures

Conscientiousness

The feature of conscientiousness that is of most theoretical interest is the goal-oriented tendency for individuals to exhibit motivation to success. For this reason I selected the Achievement-Striving facet of conscientiousness based on the Revised NEO Personality Inventory (NEO-PI-R) (Costa, 1992) from the International Personality Item Pool (IPIP) (Goldberg, Johnson, Eber, Hogan, Ashton, Cloninger, & Gough, 2006).

The IPIP Achievement-Striving measure was used as a 10-item scale, with a high score representing an individual who is goal oriented, achievement motivated, and quality demanding; a low score defines low motivation to success and little time and effort put into tasks (Barrick, Mount, & Strauss, 1993). Participants responded on a 5-point scale anchored with 1(Strongly Disagree) and 5 (Strongly Agree). The reliability coefficient for the IPIP Achievement-Striving

has been reported as .78 (Goldberg et al., 2006). Reliability of coefficient alpha for this scale in the main thesis study was .83

Neuroticism

I selected the Anxiety subscale of Neuroticism based on the Revised NEO Personality Inventory (NEO-PI-R) (Costa, 1992) from the International Personality Item Pool (IPIP) (Goldberg et al., 2006), because it reflects the tendency for individuals to be over worried about life (Scheier, Carver, & Bridges, 1994).

The IPIP Anxiety measure is a 10-item scale, with low scorers defined as calm, rational, and stable, whereas high scorers are defined as fearful, worrisome, and irritable (Costa, 1992). Similarly, participants responded on a 5-point scale that ranges from 1(Strongly Disagree) to 5 (Strongly Agree). In terms of construct validity, multivariate studies show that the IPIP Anxiety measure is one of the primary components of neuroticism (Costa, 1992). The reliability for the IPIP Anxiety subscale has been reported as .83 (Goldberg et al., 2006). Reliability of coefficient alpha for this scale in the main thesis study was .88.

Effort Intensity

To measure effort intensity, two dimensions were included that are "work intensity" and "time commitment" (Brown et al., 1996, p. 362). Specifically, work intensity refers to the effort that employees put forth toward their usual duties during a regular day. Example items are: "when there is a job to be done, I devote all my energy to getting it done," and "I work at my full capacity in all of my job duties." Time commitment, the other dimension of effort intensity, refers to persistence, which is shown in terms of working long hours to achieve job success. It is measured by 5 items, which include: "Among my peers, I am always the first to arrive and the last to leave," and "I put in more hours throughout the year than most of our colleagues do." Participants responded on a 5-point scale ranging 1 (Strongly Disagree) to 5 (Strongly Agree). The reliability of these two dimensions has been reported as .82 and .86 (Brown et al., 1996). For the main thesis study, the reliability coefficients of these two dimensions were: .86 and .73; Cronbach's alpha for the longer scale in this study was .82.

Task Performance

The Bernardin and Beatty's research (as cited in Viswesvaran, 2001) defined the main construct of total job performance as having six dimensions: "quality, quantity, timeliness, cost-effectiveness, need for supervision, and interpersonal impact" (p. 114). Since interpersonal impact has consistently been reported as one of the most significant dimensions of contextual performance, the other five dimensions would be inferred as the major components of task performance.

Specifically, quality refers to the degree of excellence, which can be defined in terms of few or no mistakes of completed work. For instance, the quality of a sales person is the way he provides service to customers, including his attitude, communication tone and speed, facial expression, and sales skills. Moreover, quantity means the number of pieces made, products produced, items sold, or customer services. For instance, the top sales person sold 1000 cups of coffee per day, which is much more than the average sale of around 500 cups. Third, timeliness refers to the ability of an employee to complete work on or before deadlines, and also considers

the pace and progress of the employee's work. The employee would not be considered an "excellent employee" if he did not complete tasks on time, even if the work was of sufficient quality and quantity. Fourth, cost-effectiveness refers to the contribution of the employee with the lowest financial or resource cost. Normally, the top performer would help an organization conserve human capital and financial resources as much as possible. Last, need for supervision refers to the degree of employees' independence in completing job tasks. Admittedly, some types of jobs require more supervision because of the nature of the job. In this case, I am using the term to refer to employees who require more supervision by reason of their poor performance, i.e., if a sales person isn't able to develop markets by himself, and always requires more monitoring than his peers, his task performance is referred to as low or poor.

Given that a large amount of research has yet develop a task performance evaluation that can be applied for any type of occupation, a pilot survey was necessary to evaluate this proposed measure. The pilot survey included the five main components of task performance discussed above, and the scale

used a Likert scale which ranged from 1 to 5 (e.g., for the item "quality of work", the anchors were: 1, very poor quality, work often needs to be redone, to 5, excellent quality, few mistakes; Survey 4 in Appendix C). Because the scale was developed for this thesis, the reliability coefficients will be reported after completion of the pilot study.

Contextual Performance

To measure contextual performance, a scale that contained the two major components described by Borman and Motowidlo (1997) was created. These two components were job dedication and interpersonal facilitation. Job dedication is a motivational aspect of contextual performance, and captures the dimensions of initiative, motivation to perform the job, motivation to learn new technologies, motivation to work hard, and interest in self-development. Interpersonal facilitation refers to interpersonal contextual performance, and assesses interpersonal conflict resolution, negation skills, teamwork and cooperation (Barrick et al., 1993; Chan & Schmitt, 2002). Thus, five key aspects of contextual performance described by Borman and Motowidlo (1997) and based on the two primary dimensions were used as the foundation for the contextual

performance scale (see Appendix A). These key aspects were:

1) Persistence and enthusiasm to complete own task activities successfully
2) Initiative and taking on extra responsibility
3) Helping and cooperating with others
4) Following organizational rules and procedures
5) Organizational loyalty and defending organizational objectives

Participants responded on a 5-point scale that ranged from 1(never or rarely displays this behavior) to 5 (always or almost all the time displays this behavior). See Survey 4 in Appendix C. Because the scale was developed for this thesis, the reliability coefficients will be reported after completion of the pilot study.

Next, I will report the results of a pilot study that was conducted to assess the reliability and factor structure of the task and contextual performance scales.

Pilot Study

Sample

From CSUSB students, 120 surveys were returned, with 63 valid responses from employees who were working at least 20 hours a week. Of those 63, valid responses included 8 supervisors, and 55 employees.

Procedure

I contacted CSUSB instructors to approach students in their classes to ask for their participation in my study. If given instructor approval, I distributed surveys to students. If participants were supervisors, they were instructed to select one of their subordinates whom they would rate on each of the items. If participants were not a supervisor of any employee, they were asked to rate themselves as they believe their supervisor would rate them. The surveys were collected in the paper-pencil format. The purpose of the pilot study was to develop a measurement of job performance that could be used across a variety of jobs. The instrument addressed two main job components, task and contextual performance. The scale was composed of two dimensions of 10 items.

Result

Tables 1 show the means, standard deviations, correlations, and alpha reliability coefficients for the

scales of task performance. Cronbach's alpha for the scale containing 5 items of task performance was .711, and Cronbach's alpha for the 5 items of contextual performance was .662. As can be seen in Table 1, the item "Quantity of work" could be deleted to improve alpha. Item "Quantity of work" was placed on the scale based on an overview of job performance given by Viswesvaran (2001). Bernardin et al. (as cited in Viswesvaran, 2001) defined the main construct of total job performance as having six dimensions: "quality, quantity, timeliness, cost-effectiveness, need for supervision, and interpersonal impact" (p. 114). Although deleting the item would have improved alpha, the conceptual basis for quantity of work as part of task performance compelled the researcher to retain the item. Further, the alpha for the task performance scale was within the range typically considered acceptable (.70; Nunnally, 1978)

The alpha for the contextual performance scale was lower than is desirable, but considering the brevity of the scale, the reliability coefficient for contextual performance may be considered suitable for research (Nunnally, 1978).

Table 1. Means, Standard Deviations, Correlations, and Alpha Reliabilities of Items of Task Performance

Items	M	SD	Cronbach's Alpha if Item Deleted	Corrected Item-Total Correlation
Quality of work	4.0	0.6	0.63	0.54
Quantity of work	3.7	0.7	**0.74**	**0.31**
Timeliness of work	3.7	0.9	0.66	0.47
Effectiveness Cost	4.1	0.6	0.67	0.44
Independence	4.2	0.8	0.59	0.61

Note: N = 63.

Table 2. Means, Standard Deviations, Correlations, and Alpha Reliabilities of Items of Contextual Performance

Items	M	SD	Cronbach's Alpha if Item Deleted	Corrected Item-Total Correlation
Persistence and Enthusiasm	3.9	0.8	0.60	0.43
Take initiative	3.9	0.8	0.64	0.35
Help and cooperate	4.4	0.6	0.59	0.45
Follow organizational rules	4.3	0.6	0.58	0.47
Loyal to the organization	4.2	0.8	0.62	0.38

Note: N = 63.

Because the items were written specifically for this study, a principal axis factor analysis was conducted to assess the dimensionality of the scales. Table 3 shows the loadings of the two factors that were extracted from the 5-item scale of task performance. The cumulative variance captured by the two factors was 50%. The factor analysis reveals a lack of unidimensionality among the five items. The item "Quantity of work" shows a cross-loading between factor 1 and factor 2. In the reliability analysis, the item "Quantity of work" had the lowest Item-Total Correlation (r = .309), and has the highest Cronbach's Alpha if Item Deleted (α = .724). It is highly possible that some of jobs held by participants, jobs such as customer service, or human resource management might make it difficult for participants to rate themselves for quantity of work. Thus, the item "Quantity of work" might be relatively weaker in measuring task performance, especially in a self-report survey. However, since this is a short survey and the item "Quantity of work" plays an important role in majority of jobs, I still used all of the items in my thesis research. I re-examined the dimensionality of task performance in the main thesis study.

Table 3. Pattern Matrix of Items of Task Performance

	Factor 1	Factor 2
Quality of work	0.35	0.44
Quantity of work	**-0.93**	**0.71**
Timeliness of work	0.51	0.12
Effectiveness Cost	0.91	-0.19
Independence	0.45	0.42

Table 4 shows the loadings of the one factor that was extracted from the 5-item scale of contextual performance. The cumulative variance captured by the factor was 30%. The factor analysis shows that unidimensionality appears to exist among the items, which supports use of the scale to measure contextual performance.

Table 4. Pattern Matrix of Items of Contextual Performance

	Factor 1
Persistence and Enthusiasm	0.53
Take initiative	0.41
Help and cooperate	0.61
Follow organizational rules	0.65
Loyal to the organization	0.49

Of the 63 participants, eight indicated that they were supervisors and were rating an employee who reported to them. As inflation is expected in self-ratings, comparing the ratings by supervisors asked to rate a direct report with the ratings that participants gave themselves could serve as an indication of how much inflation might be expected in self-reports for this sample. Table 5 and table 6 show the number of responses, means, and standard deviations of supervisors' ratings and self-ratings of task performance and contextual performance. The differences in responses of each item between supervisors' ratings and self-ratings did differ; however, the result of an independent two sample t test showed no significant mean differences between supervisors' ratings and self-ratings in items of task performance and contextual performance ($t = -1.54$, $p = .12$, Cohen's $d = -0.60$; $t = -1.69$, $p = .09$, Cohen's $d = -0.55$). It is possible that because the dataset for the supervisors' ratings was small, the lack of significance could be attributed to the discrepancy in cell sizes. Nevertheless, the lack of significant difference is suggestive and I used self-ratings in the data collection for statistical analysis in the thesis research.

Table 5. Supervisors' Rating versus Self Rating in Task Performance

	Supervisor's Rating			Self Rating		
	M	*SD*	*N*	*M*	*SD*	*N*
Quality of work	4.00	0.75	8	4.10	0.67	55
Quantity of work	3.63	0.51	8	3.82	0.79	55
Timeliness of work	3.25	1.03	8	3.85	0.87	55
Effectiveness Cost	3.88	0.83	8	4.22	0.65	55
Independence	4.00	0.53	8	4.29	0.85	55

Table 6. Supervisors' Rating versus Self Rating in Contextual Performance

	Supervisor's Rating			Self Rating		
	M	*SD*	*N*	*M*	*SD*	*N*
Persistence and Enthusiasm	4.13	0.83	8	3.94	0.81	55
Take initiative	3.63	0.91	8	4.02	0.87	55
Help and cooperate	4.00	0.75	8	4.56	0.63	55
Follow organizational rules	4.00	0.92	8	4.38	0.62	55
Loyal to the organization	3.88	0.83	8	4.33	0.81	55

MAIN THESIS STUDY

Determining Sample Size

Motowidlo et al. (1994) found a significant product-moment correlation coefficient for conscientiousness predicting task performance of r = .36, a medium effects size. For a significance test of a sample r at *a* = .05 and high power (.80), a sample size of 85 is necessary (Cohen, 1992). Smillie et al. (2006) found that 41% of the variance in task performance was explained by the interaction of neuroticism and individual effort intensity. This is a large effect size (Cohen, 1992). Thus, for a significance test of a sample r at *a* = .05 and high power (.80), a sample size of 30 is necessary to conduct this analysis (Cohen, 1992).

Chan et al. (2002) found in their research that conscientiousness predicted job dedication, whereas neuroticism predicted interpersonal facilitation, close to a medium effect size for both conscientiousness and neuroticism to predict contextual performance. For a significance test of a sample r at *a* = .05 and high power (.80), a sample size of 120 is required to conduct the analysis (Cohen, 1992).

Sample

A total of 251 valid responses from participants who were working at least 20 hours a week were collected from five organizations in the Los Angeles area. These organizations are in major industries such as manufacturing, electronics, and insurance. After removing those who did not meet the working criterion and the outliers, 245 responses were retained for use in the analyses. Responses included 60 supervisors, and 185 employees; 170 female, and 75 male. The top two occupations were "sales associate" and "administrative cooperator". The mean for length of time in the given position was 3 years, and the standard deviation was 4.1 years. The mean for length of time working since high school was 6 years, with a standard deviation of 6.5 years.

Procedure

I distributed the online survey link via emails to CSUSB alumni and professional colleagues; I also distributed the paper-pencil format of survey to my friends, peers, and students at CSUSB.

All the participants completed a self-rating survey that contained a 10-item scale of conscientiousness, a 10-item

scale of neuroticism, a 10-item scale of effort intensity, a 5-item scale of task performance, and a 5-item scale of contextual performance. These measures were described earlier.

Result

Reliability and Factor Analysis. Responses were collected for five variables: conscientiousness, neuroticism, effort intensity, task performance, and contextual performance. The reliability coefficients of all measures were consistent with previous literature reviews and the results of the pilot study. Cronbach's alpha for the scales of conscientiousness, neuroticism, effort intensity, task performance, and contextual performance were .838, .887, .826, .622, and .634, respectively. The alpha for the task and contextual performance scales were very low, but above the bottom range that Nunnally (1978) suggests as feasible for research purposes (.60).

I also conducted a principal axis factor analysis to assess the study scales for unidimensionality. The scales for neuroticism, task performance, and contextual performance yielded a single factor from the factor analysis. However,

two factors were extracted from each of the effort intensity and conscientiousness scale. The extraction of two factors (eigenvalue > 1) for effort intensity can be explained both rationally and by reviewing the two extracted factors. As I mentioned in the literature review, effort intensity can be construed as two dimensions: "work intensity" and "time commitment" (Brown et al., 1996, p. 362). The reliability coefficient alpha in the main thesis study for the items that represented work intensity was .864, and for the five items representing time commitment was .733, which suggests that the two factors could be used individually. However, for the purpose of this study, the 10 items were used as a single scale to be sure to measure the construct as comprehensively as possible; the reliability for this longer scale was high: .826. Table 7 shows the loading values of 10 items in the scale of effort intensity.

Table 7. Pattern Matrix of Items of Effort Intensity

	Factor 1	Factor 2
When there's a job to be done, I devote all my energy to getting it done.	0.62	0.04
When I work, I do so with intensity.	0.56	0.20
I work at my full capacity in all of my job duties.	0.84	-0.07
I strive as hard as I can to be successful in my work.	0.89	-0.06
When I work, I really exert myself to the fullest.	0.77	0.01
Other people know me by the long hours I work.	0.14	0.59
My colleagues know I am in the office early and always leave late.	0.04	0.68
Among my peers, I am always the first to arrive and the last to leave	0.04	0.62
Few of my peers put in more hours weekly than I do.	-0.04	0.36
I put in more hours throughout the year than most of our colleagues do.	-0.03	0.65

Surprisingly, the conscientiousness scale was not unidimensional. Factor analysis (see Table 8) shows the loadings of the 10 items in the scale of conscientiousness. It seems that the negative aspects of the construct loaded separately from the positive features of conscientiousness.

This split in the items based on directionality does permit the use of the single scale (by reverse scoring the negative items).

Table 8. Pattern Matrix of Items of Conscientiousness

	Factor 1	Factor 2
Go straight for the goal	0.38	0.18
Work Hard	0.39	0.27
Turn plans into actions	0.44	0.18
Plunge into tasks with all my heart	0.75	-0.26
Do more than what's expected of me	0.59	0.12
Set high standards for myself and others	0.70	-0.03
Demand quality	0.66	-0.10
Am not highly motivated to succeed	-0.06	0.64
Do just enough work to get by	0.06	0.69
Put little time and effort into my work	0.15	0.55

Univariate Outliers. Prior to conducting the main analyses, I examined the distributions for outliers, using a *Z* of 3.30. I detected 3 univariate outliers for conscientiousness, 1 univariate outlier for task performance,

and 1 univariate outlier for contextual performance. These cases were not used in testing the hypotheses.

Multivariate Outliers. Prior to conducting the regression analyses, I used Mahalnobis's distance (χ^2= 10.83, and χ^2= 16.27) to examine the data for multivariate outliers. Using $p < .001$ as my criterion, I detected 2 multivariate outliers in the regression model in which conscientiousness predicts task performance, and 2 multivariate outliers in the regression model in which conscientiousness predicts contextual performance. Taken together, there were 245 valid responses retained for the hypotheses testing. Table 9 shows means and standard deviations for the key variables.

Table 9. Descriptive of Variables

Variables	M	SD	N
Conscientiousness	4.27	0.47	246
Neuroticism	2.80	0.78	246
Effort Intensity	3.59	0.57	245
Task Performance	4.08	0.40	245
Contextual Performance	4.26	0.47	246

Relationships between Conscientiousness and Task Performance. In Hypothesis 1, I predicted that conscientiousness would positively predict task performance. I performed a simple regression for conscientiousness and task performance. The results were consistent with the literature review that conscientiousness positively and significantly predicted task performance. Twenty percent of the variance in task performance was explained by conscientiousness (F = 64.17, $p < .001$, standardized $\beta = .45$, $t = 8.0$, $p < .001$).

Relationships between Neuroticism, Effort Intensity, Interaction, and Task Performance. To test Hypothesis 1a in which I predicted effort intensity on task performance would be stronger for highly neurotic individuals relative to less neurotic individuals, I performed a hierarchical regression analysis for neuroticism, effort intensity, and its interaction to predict task performance. My goal was to determine if effort intensity and its interaction with neuroticism added a unique contribution in the prediction of the task performance above and beyond neuroticism. Before conducting the regression analysis, I centered the variables effort intensity and neuroticism. Then I created a

multiplicative interactive term. I entered neuroticism as the control variable in Step 1. Then, I entered effort intensity in Step 2. Last, I entered the interaction between effort intensity and neuroticism in Step 3. Table 10 shows that, neuroticism negatively but significantly predicted task performance. Six and one half percent of variance was explained by the neuroticism ($F = 16.90$, $p < .001$, standardized $\beta = -.225$, $t = -4.11$, $p < .001$). Effort intensity explained an additional 11.4% of variance in task performance over and above neuroticism ($\Delta F = 33.61$, $p < .001$, standardized $\beta = .339$, $t = 5.79$, $p < .001$). However, the interaction between neuroticism and effort intensity explained only an additional 0.2% of variance in the task performance over and above effort intensity and neuroticism ($\Delta F = .478$, $p = .49$), thus providing no support for Hypothesis 1a.

Table 10. Neuroticism, Effort Intensity, and Interaction

Step	Predictors	ΔR^2	ΔF	Std. β	t
1	Neuroticism	0.06	16.90*	-0.25	-4.11*
2	Effort Intensity	0.11	33.61*	0.33	5.79*
3	Interaction	0.002	0.47ns	-0.04	-0.69ns

N = 245, *p<.001

I proposed Hypothesis 1b that conscientiousness would explain more variance in predicting task performance than would the interaction between neuroticism and effort intensity. As expected from the results in Hypothesis 1a in which the interactive term was not significant, conscientiousness explained 20% of variance in the task performance (Std. β = .45) whereas the interaction between neuroticism and effort intensity only explains additional 0.2% of variance (Std. β = -0.04). Thus, Hypothesis 1b was supported.

Relationships between Conscientiousness/Neuroticism and Contextual Performance. I proposed in Hypothesis 2 that conscientiousness would explain more variance than neuroticism in contextual performance. The results of a simple regression analysis that was to assess the relationship

between conscientiousness/neuroticism and contextual performance supported Hypothesis 2. Conscientiousness positively and significantly predicted contextual performance, and explained 20.7% of the variance in contextual performance (F = 63.27, p < .001, standardized β = .45, t = 7.95, p < .001). On the other hand, neuroticism was not significantly related to contextual performance, explaining only 1.1% of the variance in the prediction (F=2.69, p= .102, standardized β = -.105, t = -1.64, p = .102). Therefore, Hypothesis 2 was supported as well.

Ancillary Analysis: Comparison between Responses Collected Online versus Responses Collected by Paper-pencil. The thesis data were collected by two methods: online and paper-pencil. I conducted an independent two sample t-test to evaluate for mean difference between the two methods of data collection in assessing task performance and contextual performance. The result showed a non-significant mean difference between responses collected online and responses collected by the paper-pencil (t = 1.51, p = .13, Cohen's d = 0.40; t = 0.35, p = .72, Cohen's d = 0.07). It is possible that the dataset for the online survey format was so small

(n = 20) that the lack of significance could be attributed to the discrepancy in cell sizes.

CHAPTER THREE

DISCUSSION, IMPLICATIONS, AND LIMITATIONS

Discussion

This study addressed an important concept in the literature by examining the relationships between neuroticism, effort intensity, and task performance, and the relationship between conscientiousness/neuroticism and contextual performance. Consistent with previous research, I did find a significant prediction of task performance using the personality variables, conscientiousness. As previous research has demonstrated, conscientiousness relates to goal orientation, achievement aspiration, persistence, and efficiency. Clearly, all of these attributes are directly related to task performance.

The current results did not support hypothesis 1a: Effort intensity significantly moderate the direction and strength of the relationship between neuroticism and task performance. Specifically, neuroticism was negatively related to task performance as expected, and effort intensity was positively related to task performance as expected, but the interaction

between neuroticism and effort intensity did not significantly predict task performance. There was only 0.2% of additional variance explained by the interaction. This finding is not consistent with the previous experimental research reported by Smillie et al. (2006), and suggests that highly neurotic people do not display significantly stronger effort intensity on task performance than the less neurotic people in the organizations.

It is possible that this result is a function of the method used in this study. I used a self-report survey method in which participants responded to survey questions about their task performance. In Smillie et al.'s (2006) study, participants were required to focus on an experimental task, which served as the measure of task performance. In Smillie et al.'s (2006) experimental task, participants got points (40 points, 30 points, 20 points, and 10 points) for making corrected decisions of an aircraft event, based on their reaction time. Thus, participants' task performance was evaluated by how many points they got in total at the end of the event. In my thesis study, I evaluated the task performance based on its major components, such as quality, quantity, timeliness,

cost-effectiveness, and need for supervision, which might be more accessible to most of the occupations. Smillie et al.'s (2006) experimental research measures the instant reaction of their task performance, and combination with effort intensity. However, my thesis research measures task performance based on the participants' routine work behaviors and performance, which may be a more realistic appraisal of how work is typically assessed.

Although conscientiousness and neuroticism were suggested as equally important predictors to predict contextual performance (Chan et al., 2002), my study showed that conscientiousness is still the more powerful predictor of contextual performance. Twenty percent of variance in the contextual performance was explained by conscientiousness, contrasting with one percent of variance that was explained by the neuroticism.

Theoretical and Practical Implications

Even though the study did not support an interaction between neuroticism and effort intensity to positively predict task performance, conscientiousness and neuroticism were

still proven to be important predictors in both task performance and contextual performance. Motowidlo et al. (1997) suggested task performance is strongly related to an individual's knowledge, skills, abilities, experiences, and natural task habits. Conceptually, conscientiousness and neuroticism could be considered moderators that affect the relationship between personal background and job performance. Though this study did not find evidence to support effort intensity, the evidence for conscientiousness and neuroticism supports their use in the selection process.

In addition, as I noted in the discussion, it is possible that my thesis study more accurately measured the interaction between neuroticism and effort intensity in predicting task performance in the real work settings. Organization might find it efficacious to view effort intensity as a separate variable, rather than a moderator in the selection process.

Limitations

There are several limitations to consider. First, the reliability coefficients of task performance scale and contextual performance scale were lower than desirable. In

the future I would consider improving the reliability coefficient of task performance scale by limiting the career types in which participants could rate themselves, in particular on the item "Quantity of work". Additionally, I would increase the number of items of task performance and contextual performance scales in an effort to increase their reliability coefficients. Second, the conscientiousness scale did not show unidimensionality, which suggest our estimation of the relationship between conscientiousness and contextual performance might be deflated. Future researchers might consider using a different scale of conscientiousness. Third, even though the study failed to support the interaction between effort intensity and neuroticism as positively related to task performance, effort intensity is still a viable factor in predicting job performance. Further research could consider applying the idea of effort intensity to a broader field that is related to job performance. Fourth, because I did not ask for hours worked, I could not distinguish the full time employees from the student part time employees in the main thesis study, which may have affected the result. Thus, future researchers should evaluate effort intensity within the

context of full or part-time workers as part time workers, by definition, may simply not be as committed to their jobs.

Conclusion

In this study, conscientiousness and neuroticism were demonstrated to be significant predictors in explaining task performance. However, I failed to find that the interaction between neuroticism and effort intensity would significantly predict task performance. In addition, I found conscientiousness positively predicted contextual performance, and explained much larger variance than neuroticism. The findings could be helpful to identify appropriate selection tools in human resources management.

APPENDIX A

THE BORMAN AND MOTOWIDLO

CONTEXTUAL PERFORMANCE TAXONOMY

THE BORMAN AND MOTOWIDLO

CONTEXTUAL PERFORMANCE TAXONOMY

Persisting with enthusiasm and extra effort as necessary to complete own task activities successfully

Perseverance and conscientiousness (Borman, Motowidlo, & Hanser, 1983)

Extra effort on the job (Brief & Motowidlo, 1986; Katz & Kahn, 1978)

Volunteering to carry out task activities that are not formally part of own job

Suggesting organizational improvements (Brief & Motowidlo, 1986; Katz & Kahn, 1978)

Initiative and taking on extra responsibility (Borman et al., 1983; Brief & Motowidlo, 1986; Katz & Kahn, 1978)

Helping and cooperating with others

Assisting/helping co-workers (Borman et al., 1983; Brief & Motowidlo, 1986; Katz & Kahn, 1978)

Assisting/helping customers (Brief & Motowidlo, 1986)

Organizational courtesy and not complaining (Organ, 1988)

Altruism (Smith, Organ, & Near, 1983)

Following organizational rules and procedures

Following orders and regulations and respect for authority (Borman et al., 1983)

Complying with organizational values and policies (Brief & Motowidlo, 1986)

Conscientiousness (Smith, et al., 1983)

Meeting deadlines (Katz & Kahn, 1978)

Civic virtue (Graham, 1986)

Endorsing, supporting, and defending organizational objectives

Organizational loyalty (Graham, 1986)

Concern for unit objectives (Borman et al., 1983)

Staying with the organizational during hard times and representing the organization favorably to outsiders (Brief & Motowidlo, 1986)

Reprinted from Borman & Motowidlo, 1997, p. 102.

APPENDIX B

PARTICIPANT INFORMED CONSENT SHEET

Informed Consent

You are invited to participate in a study being conducted by Lu Qin under the direction of Dr. Janet Kottke in the Department of Psychology for a graduate thesis. This study has been approved by the Department of Psychology Institutional Review Board Sub-Committee of the California State University, San Bernardino, and a copy of the official Psychology IRB stamp of approval should appear on this consent form.

The purpose of my graduate thesis research is to measure the relationship between two aspects of personality (Conscientiousness, Neuroticism) and job performance (Task and Contextual Performance). I expect to find the interaction between Neuroticism and Individual Effort intensity in predicting job performance, as well as the relationship between Conscientiousness and job performance. Completion of Conscientiousness, Neuroticism, Effort Intensity, Task Performance, and Contextual Performance survey scales will take approximately 10-15 minutes.

If you are the employee who is currently working at least 20 hours a week, you are able to participate in this study. You will conduct the self-rating in the Conscientiousness, Neuroticism, Effort Intensity, Task Performance, and Contextual Performance surveys. Your personal information and responses are absolutely confidential. You are able to response surveys either online or using pencil-paper format.

If you are a CSUSB student, you will be asked to provide your name and SONA ID for points that at your instructor's discretion you may apply to course credit. This information will be stored separately from your responses, to protect the anonymity of your responses.

There is no foreseeable risk associated with this study beyond those of everyday life, or any direct benefits for you as an individual. Results from this study will be reported in group format only so the confidentiality and anonymity of your data will be maintained. Results from this study will be available from Lu Qin (qin1@csusb.edu) after June 30, 2011.

Please read the following before indicating that you are willing to participate.

1. The study has been explained to me and I understand the explanation that has been given and what my participation will involve.
2. I understand that I am free to choose not to participate in this study without penalty, free to discontinue my participation in this study at any time and am free to choose not to answer any questions that make me uncomfortable.
3. I understand that no identifying information will be collected in this study that that my responses will remain anonymous. I may request group results of this study.
4. I understand that, at my request, I can receive additional explanations of this study after my participation is completed.

Please do NOT put your name on this questionnaire.
By placing an X in the space below, I acknowledge that I have been informed of, and that I understand, the nature and purpose of this study, and I freely consent to participate. I also acknowledge that I am at least 18 years of age.

Participant's X _____

Date: _____

CALIFORNIA STATE UNIVERSITY, SAN BERNARDINO
PSYCHOLOGY INSTITUTIONAL REVIEW BOARD SUB-COMMITT
APPROVED 08 / 13 / 10 VOID AFTER 08 / 13 / 11
IRB# H-10SU-07 CHAIR

APPENDIX C

PILOT STUDY SURVEY

Pilot Survey

Dr. Janet Kottke and I developed this pilot survey to assess the scale of task performance and contextual performance.

Please answer this question before continuing on to the rest of the survey:

Are you a supervisor? Yes ☐ No ☐

If you are a supervisor, how many subordinates do you currently supervise?

_____

Please select one of your subordinates whom you will rate on each of the items below. Do not write a name on this form but do think of this employee as you read each item and rate.

If you are NOT a supervisor, please rate yourself as you believe your supervisor would rate you. Consider your most recent performance appraisal as you complete this form.

Below are different aspects that can be used to describe employee performance. Within each box, you will find a brief description of the job aspect and a rating scale ranging from 1 to 5. Please put one number in each box to the right ("Your Rating").

Quality of work: *The quality of the work performed, which can be defined in terms of mistakes made and excellence of output.* 1 - work by this employee often needs to be redone; very poor quality work 2 - employee frequently makes mistakes; does poor quality work 3 - employee's work is of average quality 4 - employee makes few errors, work is very good 5 - employee makes very few or no mistakes, excellent work	Your Rating
Quantity of work: *The number of pieces produced, products made, items sold, or customers served. Do NOT consider quality, only quantity in making your rating.* 1 - very poor production, usually fails to achieve an expected amount of output 2 - below average quantity, often fails to achieve expected amount of output 3 - average production, work usually achieves the expected amount of output 4 - above average production, work regularly exceeds the expected amount of output	Your Rating

5 - high production, work almost always or always exceeds the expected amount of output	
Timeliness of work: *The ability of an employee to complete work on or before deadlines, also consider the pace and progress of the employee's work.* 1 – employee often misses deadlines, progress on work is very slow. 2 – employee occasionally misses deadlines, progress on work is slow 3 – employee rarely misses deadlines, progress on work is adequate 4 – employee never misses deadlines, progress on work is above average 5 – employee usually completes work in advance of deadlines; rapid pace of work	Your Rating
Cost-effectiveness: *The contribution of the employee in the effective use of organizational resources.* 1- employee almost always wastes materials, the time of others, and organizational resources 2 - employee frequently wastes materials, the time of others, and organizational resources 3 - employee occasionally wastes materials, the time of others, and organizational resources 4 - employee rarely wastes materials, the time of others, and organizational resources 5 - employee never wastes materials, the time of others, organizational resources	Your Rating
Need for supervision; *The degree of supervision required to monitor employee to ensure that the work is being done properly.* 1 - employee requires constant supervision, incapable of working independently 2 - employee requires frequent supervision, 3 - employee requires occasional supervision 4 - employee requires little supervision 5 – employee requires virtually no supervision, capable of working autonomously.	Your Rating

For the following set of performance dimensions, please use the following scale: 1- Never or rarely displays this behavior 2 - Occasionally displays this behavior	**Your Rating**

3 - Displays this behavior more than occasionally, but not frequently 4 - Frequently displays this behavior 5 - Always or almost all the time displays this behavior	
Persistence and enthusiasm in completing tasks on the job	
Takes initiative to take on extra responsibility at work	
Helps and cooperates with other employees	
Follows organizational rules and procedures	
Loyal to the organization	

APPENDIX D

MAIN THESIS SURVEY

Survey 1 Conscientiousness (Achievement-striving)

IPIP Items (Alpha = .78)

Participants responded on a 5-point scale that ranged from 1 (Strongly Disagree) to 5 (Strongly Agree).

C1. Go straight to the goal

C2. Work hard

C3. Turn plans into actions

C4. Plunge into tasks with all my heart

C5. Do more than what's expected of me

C6. Set high standards for myself and others

C7. Demand quality

C8. Am not highly motivated to succeed

C9. Do just enough work to get by

C10. Put little time and effort into my work

Goldberg, L. R., Johnson, J. A., Eber, H. W., Hogan, R., Ashton, M. C., Cloninger, C. R., & Gough, H. C. (2006). The international personality item pool and the future of public-domain personality measures. *Journal of Research in Personality*, 40, 84-96.

Survey 2 Neuroticism (Anxiety)

IPIP Items (Alpha = .83)

Participants responded on a 5-point scale that ranged from 1 (Strongly Disagree) to 5 (Strongly Agree).

N1. Worry about things

N2. Fear for the worst

N3. Am afraid of many things

N4. Get stressed out easily

N5. Get caught up in my problems

N6. Am not easily bothered by things

N7. Am relaxed most of the time

N8. Am not easily disturbed by events

N9. Don't worry about things that have already happened

N10. Adapt easily to new situations

Goldberg, L. R., Johnson, J. A., Eber, H. W., Hogan, R., Ashton, M. C., Cloninger, C. R., & Gough, H. C. (2006). The international personality item pool and the future of public-domain personality measures. *Journal of Research in Personality*, 40, 84-96.

Survey 3 Individual Effort Intensity (Alpha = .82 and .86)

Participants responded on a 5-point scale that ranged from 1 (Strongly Disagree) to 5 (Strongly Agree).

E1. When there's a job to be done, I devote all my energy to getting it done.

E2. When I work, I do so with intensity.

E3. I work at my full capacity in all of my job duties.

E4. I strive as hard as I can to be successful in my work.

E5. When I work, I really exert myself to the fullest.

E6. Other people know me by the long hours I work.

E7. My colleagues know I am in the office early and always leave late.

E8. Among my peers, I am always the first to arrive and the last to leave.

E9. Few of my peers put in more hours weekly than I do.

E10. I put in more hours throughout the year than most of our colleagues do.

Brown, S. P., & Leigh, T. W. (1996). New look at psychological climate and its relationships to job involovement, effort, and performance. *Journal of Applied Psychology*, 81(4), 358-368.

Survey 4: Task and Contextual
Performance Employee Assessment

Dr. Janet Kottke and I developed the scales of task performance and contextual performance together, and used them in the main thesis study.

Task performance Assessment (Alpha = .71)

TA1. Quality of work

Participants responded on a 5-point scale that ranged from 1 (very poor quality, work often needs to be redone) to 5 (excellent quality, few mistakes).

TA2. Quantity of work

Participants responded on a 5-point scale that ranged from 1 (very poor production, fails to achieve an expected amount of output) to 5 (high production, work exceeds the expected amount of output).

TA3. Timeliness

Participants responded on a 5-point scale that ranged from 1 (I often miss deadlines) to 5 (I usually complete work in advance of deadlines).

TA4. Cost-effectiveness

Participants responded on a 5-point scale that ranged from 1 (I almost always waste materials, the time of others, and organizational resources) to 5 (I never waste materials, the time of others, and organizational resources).

TA5. Need for supervision

Participants responded on a 5-point scale that ranged from 1 (I require constant supervision) to 5 (I require virtually no supervision).

Contextual Performance Assessment (Alpha = .66)

Participants responded on a 5-point scale that ranged from 1 (never or rarely displays this behavior) to 5 (always or almost all the time displays this behavior).

CA1. Persistence and enthusiasm to complete own task activities successfully

CA2. Initiative and taking on extra responsibility

CA3. Helping and cooperating with others

CA4. Following organizational rules and procedures

CA5. Organizational loyalty and defending organizational objective

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